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THE SCIENCE TEMPERANCE TEXT-BOOK

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THE SELECTED

WORKS OF DR F. R. LEES.

PEOPLE'S EDITION.

VOLUME FIRST.

The Parker Museum
PRESENTED BY
THE U.H.E. 1884.

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THE SCIENCE

TEMPERANCE TEXT-BOOK

IN RELATION TO

MORALS, CHEMISTRY, PHYSIOLOGY, CRITICISM, AND HISTORY.

BY

DR F. R. LEES, F.S.A.EDIN.,

Author of 'Metaphysics of Owenism Dissected' (1837); *'History of the Wine Question* (1841); *'A System of Logic'* (1845); *'Argument for Prohibition,'* (1856), *being the One Hundred Guineas Prize Essay; 'Doctors, Drugs, and Drinks'* (1866); *'Lectures for the Million'* (1869); *'Answer to the Four Belfast Professors'; 'Reply to the Clerical World'* (1883); *Joint-Author of 'Temperance Bible Commentary; etc., etc.'*

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PREFACE.

(1871)

THE Author had often been asked to prepare a work illustrative of the Temperance Enterprise, which should be something more than a mere compilation, and at the same time treat all the salient points with a brevity and breadth of evidence adapted to the bulk of men in a busy age, when 'a great book' almost becomes a great evil. The *Temperance Text-Book* was the outcome.

The topic has been dealt with in an independent, original, and methodical manner. In various parts, especially in the historical sections, entirely new information is incorporated. The outlines of the argument have already appeared in our *Text-Book of Temperance*, which has passed through several editions in the United States of America; but the book has now been so extensively modified and received so many additions, as really to constitute it a new work.

If the Science, Philosophy, and Criticism of Temperance are not made satisfactory and valid by the *evidence* here supplied, it would be useless to multiply arguments and illustrations. The Author, however, has the most thorough conviction that it will stand the tests of Time, and survive all adverse criticism, generated of prejudice, interest, and appetite. 'Truth is mighty yea, it liveth and conquereth for evermore.'

(1883)

TWELVE years of work have resulted in a vast increase in the national earnestness for Temperance reform. As one consequence, a second edition of this book has been frequently asked for, but the author could not afford to run the risk of its publication, knowing how much the mass of Temperance, like other, men are indisposed to careful reading. Its issue, in this form, at last, is owing chiefly to the great liberality of one gentleman—JOHN WINTRINGHAM, Esq., of The Abbey, Great Grimsby.

In reproducing the Text-Book, we have added new passages or confirmatory notes to most sections, and carefully revised the whole work. We have omitted the Bible section altogether, and much abridged the historical chapters. These portions of the original work may appear in subsequent and corresponding volumes with large augmentations of evidence. Explanatory words interpolated in a citation, are always put within brackets, thus [ ].

F. R. LEES.

MEANWOOD LODGE, NEAR LEEDS.

INTRODUCTION.

THE discussion opened in this volume is strictly limited to the question of the propriety of using *intoxicating* beverages. If there are, or have been, wines and beers not sensibly intoxicating,—because containing only minute and unfelt amounts of alcohol,—we have no concern with them. Our test of the Prohibited drink is a practical one—*Does it create the drunkard's appetite and grow into Social inebriety?* We care not for refinements and subtleties. The question of some small percentage of alcohol being in ginger beer, or vinegar, or in an over-ripe pear or peach, in grape juice or new cider five hours from the press, we leave to the curious or the quibbling; it has no *moral* interest for us. The question whether a dose of alcohol may be taken *so small* as to produce no *sensible* reaction, we leave to be determined by metaphysically inclined pathologists. There perhaps is a point where a living organ *begins* to resist noxious agents—where, so to speak, it first recognizes the presence of an enemy;—but whether that, in the case of Alcohol, begins with the hundredth part of a drop, or with sixty drops, whether with a twentieth or a millionth dilution, we shall not waste our time to settle in the presence of the awful evils accruing to Society from the use of its *actual beverages*. When that ideal quantum is found out, we shall have then discovered the innocent

use of a noxious thing, and may be so far guided by the enlightenment!—though moderation in an inert and useless thing is a poor sort of virtue. Still, be it remembered, at whatever point, in degree or measure, re-action *does* begin, it is not variable under the same conditions—it goes on the same abnormal lines; acts in the same direction; *tends* to the same end. In other words, the operation of alcohol is, like every other thing, determined by *law*. If at the twentieth drop, it is bad in its relation and work, the twenty-first or twenty-fifth drop cannot become *good*. In other words, the action is *cumulative*. Drop *c* or *d*, when reaction begins, is succeeded by drops *e*, *f*, and *g*, which work similarly, until we come to *x*, *y*, and *z*, when re-action ceases, because susceptibility is abolished—excitation has reached the exhausting point of paralysis—there is nothing vital to resist and re-act. In fact, the underlying notion of the moderationists is an ABSURDITY, namely, that after we leave some special *quantity* (say *m*) and come to the next (*n*), *new properties* develop, and new relations appear, while the factors remain the same! This is but another way of saying, that a given *quantity* is the ultimate mother of *quality*, and a central *size* the essence of all difference, backwards to zero and invisibility, tending through good to indifference, and onwards to bulk, tending to evil and annihilation. This is the final jargon of the theory of 'moderation.' We can conceive of an agent or patient beginning to show *quality* or relation at some particular moment, but we cannot conceive that the *manifestation* had no graduated degrees and steps of preparation, and came into play from *nothing*, or nothing but increase of mass; much less that the quality was at a given moment *transformed* into an effect of an opposite kind! In

other words, varying quantity cannot explain fixed quality. In Chemistry and in Physiology, as in morals, *combination*, proportion, relation of parts, fitness and form, are everything —not mere weight, size, or mass. The *quantum* cannot explain the *qualis*. In chemical combinations, indeed, *added quantities* produce *new substances*, but the things added do not change their qualities, any more than the substance produced. So long as Sugar *is* sugar, it sweetens, more or less; so long as Alcohol is alcohol, it *tends* to burn, paralyse, or disturb. Every grain of gunpowder, in short, possesses the quality of explosiveness; and it would be quite as sensible to say that the tenth part of a *grain of powder* is innocent, and that the explosiveness only *begins* with the *whole* grain or entire ounce, as to say that the first and second glass of port wine is innocent, and the evil physiological action only *begins* with the third or fourth. Disguise the nonsense as men may, this is simply equivalent to affirming that sugar in little is not sugar,—that alcohol in little is not alcohol,—and that powder in grain is not powder,—since it is only the fixed identity of qualities that constitutes their sameness, and makes them at once what they *are*, and what they are *not*. Mass accounts for nothing but weight, and number is only a mental relation which *creates* neither quality nor substance.

Even while this sheet is passing through the press, the answer to our practical question is given by one whose authority is partly on the other side—Dr W. ROBERTS, Professor of Medicine in the Victoria University, Manchester. He says :—"Every one who has had a large experience in examining applicants for Life Insurance knows that, in spite of every care, persons are smuggled in as temperate who

are taking dangerous quantities of alcohol. Moreover, *considerable numbers* of those who are strictly temperate when admitted, lapse afterwards, in the course of years, into habits of real, though not perhaps of notorious, intemperance.' What Mr Lewes said of alcohol in 1855, that it is a 'tricksy spirit,'—what Solomon said above twenty-three centuries ago, that 'wine is a mocker,'—is thus illustrated by the observation of our living physicians. The drinks actually consumed by mankind are, therefore, connected by *physiological and psychological law* alike with the development of individual craving and of social inebriety. Since moderation in the use of an agent cannot destroy its quality and its tendency,—since that tendency, as a matter of fact, is *not* overcome in the case of 'considerable numbers,'—it is but the plain and strict expression of this attested fact to say, that moderation in narcotics is both the seed and seed-plot out of which grows up all the actual intemperance which blights the world. This, *the necessary and universal sequence* of the use of drink, tobacco, or opium, is in fact the essential mark of narcotics. The appetite for them 'grows with what it feeds on': and therefore intemperance increases. The demand which has been made to 'compare' strictly moderate men *only* with teetotalers, is an impossible one—because the former are a mutable quantity, the latter a fixed one. *B*, the strict moderationist, is only so for the first three or four years, when he passes into the ranks of *C*, 'the *really* intemperate,' and finally into those of *D*, the 'notoriously' so. How, then, *can* you compare *A*, the abstainer, who is always the same, with *B*, *C*, or *D*, who are always changing their position and relations? But, we may ask, If among men of such superior prudence and

morality (as Life insurers commonly are) such 'considerable numbers' gradually sink into *real* intemperance, what must be the *proportion*, in the community at large, and what, above all, amongst the ignorant, the neglected, and the depraved?

Since the growth of appetite actually follows, in the case of 'considerable numbers,' the *use* of every narcotic, because narcotics *tend* to excess in all persons: and as that is an inseparable attribute of the use, so equally has the tendency of *Example* by the Respectable, the effect of multiplying the use and increasing the number of the users. One is as much a psychological development or law, as the other is a physical; and we must take account of both in estimating our individual and social responsibility. No man has better put the morality of example before the world than JOHN WOOLMAN—the holy 'Friend' who woke up the consciences of Christians in America to the guilt of Slaveholding, at a time when, like drinking now, it was supposed to be sanctioned as much by Scripture as it was by social opinion. In his *Journal* of the year 1755, he observes:—"Where those whose lives are for the most part regular, and whose examples have a strong-influence on the minds of others, *adhere to some customs which powerfully draw to the use of more strong-liquor than pure wisdom allows*, it hinders the spreading of the spirit of meekness, *and strengthens the hands of the more excessive drinkers.* . . . If those who profess to be disciples of Christ, and are looked upon as leaders of the people, have that mind in them which was also in Christ, and so stand separate from every wrong way, *it is a means of help to the weaker.*" John Woolman had a clear perception of the cardinal truths of the Temperance

reformation, and especially of the fact of the connexion between a physically disturbed brain and a disturbed mind, for he thus expresses himself in the same chapter (iii).* "By not attending to that use of things which is *consistent with universal righteousness*, there is an increase of labour which extends beyond what our Heavenly Father intends for us: and there is *even among such as are not drunkards*, A CRAVING FOR LIQUORS TO REVIVE THE SPIRITS." Just one hundred and fifteen years afterwards, Professor Parkes, of the Netley Hospital, demonstrates the great physiological truth that alcohol, by increasing the heart-beat, wastes the vital forces. (See our chapter on the Pathology of Alcohol, page 110.)

Finally, the author will not discuss mere *names*. He does not care in the least, whether the Social and Moral reformation called 'TEMPERANCE' shall be known by that name, or by the more appropriate title of 'NEEPHALISM.' It is the *truth*, and its practice, he is concerned about. The doctrine being conceded, all further debate must be merely word-quibbling, or an exercise in dialectic founded upon historical philology. Such a logical discipline is indeed very much needed by a large part of the superficially educated world, and the author has therefore given considerable space to the discussion in his opening chapter. Temperance is, of course, the name for the right government of *all* the appetites and passions, but the special point of the Reformation is, *What is right* in reference to the use of those intoxicating drinks which, in defiling

* In the Appendix to his *Journal* will be found an admirable essay on Land Reform, which every true moral and social Reformer, whatever *party* he belongs to, would be the better for reading.

and demoralizing our people, inflict upon our country mischiefs more varied and miseries more intense than all other agencies of evil united? The vice of drinking is a *central* one, whose corruptions spread through all the ramifications of life and society, and it is this fact which gives to the negative virtue of Abstinence all its import. It is the foundation and keystone of that broader and more positive Temperance, which a forgotten writer (Dr Hamilton) has finely painted upon the canvas of St Augustine,—"Love taking exercise, enduring hardness; love seeking to become healthful and athletic, striving for the mastery in all things, and bringing the body under,—love in its superiority to sensual delights, practising self-denial and self-control,—love alert and timeously astir, not hectic sentiment,—love with girt loins, and dusty feet, and blistered hands,—love, it may be, with the empty scrip but the glowing cheek; love subsisting on pulse and water, yet grown so healthful and hardy, that it beareth all things, believeth all things, hopeth all things, *endureth* all things."

While eulogizing the virtue of entire Temperance, let us not, in an ignorant re-action against mediæval penance and fasting, be unjust and blind to the merits of an enlightened Asceticism—not the asceticism of Sourness but of Science, grounded upon a knowledge of the physiology and psychology of our complex nature. Plutarch, in his '*Moralia*,' seventeen centuries ago, lucidly defined the position which, in the following pages, the reader will find to be sustained equally by the logic of words and the logic of facts. "Temperance is a certain restraint of desires—a restraint of such as are foreign, and a control which moderates those which are *natural* and necessary."

A modern book, too valuable to be remembered in these flighty days, has an excellent definition which we commend to the superficial critics of the temperance reformation :— "*Moderation*, rightly exercised, is a quality which has its own advantages, and is undoubtedly entitled to a place among the virtues. It may be carried too far : it may damp the ardour of exertion in pursuits which are truly deserving of the highest zeal : but the genuine virtue consists in *that state of mind which is accordant with the dictates of the most enlightened reason.* As there are objects that even to the most enlightened reason must appear supremely important, so there is a *judicious* zeal, a *rational* enthusiasm, perfectly compatible with the spirit of true moderation." *

Since the first edition of this *Text-Book* appeared, great and gratifying advances have been made on the question it treats of, both in the world of science and of philosophical thought. In the latter, the most remarkable is the discussion, in all respects confirmatory of our views, contained in a work just issued from the pen of a profound thinker and a good man, the late lamented Professor of Moral Philosophy in the University of Oxford—T. H. Green. In his *Prolegomena to Ethics* he sustains the Grecian views of Plato, Socrates, and Aristotle, combating the unchristian conception of 'pleasure' as the end of life, and maintaining that *the 'good,' as the end determined by reason*, is not only quantitatively but *qualitatively* distinguished from the end determined by sensuous feeling.

At a meeting held on the 12th November, 1883, in the Sheldonian Theatre, Oxford, Dr Acland, C.B., the Professor

* 'Systematic Morality.' By W. Jevons. Vol. i. p. 268 (London, 1827).

of Medicine, in the chair, Dr W. B. CARPENTER, F.R.S., in a speech delivered at the request of the chief doctors connected with the University, made the following statement, which will enable any one to apply the definition of Plutarch to existing practices:—"No one who had ever studied the action of poisons, could hesitate in the assertion that Alcohol was a poison—it was *a substance so foreign to the constitution of the body, that the body tried to get rid of it as quickly as it could;* but if it was introduced in a larger amount than could be readily *eliminated* from the body, it had a specific influence upon the nervous centres. The first influence was to disorder their action. That they saw in the phenomenon of intoxication; but where there was habitual introduction of these substances into the blood, not only was the action perverted, but the *nutrition* of the nervous system was perverted. The nervous system was, of all the organs of the body, the part which most grew to the conditions under which it was constantly being worked and nourished, and one of the most remarkable features of the perversion of nutrition *was the craving which was set up for the renewal of those stimulants.* With that they were all familiar. That craving overcame all other cravings—even hunger. When it took full possession of the system, so completely that it dominated the will, they were accustomed to call it insanity; but in a milder form they knew when a man or woman became the subject of a strong craving, *it came to be the leading motive in his or her conduct.* That showed the mental condition. It showed—for he was speaking of the mind and the body, inextricably connected—*mental perversion showed the physical perversion which was the basis of it.*"

What was a familiar truth to the Christian Fathers of the first five centuries will some day become a commonplace to all—namely, that *physiological integrity* is an essential condition of moral and religious progress. Already this forgotten truth is dawning upon the Church, as witness the following from a distinguished preacher:—"We darken our personal sunlight by ill-health. I do not speak of the ill-health we cannot avoid, those swift attacks which break on us from without, in a fever, or an hereditary disease, though even of those we may lessen the chances by wisdom—but of *that general lowness of tone*, that daily ill-at-ease, that nervous irritability and exhaustion which are so frequent in a society which lives unnaturally, and stimulates and depresses itself unnaturally. For our own sake, and for the sake of others whom we trouble and irritate, we are bound to obey the 'laws of nature,'—bound to find out *why* we are ill, and if we are ill, bound to cure ourselves if we can; *bound to live carefully, temperately,* [*and godly*]. And for the most part we CAN keep well; and most of this general ill-health is cured by very simple means: by fresh air, enough exercise, and strict temperance in food and drink. 'This is not morality,' you say, 'but medicine.' It *is* morality. It is as much a medicine for the mind as for the body. It means watchful self-conquest; conquest of sloth, conquest of appetite, conquest of indulgence; and that done daily. It is more—it is spiritual. For its motive should be, that you may keep yourself in the sunlight in which good work is done for God and man, *in which you are able to use all your powers well;* in which you will yourself, rejoicing in good health, give and spread joy, gaiety, and good-temper around you."

THE SCIENCE

TEMPERANCE TEXT-BOOK.

I.

THE MORALS OF TEMPERANCE.

§ 1. "IT is an ancient artifice of fraud," says Dean South, "to prepossess the mind by representing bad things under a good name." Hence the need of revising our definitions and verifying them by comparison with facts.—TEMPERANCE is a word in everybody's mouth; yet what particular actions it commands, or forbids, and why, are points generally unsettled. This is rather owing to the fact that people are not taught to think in a precise method, than to anything hard or obscure in the nature of the subject itself. A very simple process of reasoning will bring every candid and competent mind to the true use of words upon this topic. All persons are agreed that Temperance is at least a moral-virtue, and consequently concerns a course of life dictated by the intellectual and moral powers. It is the 'governing' of passion and appetite; and therefore can never be the mere 'gratification' of them. What virtue is there in doing what one merely *likes* to do, and what is pleasant or natural to do? Brute instincts and fleshly appetites can never rise to the dignity of virtues; for

'virtue' is, etymologically and really, only and always, moral-strength shown in restraining or conquering animal impulse. A boy, for example, who sucks his barley sugar, is no more virtuous or temperate than a dog which gnaws his bone; but a child that, at the request of his parent or superior, cheerfully gives up some proffered sweets, because he is told and believes that they are injurious, really displays a virtuous and temperate disposition. In other words, the 'mind' rules, and not the 'appetite.' Hence Temperance, the virtue, always *begins* with self-denial, and is not possible without it. Virtue, being 'strength,' has no meaning save in relation to something *opposed*—it is the 'resistance' to illicit pleasure. A plain inference is, that a person who cannot, at the call of reason and duty, give up his little-drops, is as truly intemperate as the man who imbibes a larger quantity. It is not the undesired effects which *make* the vice—these are really the *punishment* and *signs* of it—it is the motive and the relations between the mental powers which determine the moral character of the drinker. But the *action* (or even state) may exist where there is no self-denial. A person might be so well-instructed, and so obedient and faithful to the best instincts of nature, as to have no unruly desire seeking to transgress the higher law; and the state or practice of such individual will be 'temperate,' because it expresses *obedience* to Divine law; that is, manifests a just relation between animal desire and the moral will. The one is servile, the other magisterial. Thus, while the motive will be a criterion as to the true character of a man, it is 'the fitness of things' which must be the sole test of the rightness of the action.

But let us see what are the current Objections. The *Daily News* (Nov. 24, 1870) commences a pretentious leader by an attack on Teetotal logic as the 'fallacy of extremes.'

"There are controversies that can never come to an end for want of what may be called a 'middle-term.' When one disputant insists that

everything is *relative*, and the other that everything right is *absolutely* right, how can the dispute be settled? So it is between the *fanatics* of abstinence (who declare that death is in the very smallest pot), and the moderate drinkers who only drink when they are thirsty, or tired. All drinkers are not vicious drinkers, and to those who do not confound use with abuse, and moderation with excess, abstinence seems to bear the same relation to sobriety as fanaticism to religion." *

The Temperance-argument is the very contrary to any 'fallacy of extremes.' It ridicules and rejects the shallow conceptions expressed by this *end* of a stick, and the other *end* of a stick. It is founded upon the actual *relations of things*, and these, primarily, are never settled by such phrases as pole and anti-pole, big or little, much or minim, nor even by equators, middles, or mediums! Men who talk and write after that fashion may be set down as mere parrots, who have no ideas behind their sounds and signs. They are literary patchers, not true tailors even, as absurd in their way as the Herr Schneider who should persist in refusing to *cut* and *shape* his cloth to the form of the body he had to *fit*, and make a '*middle*-sized' coat, vest, and pantaloons, as the right thing alike for a big, a small, and a

* A mingled yarn of false statement and fallacious reasoning, of which a decent paper ought to be ashamed. The *News*, with all its cant of liberality, refused insertion to our polite correction of its mis-statements, and so we must now expose its sophisms to lasting contempt. Temperance men no more affirm that 'death is in the smallest *pot*,' than the *Daily News* asserts that 'death' is in the smallest *potion*. They say just the same of alcohol as others say of opium, or strychnine, or arsenic—that such substances are *in nature* poisonous—harmful,—no more, no less. And they never assert that any of them, or anything else, is good or bad 'absolutely'—but always *in relation* to that for which it is bad or good. The phrase, evil *per se*, is as foolish as would be the phrase, a son *per se* without a father, an effect *per se* without a correlative cause, or a pronoun *per se* without a related noun! The *News* invents the premisses it tries to refute—and fails even then to prove anything. It says of sports—"Nothing can be better for boys and young men." Prove this of *alcohol;* and we surrender the ground. Prove that alcohol *does* 'fortify' (*i.e.* strengthen) the body, like exercise, and we yield the field to the drinker of drams, whether distilled or diluted. Experience and experiment have *demonstrated* that alcohol always increases the internal-work of heart-pumping, without ever *providing* a particle of the energy so expended.

medium man! We remit the *News* to the study of his Plato: where Socratês refers moderation to a *standard*—not of quantity but of quality—not of weight, but of *fitness*. If alcohol quenches thirst innocently, and recruits strength when one is tired, then it is '*fitted*' and '*related*' to the *right end* of food, whereby its use is vindicated. Barren generalities and empty assumptions, however, do not carry us a single step towards the settlement of the problem.

The late Mr Hain Friswell has this argument:—

"When the Temperance Society first formed itself, it took a wrong name. It was afraid to call itself a Sober-Society; but that is what it meant. It talked about Temperance: but as that word applies as much to eating as to drinking, to bad language, dress, hot temper, and a dozen other things, our reformers had to spoil a word by restricting it to one sense. What we want is, to see the whole of the sense restored. We do not want people *only* temperate, but as the catechism teaches us, sober, temperate, and chaste. . . . The Teetotalers in their endeavours to reform the world, needed a considerable amount of moral courage, nay more, of enthusiasm; and they possessed both in an extraordinary degree. . . . It would be very much better if, by any means, we could compass a general temperance,—that temperance in *all* things which has been laid before us as the perfection of life."*

On a web so mixed of sense and nescience, of good design and bad dialetic, of philosophic feeling and foolish philosophy, it is an ungracious task to be critical. But surely people endowed with such 'moral courage' and 'enthusiasm' could hardly be 'afraid' of calling their association by its proper name; and a policy which makes a movement 'very popular,' and compels to 'activity of thought,' can scarcely be intelligently denominated a 'mistake.' May it not be fairly suspected, indeed, that the people who have overcome such enormous difficulties, overthrown such multiplied and mischievous fashions, and achieved a position so prominent and commanding, knew better what they meant, and how to designate their doctrine

* *About in the World.* 'On Pump Handles,' p. 64. John plainly does not know how to work these 'Handles.'

and design, than fifth-rate critics? True, the word 'Temperance' *is* of wider comprehension than the term 'Abstinence.' If the express purpose of the reformers was, not to remould humanity in many aspects, but simply *to stop drunkenness by stopping drinking*—then the word 'TEE-TOTAL' was an unambiguous symbol of their association. And the thing needed was a distinctive and therefore specific designation, which 'sober' and 'temperance' are not, since those terms apply equally to body, feeling, and judgment. On the other hand, we do not see on what grounds the general term 'Temperance' may not be claimed as the name of their society, if they choose; just as we may say, at will, 'my servant *John*,' or 'my servant *man*.' The major includes the minor, and neither is exclusive of the other.* No generic term can be 'spoiled' by its application to one of the specific things it is expressly made to cover. May not 'chop' be rightly used to denote the specific thing we are enjoying, without spoiling the meaning of 'mutton'?—or involving us in the absurd conclusion that chop is one thing, and mutton another? At the same time, we shall prefer to have a name exactly ex-

* The real reason why the word 'Temperance' was first used is to be found in the fact that the first Societies did not abstain from *all* intoxicating drinks. It was only through the lessons of experience and the evolution of science that the members learned that alcohol was *the same thing*, with the same evil properties in relation to the body, whether found in spirits, wines, beers, or cider. But the objection is insincere, since no one ever complains that the word 'temperate' is misapplied when it has reference to speech. Take, for example, the debate in the House of Commons (April 5, 1882), in which Sir Stafford Northcote says of another member—"He simply called attention, in a most *temperate* and telling manner, to the real state of things in Ireland." Now, any one, with a gleam of intelligence, will see that the word 'temperate' so used, involves the idea of abstinence as truly as the idea of use, and indeed that the emphasis and virtue of the speech eulogized consisted in *its having avoided exaggeration;* thus the term here means—(1) The *use* of words exactly *fitting* the facts: (2) *Abstaining* from words which do *not fit* the facts. The 'negative' is as much implied as the positive. The objector illustrates Hobbes's dictum: "Words are the counters of wise-men, but the money of fools" (*Works*, iii. 25).

pressive of our special doctrine: say one formed from the New Testament word for *no-drinking* = NEEPHALISM. Or why not call ourselves, *Non-inebriates?* After all, why should not Teetotalism be as classical as Toryism?

Concerning the word 'Teetotal,' there has been much divergent opinion. Says Mr Friswell, in his 'About in the World':—

"The great Temperance movement, which was one in the right direction, for we English were desperately hard drinkers, has not only taken away our reproach, but it has added another word to the English language. From it arose, we believe, that extra branch of temperance men—those who would go to *extremes*—the teetotalers. Their name is the word of which we speak, and possibly no one knows its derivation. We have heard it explained in various ways. Webster calls it a cant word, formed in England from the first two letters of 'temperance' and 'total,' signifying thereby total-temperance! But the stupid, vulgar, odious word is there; no one can understand it, every scholar must abhor it. It is curious a set of common enthusiasts should have chosen so meaningless, and yet so appropriate, a name; but it is characteristic of the English that they did so. Binding themselves under that one foolish but *very distinctive appellation*, they went to work with a will, and achieved wonders. Probably few modern movements ever did so much real good as teetotalism."

It is quite true that the word 'Teetotal' was certainly *applied* by 'Dicky Turner'—one of the first reformed drunkards of Preston—to express total-abstinence—that is, abstinence complete and without compromise; but it is itself a 'vulgar error' to suppose that he either invented the word, or stuttered it forth. The term has been in common use in Ireland and in Lancashire these hundred years, and was familiar to the writer when a lad at school in that county above fifty years back, *i.e.* in 1828–9. Workmen would say, of one who had got dismissed from his employment, "He's got *teetotal* bag."* It can be

* MANCHESTER LITERARY CLUB. — The weekly meeting of the Literary Club was held on Monday evening (Feb. 19, 1883) at the Grosvenor Hotel. Mr George Milner presided. Mr C. Hardwick then made a communication on the origin of the word 'teetotal,'

found in literature long prior to the Preston movement, in application to various things. Banim, the Irish novelist, employs it; De Quincey also, a master of English, who probably acquired it in Lancashire, amidst the idioms of which county he spent his early years. Richard Turner used the word because it had an *established* meaning.* It was one of those designations to which children and uneducated persons are apt to give spontaneous expression; and because it fell in with popular usage and feeling, Mr Joseph Livesey, wisely or unwisely, adopted it as the name of the new society.

§ 2. How is 'dietetic fitness' to be ascertained? Just as all other truth is to be known,—by seeking for it, through

which he said was *first applied* by Dicky Turner to the abstainers from intoxicants, but *which he* (Mr H.) *remembered to have heard before that time*, though rarely, as *an augmentative or strong form of the word 'total.'* Mr Axon said that Dr Lees had also stated that the word was an old dialect word in use before the time of Dicky Turner. The word was not in the *Lancashire Glossary*, and ought to be. Mr Milner said that now they had had an authoritative statement, it might be included in the appendix.—*Manchester City News.*

* There is a *law* at the bottom of this reduplication, not a vulgarism. Pa-pa, da-da, ab-ba, ma-ma, are childish examples of *emphasis*, but they are not alone. The to-name and tee-name (nick-name) of Somerset and Buchan, are curious analogues of the *tee*total prefix. The old English for 'to bisect'—to tótwin, is even more to the purpose. The law is evidently a *doubling* of the sound, to express the strengthening, perfection, or completion of the idea. The English 'too-good' (two good) is thus analogous to the French 'très-bon' (very good). In the Greek we have many examples. Take one—'tup'—*tupto* (I beat) —*tè-tupteeka*. In the Turkish, the emphatic form for 'very' is got by reduplicating the *initial* sound of the word: as yem yash, 'very wet'; yem yeshil,' very green'; dum duz, 'very flat'; bam bayaz, 'quite white'; kip kirmizi, 'very red'; bam bosh, 'very empty.'—Professor Nordheimer, in his 'Critical Grammar of the Hebrew Language' (New York, 1845), thus expresses the fact:—

"The preterite, which, as it denotes an action completed, may be regarded as an *emphatic tense*, is often formed by means of a reduplication. Compare the preterites made by augmentation and reduplication in Sanscrit and Greek, and occasionally in Latin; and *sometimes in the latter by lengthening the radical vowel.* Either of these modes may be considered as a proper symbolical expression of emphasis. The Shemitish languages, moreover, symbolically express an intensive meaning of the verbal root by the reduplication of one of its constituent parts."—(Introduction, vol. ii. p. 9.)

the use of our perceptive and rational powers. He who seeks will find, provided he searches in the love of truth as the manifestation of the Divine will, and observes the known conditions of sound reasoning. Just as a man may, by carelessness and inattention, add up a column of figures wrongly, so by carelessness he may violate the laws of sound thinking, and form an 'opinion' instead of reaching a conclusion; but the fault rests with the man and not with the relations fixed by God, which show forth His wisdom and power.

A hundred years ago, no decent writers ever thought of excluding abstinence from one of the aspects of temperance. In proof, we will adduce just two witnesses:—

In '*Antiquity*, or the Wise Instructor,' edited by J. BROOKS (York: 1773), we find the following citations:—

"The parts of temperance are modesty, shamefacedness, *abstinence*, *continency*, sobriety."—*Plato*.

"Temperance compels men to follow reason."—*Socrates*.

Even the word SOBER has the inclusive meaning or application of abstinence. RICHARDSON'S great Dictionary (London: 1838) has:—

"SOBER, adj. Abstinent, or *abstaining* from anything intoxicating; Temperate, *well regulated*, serious."

The reference to a *rule* of reason dismisses the barren notion of mere quantity.

Our first duty is to ourselves—a wise self-preservation. "Men will praise thee," says David, "when thou doest *well unto thyself*" (Ps. xlix.). "I hate a wise man," says a Greek proverb, "who is not *wise unto himself*."

There are also *social* relations of Temperance, founded on the right use of food. Paley, in his 'Moral Philosophy,' enforces the duty; and Cowper, the Christian poet, who saw clearly the evils of drinking and of 'the styes that law hath licensed,' asks and answers the pertinent question—

> Will Providence o'erlook *the wasted good?*
> Temperance were no virtue if He could.

The practical conclusion is, that while Temperance, the 'virtue,' is always a state of mind *opposed* to sensual gratification, and therefore grounded upon the recognition of the higher law,—Temperance, the 'right action,' is *obedience* to the intellectual perception of those relations of fitness among things which we call the adaptation of right means to good ends. He, consequently, who drinks or smokes merely because he 'likes' it, or because it is pleasant or fashionable, acts upon a motive *beneath morality*, and therefore below Temperance; and he who drinks or smokes without any perception or proof of the usefulness of drinking or smoking, acts upon an impulse that contains no element of intellectual law or ethical truth. What is neither good in *motive*, sound in *sense*, nor useful in *result*, can have no title to the sacred name of Temperance. In confirmation, we add the definitions and descriptions of Temperance given by a succession of great and philosophical teachers, who, though separated by whole centuries of time from each other, reach a uniform conclusion :—

§ 3. SOCRATÊS (B.C. 430) is reported as saying—"He who knows what is good and chooses it, who knows what is bad and avoids it, is learned and temperate." In the *Charmides* of Plato, Critias says, "When a man *harms* himself, he does not do his own business,"—*i.e.* really or wisely. "The doing of *good* things is temperance," he adds. Socratês answers, "perhaps it is,"—but argues that it should be action done with *perception* or knowledge. The notion of Temperance as 'Moderation' is empty; for Plato taught that the solution must be referred to the 'Measuring Intelligence,' which perceives both the *want* and the fitted *supply*. In the 'Erastæ,' it is expressly concluded, that "in regard to exercise and food, it is not the *great* quantity or the *small* quantity which is good for the body, but the *measured* quantity;—not the much, nor the little, but the *right* amount." In short,—quantity and quality alike are referable to *want*, and all to perception.

§ 4. ARISTOTELES, perhaps the most scientific mind of antiquity, says (B.C. 350):—

"TEMPERANCE is a mean state on the subject of pleasures,—bodily pleasures,—and not all even of these. . . In the *natural* desires few err, and only on one side,—that of *excess*, *the object of our natural desire being the satisfaction of our wants.* But in the case of peculiar [or artificial] pleasures, MANY people err, and frequently; for people who are called 'lovers' of such pleasures are so called, either from being pleased with *improper objects*, or in an improper degree or manner, or at an improper time. A man is called intemperate for feeling more pain than he ought, at not obtaining pleasant things [as wine]; but the temperate man is called so from *not feeling* pain at the absence of, or the *abstaining* from, *pleasure.* Now the intemperate man desires all things pleasant, and *is led by his mere desire to choose these things.* But the temperate man is *in the mean* on these matters, for he is not pleased, but rather annoyed, at the principal pleasures of the intemperate man; nor is he pleased with any *improper objects*, or pained at their absence; nor does he feel desire when he ought not, or in any case improperly. But he feels moderate and *proper desire for all those pleasant things* WHICH CONDUCE TO HEALTH." *

§ 5. CICERO (B.C. 50) has been cited by the Rev. Dr Howard Crosby, of New York, as holding a view adverse to the contention that 'Abstinence' is a part of the comprehension of 'Temperance.' He quotes from 'De Finibus' two passages, on which he makes a singularly blundering comment:—

"Temperance is that *moderating* of desires which consists in *obeying reason.* . . It is Temperance which warns us to follow reason, in the seeking or *avoiding* of things." (*De Fin.*) What a fearful prostitution and base use of a noble word is seen in the popular use of the word 'temperance' to-day!

What baseness can there be in 'obeying reason' and 'avoiding' injurious things? When appetite and fashion say 'drink,' and reason and science say 'abstain,' to call the gratification of the appetite by the sacred name of 'Temperance,' is the real 'prostitution' of the word. Had

* Nicomachean Ethics, lib. i. See article 'Golden Mean,' in *Reply to Clerical World*, p. 112.

this shallow critic read and understood more of Cicero, he would have abstained from his impudent censure. The *ratio* or reason of which the Roman moralist speaks, is, in its primary sense, a 'reckoning' or 'account'; just as with us, to 'account for a thing,' is to give the reason for it. Compare what we know of alcohol (gin or brandy, if you will) from experience and science, and whose 'reckoning' is the truer—the tippler's or the teetotaler's?

Turning to the 'Tusculam Disputations' (cap. xiii.), we find Cicero comparing health of body and mind, thus:—

"As the *tempering* of the body, when its parts are in harmony with one another is called health (or *wholeness*), so is it called health (or *soundness*) of mind when its judgments are in harmony [with fact and themselves]—and that is *virtue* of the mind. This some style TEMPERANCE itself —others virtue—obeying the precepts of Temperance and following it."

Three chapters further on Cicero describes obedience to 'cupidity' or passional desires, as a "certain *impotence* of the soul, greatly *differing from* Temperance and Moderation." That 'abstinence' and 'continence' were *inclusive* applications of Cicero's temperance is made clear in the 16th chapter. After dwelling on this 'impotence' or want of self-control, he adds:—

"And from this may be seen, what kind of a man he is, whom in one sense we call 'moderate'—in another modest and temperate—in another, consistent and *continent.*" The root idea of Temperance with Cicero is, the perfect co-ordination of all the parts—the mind desiring, and the will doing, what the reason dictates as the law of truth. How can such ideas sanction the use of the 'tricksy spirit' of wine, or brutalizing brandy?

Even this is not all that Cicero says. He explicitly condemns the Peripatetic fallacy which Dr Crosby has revived. After defining the 'wise man,' he says:—"*Some* disturbance there must be, only there must needs be a

LIMIT (*modus*) not to be transgressed. But can there be a *modus* when it is a question of FAULT (*vitium*)?—or can it be other than a fault not to obey reason?" (Cap. xvii.) So, in his 'De Officiis' (i. 36), speaking of 'appetite' having to do with action as opposed to thought, he says that its business is to 'obey reason.'* This is the only logical and ethical basis of the Temperance movement.

§ 6. The ancient Fathers of the Church, and the great Schoolmen and Logicians of the middle ages agree with the Academy: only the shallower intellects of our time dissent.

CLEMENT, of Alexandria (A.D. 180), says:—"I admire those who have chosen an austere life, and desire no other beverage than water, the medicine of a wise temperance, avoiding wine as they would fire" (Paedagogue, b. ii.).

St AUGUSTINE, Bishop of Hippo (A.D. 400), has given many admirable descriptions of both 'prudence' and 'temperance.' We give a few, from his 'Morals of the Church':—

"Temperance is love keeping itself entire and incorrupt for God. The office of Temperance is in *restraining* and quieting the passions that make us pant for those things which turn us away from the happy life." [What does this more than alcohol, tobacco, and opium?]

"Prudence discerns between what *is* to be desired and what to be *shunned*. Our Lord says—'Watch!' No passage can be cited that more expressly condemns mental somnolence, which makes us insensible to destruction advancing on us, step by step. Many things

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* Dr Crosby plainly knows Tullius Cicero only at second hand—if he be honest: for in the very opening of his book addressed to his son, Cicero declares that nobody can be 'temperate' who maintains *pleasure* to be the end of action. Dr Crosby is in the same boat with the ignoble Free-thinker who, in the middle of the last century, brought down an exposure from the great Dr Bentley as follows:—"This inauspicious gleaner, this new revisor forsooth of Cicero, will needs wrest this very passage to a commendation of Epicurus's and his own rules of morality. Pray observe, how gingerly he translates 'temperans'—*moderate* in the enjoyment of pleasure! Whereas *temperance*, according to Tully, *consists in the neglecting and despising of pleasure.*"—Remarks upon a late Discourse on Freethinking. (Cambridge, 1743. Eighth Ed. p. 171.)

require more than mere good intention, and can be done only through a high degree of thoughtfulness and prudence." *

"It is clear for what end we *should* ABSTAIN from flesh and wine: (1) to check indulgence, mostly practised in this kind of food, and *in this sort of drink* goes the length of intoxication: (2) to protect weakness: and (3), what is most praiseworthy, from love, so as not to offend those more feeble than ourselves who *do* abstain."

§ 7. St THOMAS, of AQUIN (A.D. 1260), the greatest logician and theologian of many centuries, argues with admirable conclusiveness the whole ethics of the question, and reaches a conclusion in accord with our own:—"Abstinence, therefore, is a *special part* of Temperance" (Quest. 167), namely, that which has respect to unfit things and illicit actions, or in other words, *discordant* relations of body or mind.

§ 8. The wisdom and prudence of abstinence is taught by LORD BACON (1600), in his essay 'Of Nature in Men.' He entertained no foolish idea that it implied *weakness* to conquer appetite or passion! "Where," says he, "nature is mighty, and therefore the victory hard, the degrees had need be, *first to stay and arrest nature in time;* then to go less in quantity; as if one should, in forbearing wine, come from drinking healths to a draught at a meal; and, lastly, to *discontinue altogether;* but if a man have the *fortitude* and *resolution* to enfranchise himself at once, THAT IS THE BEST.

> 'Optimus ille animi vindex, lædentia pectus,
> Vincula qui rupit, dedoluitque semel.' †

"Neither is the ancient rule amiss, to bend nature as a wand, to a contrary extreme, whereby to set it right; understanding it where the contrary extreme is no vice" (or wrong).

* Elsewhere he says: "Rarò vidi continentum, quem non vidi abstinentum": You shall rarely see a man continent, who is not seen to be abstinent.

† *Ovid. R. Amor*, 293. "He is the best Assertor of the Soul, who bursts the bonds that gall his breast, and suffers, *all at once.*"

§ 9. Professor PETER GASSENDI (1630), whom Gibbon calls "the most philosophic among the learned, and the most learned among the philosophic," makes no foolish attempt to subordinate virtue to the notion of mere 'quantity,' and to annul the essential conception of 'quality.' It would not indeed be so absurd to overlook the question of *time*, to eat when one is not hungry or drink when one is not thirsty, as to imbibe that which is unwholesome, and call the practice 'temperance'! In ch. vi., on 'Happiness' (Mons. Bernier's Translation), after laying down the principle that 'Moderation is a preservative,' he says:—"It is a great piece of wisdom to take heed, *how* and *what* we swallow for the sake of a little short-lived pleasure, the causes of so many diseases, so cruel and tedious, which weaken the body, and might easily be prevented merely by abstinence."

In his second Book, on 'Virtue,' he rescues the assertion of Aristoteles from the stupid fallacy that his 'medium' is one of 'quantity'—one into which the Stoics fell.

"Aristotle expressly lays down that in the figures 2, 3, 4, 5, 6, 7, 8, 9, 10, the cypher 6 is the *medium*, because the fifth, from both ends: but in respect of ourselves the 'medium' is but a figure of speech—namely, *that which is neither above nor beneath* WHAT IS FITTING—the *medium rationis*, and which belongs only to the wise man to understand. It cannot be the same for all men even in good food, because the same quantity is not convenient to all alike. The rule of the Athletes does not prescribe two pounds to all, for it is too little for a Milo and too much for a Tyro. The middle of Aristotle is what is most *proper* [which depends on the correlated '*proper*ties']. He maintains, also, that there are certain actions [as theft and adultery] which do not admit of any *medium*, because there is always an *unfitness* in the very act; and adds, 'Temperance seems to incline more to a *privation* from pleasure.'

"Virtue is that state of mind which determines action by a constant operation of reason, so that what a person does, proceeds from a strong and constant *resolution* of doing *what is best*, grounded upon deliberation."

This aptly describes a Temperance pledge, but has no

aspect of mental or moral weakness about it. Under the head of 'Sobriety,' Gassendi adopts the definition of Aristoteles (§ 4), "moderation in pleasures which are *normal* and *tend to health* of body and mind," adding :—

"The temperate man is not he who *abstains* from all pleasures, but from *such* as are *contrary* to *nature and prejudice health*, but he scruples not to enjoy moderately the pleasures that have none of these inconveniences attending, for in such there is nothing but what suits humanity, and is congruous with nature."

He notes under 'Chastity,' that the brutes teach, at seasons, *abstinence* to man, so that abstinence is not opposition to temperance; and in the following sentences he approves of abstinence from strong drink as an institute of nature. Wine, he argues, tempts—water satisfies.

"We must take care that we transgress not, either *in the quantity*, which often happens when we eat and drink without hunger and thirst, or *in the quality*, which is when we take anything that is, naturally or by art, too hot or cold, and becomes a kind of poison. . . In wine there is something artificial, from whence proceeds that which *provokes* appetite. . . In drink, the most natural is water; and that we drink with great pleasure, but as soon as thirst is allayed, we have no more inclination to it."

The rigid reasoner, HOBBES (A.D. 1640) thus defines :—

"TEMPERANCE: the habit by which we *abstain* from all things that tend to our destruction; Intemperance, the contrary vice. As for the common opinion, that virtue consisteth in mediocrity and vice in extremes, I see no ground for it. Courage may be virtue when the daring is *extreme, if the cause be good*, and *extreme* fear no vice when the danger is extreme. To give a man *more than is due* is no injustice, though it be to give him less. In gifts, it is not the *sum* that maketh liberality, but the REASON; *and so in all other virtues and vices*." *

§ 10. SPINOZA, the philosopher of Amsterdam (1660), in his Ethics lays down the indisputable principle, that the supreme guide of life is *Right-knowing*. This, he says,

* *Works:* De Corpore Politico : iv. p. 110.

includes *all* that is desirable for man, *i.e.* the Truth. This *is* virtue, or if you will, leads necessarily to 'virtue.' * He means, of course, if one *really* knows or believes as a child does when it has once burnt its fingers, so that no one *could persuade* it to put its fingers into the flame again. He adds: Save for men *yielding* to passions and appetites, harmony of concurrent or social life would be spontaneous, since, following reason, all would move on the same lines to a common good. As disturbance, however, does arise, means of conquering it have to be sought, which is the decree of the State. Here he reaches the same conclusion as Aristoteles. Spinoza holds that we not only *do*, but *must* act, according as we understand or *mis*understand the facts. "Insight," says he, "can be purchased by no outer good, and blessedness is *identical* with such virtue. Knowledge steps forth into conflict with the passions, and *clears the field of them.*" † He further defines 'virtue' as our 'power'—what we *can* do in intelligent conformity with the laws of our nature. It is 'knowledge' and it is 'freedom,' *i.e. unimpeded life out of the inner data of our being.* ‡

The pious and learned platonist, NORRIS (1701), says:—"All natural hunger is only after *proper* and convenient food. They are false appetites and vicious relishes, contracted by custom or proceeding from distemper, that carry men to unwholesome diet." ('Ideal World,' p. 439.)

§ 11. Dr SAMUEL JOHNSON (1759) says:—"Goodness is divided by divines into soberness, righteousness, and godliness. Sobriety, or Temperance, is nothing but the *forbearance of pleasure;* and if pleasure was not followed by pain, who would forbear it? We see every hour those in whom the desire of present *indulgence* overpowers all sense of past, and all foresight of future, misery" (*Idler*, No. 89).

* Ethics, iv. 26, 27, 32, 33, 34.

† Eth. v. 20, 42. The defect of this theory is the *non-provision of an agent* for inspiring this state of perfect knowledge; but with that point we are not concerned just now.

‡ Eth. iii. 58, 59.

A century passes away since this great intellect spoke thus, and fashion and folly in the Church reverses this description, and 'temperance' is defined by bishops, deans, and doctors as 'moderate indulgence in the pleasures of the bottle'!

§ 12. Not least among the great thinkers of the world, we may cite Father ROSMINI, the Italian philosopher (1830). He bases ethics, rightly, upon Truth—it is with him *applied* reason. And indeed, if we are not to follow our sense of fitness in all things, what *can* oblige us? Force has no relation to virtue, except that of opposition. We do not discuss the question of 'personal merit,' in drinking or abstaining; whether it is a *sin* to drink? We go deeper, and endeavour to ascertain whether there is any *good* in drinking? Rosmini applies to such cases the following rule: "If there be doubt respecting the existence of the positive law, and *the doubt cannot be resolved*, the law does not bind; and if there be doubt in what relates to *natural* law and to an evil inherent in action, *the risk of this evil must be avoided.*" This appears congruous with the New Testament teaching, that "where there is no law known," or knowable, "there is no transgression," while "what is not of faith is Sin." In other words, the duty of inquiry into the facts is the prime and supreme law of a reasonable being. There is a corollary drawn from this—namely, that an obligation to perform an *end*, involves an obligation to adopt the *means* and *aids* to that end, and to *avoid* hindrances. (*Philosophic System*, § 243.) For example, we must train our intellectual powers to discover truth, and keep our body, *especially our brain*, wholesome and unperverted, as the fitting instrument of the moral law.

§ 13. Professor WHEWELL, D.D., in his famous 'Elements of Morality' (1854), thus writes:—"The *love of drink* involves, not only a bodily appetite, but a complacency *in the mental condition to which certain liquors lead;* namely, the condition of ebriety; a condition in which the Reason loses

the power of directing our actions" (Vol. i. Art. 149). This leading or tendency is evidently one of degrees, the first being the *departure* from the normal state—the others cumulative degrees of the same kind. In Art. 532, the Professor cites 1 Thess. v. 5, and the passages in Peter, which enforce the doctrine of *neephalism* (or true sobriety).

§ 14. Dr LINDSAY ALEXANDER (1858), in his article on 'Moral Philosophy' (*Ency. Britan.*), has a pertinent sentence or two bearing on Temperance. He adopts the 'Conditions of Virtue' laid down by Aristoteles, who says, "It is not enough that an action be done *anyhow*, or even wisely done; the agent must also be affected in a certain way. First, he must have *knowledge;* second, choose for the thing's sake; third, act inflexibly." He might have added, *and instantly*, so as to leave no gulf of time between conviction and duty—which is one of our prevailing sins. Millions of people calling themselves 'good' postpone doing the right thing, on the fallacious plea that '*it is not ripe*'! The fact is, *they* are not morally ripe, but the fitness always is—*i.e.* the law of action. Under duties which man owes to himself, Dr Alexander says:—"*As a being having life*, man owes it to himself* to preserve and nourish the life he has received [and the lives he has begotten]. For this purpose he must supply himself with necessary food, clothing, and shelter; *he must avoid whatever would injure his health or shorten his life;* and he must use means when his health has been injuriously affected to have it restored. . . This duty forbids self-murder, and all those practices, such as intemperance, debauchery, or excessive labour, *which tend to shorten life.*" If, therefore, alcoholics increase mortality, their use is inconsistent with virtue.

§ 15. Says the philosopher HUME: "The prudence explained in Cicero's *Offices* is that sagacity which leads to the discovery of Truth, and preserves us from error and mistake.

* Also to his family and society: since he has created obligations to them.—L.

To *sustain*, and to *abstain*, that is, to be patient and continent, appeared to some of the ancients a summary comprehension of all morals."

THOMAS DE QUINCEY, the acute critic of our own day, gives an admirable definition from the physiological stand-point, namely, "Temperance is *adaptation* to the organism"; while the late Dr SAMUEL BROWN, of Edinburgh, has a no less luminous and comprehensive definition from the moral point of view:—"True and universal Temperance is the spirit of obedience to all the laws of man's manifold and miraculous nature."

In harmony with this is the collect in the Communion Service:—"Almighty Lord, vouchsafe to *direct, sanctify, and govern, both our hearts and bodies*, IN THE WAYS OF THY LAWS, and in the works of Thy commandments, that we may be preserved in body and soul."

§ 16. Modern notions about the 'merit' of Temperance as compared with abstinence, as well as concerning the alleged 'advantages' of temptation, are as inconsistent with other modern notions as with the views of the ancient Jewish Christians, and with common sense. People who are always telling us not to rely upon our own merits, contend for the super-excellency of that state of mind which gratifies the sense of pleasure without getting quite stupified! Now refined pleasures, if illicit and unnatural, are no better morally than the most brutal. What possible 'merit' can there be in taking a glass of wine because you *like* it? To do what you like is the easiest of all things; and how can what is easy be an illustration of moral strength?—*i.e.* of virtue. Virtue implies resistance and restraint, and is the opposite of carnal indulgence, in any and every degree. But what *reason* can there be in taking a glass of poison, diluted or not? And surely it is as virtuous to follow evidence as inclination? And again, how does the drinker's notion of temptation fit in with the teaching of the Bible? If Adam, in an incorrupt state, fell

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under temptation, how shall fallen men stand? If Noah and the priests, in extraordinary circumstances, lapsed into drunkenness, what can be expected from plying ordinary men, in ordinary circumstances, with perpetual temptation? If *only one* Divine Man always successfully resisted Temptation,—He who taught *us* to pray not to be 'carried' into temptation—on what ground, save that of self-conceit, can *we* plume ourselves upon the Devil finding *nothing* in us? And lastly, if the Millennium, as in the Apocalypse, is made dependent upon the *binding down* of Satan, upon what evidence do modern pretended believers in the Bible expect that it will, or can arrive, while social and legal temptation to drinking runs riot all around us?

§ 17. When men endeavour to make drinking to be a 'virtue,' we are reminded of Shakespere's warning:—

> '*Most* dangerous
> Is that temptation that doth goad us on
> To sin in loving virtue.'

> 'Sometimes we are Devils *to ourselves*,
> When we will tempt the frailty of our powers,
> Presuming on their changeful potency.'

Some persons have argued that temptation is the cause of virtue: whereas at best it is but the occasion of manifesting moral power. The objection, however, is altogether impertinent when applied to drinking, as the analysis of 'temptation' will evince. 'Temptation' covers two or three distinct elements or states. It sometimes means merely 'solicitation,' as when Jeremiah asked the Rechabites, 'Will you drink wine?' He told no lies to seduce them; he simply 'tested' them. But temptation may become a 'trial'—that is, a conflict—if there be within the soul of the tempted an ignorance or an appetite which *responds* to the external solicitation. In that case, virtue may triumph, or weakness may succumb. Now it is the peculiar property of the alcoholic or other narcotic *by use* to *create* the actual liking,

which develops first the longing, then the craving, and finally the passion of the drink-maniac. It thus, by a double action, induces failure in duty—first, by increasing the appetite on which the outer temptation operates, and second by decreasing the moral and intellectual counter-forces. If, therefore, it is our duty to resist temptation to evil, it must be wrong to weaken the resisting faculties while we strengthen the illicit propensities on which the tempter plays.*

§ 18. Hitherto we have discussed Temperance in relation to a normal and rational nature—a *will* simply governed by Intelligence, which, whether in relation to eating, drinking, or the regulation of the passions, does 'all for the glory of God,' which is the fitness or harmony of things. Such a state has nothing to do with what is now called *Asceticism* (the original meaning of which was rightful-'exercise'): and the reproaches cast upon it are purely the result of mental confusion. When Canon Kingsley, in '*Yeast*,' ch. viii., says: "Just as people who have not *strength* to be 'temperate' take refuge in 'teetotalism',"—he makes a false apposition altogether. For, first, moral strength *is* temperance itself (as the Greek word signifies), and what sense is there in such words 'As people have not strength to be strong'? But, second, 'strength' is an abstract term, comprehending many varying degrees, from the strength of a child to that of a man, and including the weakened and corrupted will of the drinker. It has relation always to the 'temptation': and the strength of one's *will* and one's *sense* may be as surely shown in *fleeing from* temptation, like Joseph, as in dallying with it in self-confidence, or in coldness of nature? Is there less moral strength shown in acting

* Says Dr Thomas Guthrie, of Edinburgh:—"Sometimes temptation is employed as another word for trials; at other times in a sense so different, that, instead of counting it, as the Apostle James says, all joy, we should dread nothing more than to fall into divers temptations. *Whatever is calculated to inflame our corruptions, and has a tendency from its own nature and ours, to seduce us into sin*, is temptation; and it is in this sense the word is used when it is said, 'Let no man say, I am tempted of God.'"

wisely than in acting foolishly? In different natures the same end may be realized by different means—but surely the gaining of the end is not something different from temperance? Is temperance less temperance because it is united to *prudence*, and takes account of the variations of nature and of feeling? Is a general less a conqueror because he takes one city by storm and another by investment? *

An analysis of the moral elements alleged to be strengthened by temptation in the exceptional cases of 'superior' virtue, will not justify the position of indifference to the fate and feebleness of others. The moral elements involved are two-fold: intellectual and emotional. First, a person declines to do a certain act, because, though pleasant at the moment, it is *unfitting* in its relations, and profitless in the long run. It is a violation of *law*, and therefore unphilosophical or foolish. All sin is so, if we could but see it: and when we actually decline pleasant sins, we *do* see it. This may be called the 'sense' of virtue. But, second, there is the 'sensibility' of virtue. We decline sin *as sin*, that is, because it is a 'wrong' thing: because it is a relation which is bad *objectively*, and the doing of which would put us in a bad relation *subjectively*. In other words,

* Curiously enough, we find in '*Yeast*,' ch. x., this sentence in reference to a *fasting* clergyman:—"Unable to control his thoughts, his *self-weakened will* punished him, by yielding him up an easy prey to his own fancies." Alcohol and other narcotics tend to produce illusions. Again, he says:—"If religion is merely the science of self-satisfaction, apply to the best substitute (after voluntary delusion)—alcohol and opium." Kingsley was aware of these facts, yet with a strange infatuation seems never to have applied them to the morals of Temperance! He admits the physical operation of narcotics on the brain to be *irresistible*. He knew that their use always tended to their increased use. He knew that this could only result from the pleasure they gave at first in a given quantity not being realizable permanently from the same quantity (without abstinent intervals). He knew that appetite grew stronger, and that will to resist grew weaker. He knew that use engendered liking, and liking grew to longing, and longing changed to craving, and craving ended in the resistless passion and slavery of the dipsomaniac—and yet he could not perceive the folly of the *use* from which all these sequences for ever flow!

our virtue is at once our purity, our humanity, and our piety; we *abstain* from transgressing law out of regard to the interests of ourself and mankind, and out of reverence to the Creator of the law. If these perceptions and feelings are strong, we shall act upon them *habitually*,—in other words, we shall crystallize our nature in the mould of virtue. Is not that better than spasmodic attempts at virtue, with the risk or reality of frequent failure? But the state of mind, and attitude of being, here described, is just as true of the Abstainer from *all* strong-drink, as of the Abstainer from (what *he* calls) 'excess.' Both resist temptation for essentially the same reasons—but the one happens to *know* more accurately where the evil commences, and the other certainly *feels more tempted to yield to the temptation* in consequence of having a *liking* for the drink.

The question now emerges, Whether a subjective *inclination* towards evil is either an element of virtue or a *cause* of it? If so, we ought not to shun temptation, but to seek it; not to put it 'behind us,' out of sight, but 'before' us, that it might come into play. Another consequence is, that if the Devil *finds nothing in us*, we are deficient in the element of virtue,—or in other words,—that the 'depraved nature' of the sons of Adam had one advantage at least over 'the Lord from Heaven'!! On this principle an absolutely chaste woman is not a virtuous woman. This objection is a Fallacy of Confusion, not only logically untenable, but one, in its tendency, calculated to lead to practical immorality, and which contains, by implication, conclusions little less than blasphemous.

> Resist *beginnings:* whatso'er is ill,
> Though it appear light and of little moment,
> Think of it thus—that what it is, augmented,
> Would run to strong and sharp extremities;
> Deem of it therefore as a serpent's egg,
> Which, hatched, would, as its kind, grow mischievous;
> Then crush it in the shell.
>
> SHAKESPERE.

§ 19. Canon Kingsley's objection, in fact, contains the dregs of that just exploded fallacy that 'temptation is the *cause* of virtue,' with the additional fallacy that *to tempt the appetite of a man whose will is weakened with narcotics*, is the supreme necessity of moral development!* It is only a supreme absurdity: otherwise the neglected, vice-surrounded, most frail and tempted classes, would be the most virtuous. The very teaching of '*Yeast*' is, that the *circumstances* of the poor must be made more suitable to their nature and to their weakness, ere a crop of virtue can be hoped for: that more light, more comfort, and more strength must be given them ere they can resist temptation, and realize a higher social ideal. This is always a question of proportion and of balance. In all the *natural* relations of life, there will be quite enough of temptations to go wrong in the best of us, and even in the best of circumstances, without any artificial multiplications of them, and without that special one which consists in weakening the will while creating a new lust by the use of tobacco, opium, or alcohol. If we are not right, why does Canon

* Yet Kingsley, in his sermon preached at Westminster Abbey, from Genesis iii. 4–6, said:—"Men had always been tempted to eat of some tree of knowledge of good and evil, that they might be even for an hour as gods—wise but with a form of wisdom—the wisdom of indifference; happy, but with the happiness which, when the excitement had passed, left despair, depression, shame, and fear everywhere; *and in all ages had fallen man been inventing stimulants and narcotics* —to supply that want of which Eve was so painfully aware. It was their nature to seek for something which would clear the dull brain, comfort the weary spirit; and indeed this had been, and perhaps would be for centuries to come, about *the most frightful failing of this poor, exceptional, agonised, diseased, and truly fallen being called man*, who was doubting for ever whether he be a god, or an ape, and in striving to become equal to the one, succeeded too often in falling lower than the other. In his struggles to escape from the vicissitudes of his lot, the Tempter came to him and said, 'Take this, and you shall be as a god, knowing good and evil'; *and if the temptation was too much for unfallen Adam, what must it be to Adam's long-fallen children?* In vain they reasoned with him that it was life not death for which he panted, and that, instead of being the tree of life, it was the tree of death. He preferred the voice of the tempter, 'Thou shalt not surely die,' and so he yielded."

Kingsley add: "Even if marriage was but one weed-field of temptations [are 'weeds' tempting?] it would be a greater deed to conquer its temptations than to flee from them in cowardly longings after ease and safety"? But, to complete the analogy with the use of narcotics, would he dare to recommend the creation of a new and *illicit* passion to help the victory?

The analysis of the elements of the problem thus brings us back to the old distinctions, and the old conclusions, of Aristoteles and of Cicero, as of every clear thinker since the world began:—The distinction between good and bad in things for special uses; between good and bad in states of mind and relations; in short, between *vitiam* and *virtue* —and so to the rule, that Temperance is not use alone, but *proper*-use, and for all unfit-use (for body, mind, or circumstance) Abstinence is the only temperance.

§ 20. Sir James Paget, and the Editor of the *Spectator*, with some other specious reasoners, have alleged against our views, that the *drinking* of intoxicating liquors is associated with the conquering and civilizing races of the world, while *abstinence* is connected with tribes remarkable for cruelty and conservatism! This broad statement, examined in detail, will be found to be grossly inaccurate, and involves besides, on the face of it, an immoral and incredible inference—namely, either that the vice of drunkenness by part of the world is no impediment to the mental progress of mankind, or that the measured use of narcotics, such as opium, tobacco, bang, and alcohol, is an influential factor in the *cause* of civilization! (See the full exposure of this Fallacy-of-Confusion, in our historical chapter.) Here, in regard to the partial facts in sight of the objector, we need only observe, that a Sepoy rebellion, by men who use opium if not alcohol, is in no respect worse than the Irish massacres of Cromwell's soldiers, or Monck's sack of Dundee, or William's bloody deed in Glencoe, or the French atrocities in Algiers, all of them

done by daily drinkers of intoxicants.* The fallacy consists in a double forgetfulness of facts in logic and in nature: first, that no comparison can hold good, unless all the main *circumstances* are alike; second, that physical and mental *tendencies* work out upon their own distinct lines of law. In other words, if any man allows himself to get excited the beast rules for the time, whether he be Turk or Christian, an Eastern Sepoy or a Puritan Saint. But, on the other hand, it is palpably absurd to argue that stimulants and narcotics do *not* excite the animal feelings, and do *not* depress the activity and energy of the moral emotions: historically absurd to affirm that the crimes and horrors of Parisian Petroleuse, and of Irish Assassins, were not aggravated by drink! Following his master, Prof. Reid, who wrote so long ago, Dugald Stewart has said—"Besides our natural appetites, we have acquired ones. Such are our appetites for tobacco, for opium, and for intoxicating drinks. In general, everything that stimulates the nervous system, produces a subsequent languor, which gives rise to a desire of repetition." And this tendency creates a slavery of the most terrible kind, which is transmitted even to the offspring, like all other defects and disturbances. It is, therefore, impossible to believe that

* Probably Sir James Paget got his notion from Dr James Mackenzie's *History of Health*, published in 1759, at Edinburgh and London. The author puts it as an objection made by the advocates of a Flesh-diet:—"*That men's morals are corrupted rather through want of discipline* than by the nature of their food; and that men of healthy and robust constitutions (as the Antediluvians certainly were), *under no restraint from laws human or divine*, are the most violent and mischievous savages of nature, let their aliment be what it will: that, in fact, the nations most addicted to lewdness, rapine, and murder, at this day, are frugal in their diet, *and forbid wine by their religion*, particularly the pirates of Barbary and the wild Arabs. And even in Britain and Ireland, those who live on bread, milk, cheese, cabbage, and potatoes, are perhaps no less disposed to rapine and violence than such of the community as have *good-drink* and *flesh-meat* in abundance. Nor is a wild-bull that eats grass, less furious than a lion that feeds on flesh; and we daily see some birds that live on grain fight and tear each other with amazing animosity"—(pp. 48-9).

an agent which lowers the mental tone, perverts the physical life, and upsets the moral balance, can do otherwise than largely augment the vice and crime of a community, whether Pagan, Jewish, or Christian.

§ 21. Finally, to return to definition, no thoughtful scholar can deny that 'Abstinence' is a part of the implication or meaning of 'Temperance'—as much as 'Beefsteak' is of 'Beef.' In other words, the nature and quality are of the same sort. Take Dr Andrews's translation of Freund's *Latin-German Lexicon* (1851), article ABSTINENTIA. What is the definition or description? "Abstinence, *self-restraint*—the quality by means of which one abstains from unlawful desires, acts, etc. The Synonyme *Continentia*, bridling or controlling one's self; *to hold back*," etc. If, therefore, alcoholic drinks are bad in their relation to human needs, abstinence from them is 'temperance,' and therefore the doctrine of temperance includes abstinence. Similarly, a reference to any Lexicon of the New Testament, would show the folly of all these verbal quibblings: in proof of which we give from Green's the following :—

"HAGNIZŌ—to purify morally, reform: hence, *heegnistheen*, to live like one under a vow of abstinence, as the Nazarites."

"SŌPHRÓNŌS—in the manner of a person in his *right mind*—temperately."

In other words, no man is 'temperate' whose *ideas* are false, and whose *appetites* are not subject to that truth of things which is the Divine law and absolute rule of moral life.

II.

THE CHEMICAL HISTORY OF ALCOHOL.

§ 1. THE intoxicating constituent in strong drinks specially objectionable on the ground of Temperance morals, is technically called ALCOHOL, or Spirit-of-Wine. It is common to ale and beer, to cider, perry, and other fermented drinks, and of course to every form of fermented wine, and of ardent spirit distilled from fermented liquors. It is a *product* of fermentation, an *educt* of distillation; in other words, it must be generated by the one process, before it can be drawn out or extracted by the other. To understand this fact in all its fulness, and to meet a large number of difficulties urged by the ignorant, it will be needful to explain the general principles of chemistry, and to show how alcohol comes into being.

The etymology of the word ALCOHOL is generally referred to *Kahol*, the fine powder with which the Oriental females paint their eyebrows, but this derivation may be doubted, as being based upon the abstract notion of subtilty. The analogy between a dark *powder* and a pale subtile *liquid*, seems to us too refined for the origin of a name: and we may suggest another, founded upon a more obvious notion. The Arabians believed in spirits called *Freets*, and hence the phrase *af-freet*, 'the spirit." From this has come our own words 'fright,' and 'affrighted,'—signifying the state in which a person is who fancies he has seen a '*freet*.' *Al-Kohôl* might be formed in the same way, from *al-ghôul*, 'the

evil-spirit'; for *ghouls* were supposed to 'possess' men. Now a person under the influence of the spirit-of-wine, would exhibit all the symptoms of one 'possessed' by a demon—the 'ghoul' of drink.* Shakespere had the same idea when he apostrophized 'the invisible spirit of wine,' and said, through one of his characters, "If thou hast no other name to be known by, I will call thee—*Devil.*"

§ 2. One objection may be anticipated, namely, that "Fermentation is a natural law or power." This is true, but it neither destroys the distinction between 'nature' and 'art,' nor relieves man from the responsibility of misusing natural power, to cast it upon the Divine Author. All works, whether bad or good,—whether the manufacture of pistol and powder, bullet and bomb, or the moulding of iron into ploughshares and pruning hooks, are equally done by borrowed-power, in the way of natural law; but the character of the work alone determines the moral position of the worker, according to the old and everlasting test, 'a tree is known by its fruit.' As well might it be argued that God designed the Ephesians to worship idols, because by His

* There is extant a Saracenic fable, which considers alcohol as an *evil spirit*, the agent of Satan, to be actually exorcised by *fire*. It is cited by Adam Fabroni, in his treatise 'on the Art of Making Wine' (Part iii. cap. 1), and in a still earlier book, 'Letters writ by a Turkish Spy' (London, 1693), from which we make a condensed extract :—

"Noah and his sons planted all sorts of trees, but when they came to look for the Vine, it could not be found. Then it was told Noah by the Angel, that the Devil had stolen it away, as having *some* right to it. Wherefore Noah cited the Devil to appear before the Angel; who gave judgment that the Vine should be divided between them into three parts, whereof the Devil should have *two* [as much as to say that its fermented wine does twice as much evil as good]—to which both parties consented. This was the decision of Gabriel: That when *two thirds* of the liquor of this Fruit should be *evaporated away* in boiling over the fire, the *remainder* should be lawful for Noah and his posterity to drink. And thou knowest that we Mussulmans generally obey this law in preparing *our* WINE. Let the Devil, therefore, in the name of God, have his share in his tempting fruit, for when *that which inebriates* [the al-ghôl, or evil-spirit], is separated by fire from the rest, this liquor becomes pure, holy, and blessed. This is the sentence of the ancients." (Vol. v. Lett. 12.)

power and intelligence they manufactured silver-shrines. They were 'the works of *man's* art and device,' but no more so than Bass's beer or Bourdeaux wine.

§ 3. On the authority of Professor Donovan's old treatise on chemistry (1830), it has been alleged that 'fermentation is a *spontaneous* process'; whence some people foolishly infer that the Deity designed that mankind should brew beer and distil brandy! In fact, however, there is and can be no 'spontaneous' processes!—all changes have conditions on which they are dependent. Nothing produces nothing. Brewing is an 'Art,' whether we brew wine or ale, and man is entirely *responsible* for every glass of it that ever existed. A single glass of *intoxicating* drink was never brewed in the whole realm of nature.* There were people, however, who long ago saw the facts of fermentation in a clear light. For example, in the 'History of Health,' James Mackenzie, M.D. (Edinburgh: W. Gordon; 1759) says of Noah :—"It was impossible he should know, and until experience taught him, that fermentation *gives* an inebriating quality to liquors, or would *produce* a spirit in the juice of the grape *which it did not contain before*" (p. 52).

§ 4. A celebrated English bishop and botanist, Dr Stanley, once said in Exeter Hall, by way of objection to the 'teetotalers,' that "their chemistry was at fault, since they took sugar, which contained alcohol." A lady wittily retorted with the *argumentum ad episcopum*—

> If in sugar *rum* there be,
> The bishop drinks it in his tea!

Clearly, however, *Saccha'rum* is one thing, and *'Rum* another; and before it can be truly alleged that the 'thing' *rum* is *in* the 'thing' saccha*rum* (as the one word is in the

* Professor DITTMAR, of Glasgow, says (1880) :—"Fermentations are, chemically speaking, *non-spontaneous*. No fermentable chemical substance will ferment except in presence of water, and unless it be kept, by means of the water, in direct contact with some *specific ferment*."—(*Encyclopædia Britannica*, 9th Ed.)

other), it must be extracted from the sugar while it remains sugar, which cannot be done. Certainly if it is in, it will come out; but if it will not come out, there is no proof that it is in. By the action of sulphuric acid, imitating the natural process of the growth of vegetable juices into sugar, a linen-shirt can be *changed into sugar*. Yet the most purblind of theorists would hardly infer, 'Therefore, there is sugar in shirt,' or '*shirt* in *sugar*.' Stated in the plainest terms, the 'matter' of all organic life is very much the same, while the *forms* of it are for-ever varying. Now we have the air, the water, and the mineral as the food of plants; then we have the infinite variety of vegetable organisms, of food and poison, built up out of these; here the golden wheat or fibrous flax, and there the poisonous poppy, florishing side by side in the same furrow; and again we have, fed by grass, roots, grain, and fruit, one flesh of birds and beasts, and another of man at the head and crown of creation. As St Paul says, in reference to plant, seed, and animal, though all springing originally out of the common elements of the globe, "God giveth to each a body as it pleaseth Him."—While things, in infinite variety, endless procession, and continuous circulation, having a unity at bottom, may assume *every form in turn*, they can never be *two* forms at the same time.* The thought, when analyzed, is seen to be an absurdity: for *change is a fact of succession;* and to affirm that one change is *within* another, or *is* another, is to talk pure nonsense.

§ 5. Professor FRANKLAND, of the Royal Institution, defines CHEMISTRY as "the science which treats of the *atomic composition* of bodies, and of those *changes which result* from an alteration in the relative position of their atoms." Substances are either (1) *simple* bodies, incapable of being

* Professor TYNDALL (1882) says:—"The same compound retains, for ever, the same elements, *in an unalterable ratio* [and position]. Number and harmony are everywhere dominant." Pythagoras, the teetotaler, saw the fact twenty-five centuries ago, which chemistry has now demonstrated.

resolved into more than one kind of matter, or (2) *compound*, separable into two or more distinct substances. The simple substances, up to our present knowledge, are sixty-four, technically called *elements*. They manifest a more or less intense affinity (or *attracting force*) amongst themselves when in contact, which induces aggregation of some, and consequent separation of others. Through the 'combination' of these elements, all the infinitely varied forms of matter are successively brought about. This force of chemical affinity has five known modes of action: (1) *Direct combination* of substances with each other. (2) *Displacement* of one element, or group of elements, by another. (3) Mutual *exchange* of elements. (4) A *re-arrangement* of the constituents of a body. (5) The *resolution* of a compound into one more simple, or into its elements.

§ 6. Each atom has its atomic weight or specific gravity, which represents, as nearly as possible, (1) The smallest proportion by weight in which it unites with, or is thrust from, a compound; the smallest weight of *Hydrogen* so entering or leaving a substance being taken as unity, *i.e.* the standard to start from. (2) The weight of the element in the solid state, which contains the same amount of heat as sevenfold by weight of solid Lithium at the same temperature. (3) The weight of the element which, as gas or vapour, under like conditions of heat and pressure, occupies the same volume as one part by weight of Hydrogen. The *weight* of a compound-substance is, therefore, the sum of the atomic weights of its elements.

§ 7. As a rule, the molecular weight of a *compound* is identical with its atomic weight. The molecular volume, or the space filled by the combining proportions of a compound, is equal to that filled by two combining proportions (= one molecule) of Hydrogen. Hence the law, "Equal "volumes of all gases and vapours contain, at the same "temperature and pressure, an equal number of molecules." Under this law, the molecules of nearly all compounds, how-

ever great the aggregate volume of their constituents, have one uniform volume, that of one molecule of Hydrogen. Thus, as to volume,—

2 of Hydrogen + 1 Nitrogen, form 2 of Ammonia.
3 of Hydrogen + 1 Oxygen, form 2 of Steam.

§ 8. Elements that combine with each other readily, develop much heat, *which measures intestine chemical affinity or motion.* Such elements are possessed of widely different properties, and when their compounds are *decomposed* by an electric current (another form of motion), the constituents are separated at opposite poles. Those at the positive pole are called 'Negative' elements; those at the negative pole, 'Positive.' (For another purpose and reason, the Negative are also called *chlorous;* the Positive, *basylous.*) The difference, nevertheless, is but one of degree, since they merge insensibly into each other, both series exhibiting a graduated intensity of the two qualities.

§ 9. The BOOK OF NATURE has in truth its natural Alphabet, out of which its simple syllables, its varied words, and distinct sentences—that is, its atmospheres and fluids, its earths and minerals, its living and illuminated chapters of the vegetal and animal kingdoms,—are all elaborated by a process of progressive *combination,*—a process whereby its 64 or so of primitive elements are *put together in different quantities and different ways,* resulting in that ever-increasing number and complexity of compounds which mark 'progress.' The following is the Primer of this Natural language. The 23 most necessary of these elements are put in large type, the next in importance in italics, and those rarely found in Roman type. The Star (*) indicates those which are essential *constituents* of the human Body.

NAME.	Symbol.	Atomic Weight.	NAME.	Symbol.	Atomic Weight.
ALUMINIUM .	Al.	27·3	MERCURY . .	Hg.	199·8
Antimony . . .	Sb.	122	Molybdenum . .	Mo.	95·6
Arsenic	As.	75·9	*Nickel*	Ni.	58·6
Barium	Ba.	136·8	Niobium . . .	Nb.	94·4
Beryllium . . .	Be.	9	NITROGEN* .	N.	14·01
Bismuth	Bi.	210	Osmium . . .	Os.	198·6
Boron	B.	11	OXYGEN* . .	O.	15·96
BROMINE. . .	Br.	79·75	*Palladium* . . .	Pd.	106·2
Cadmium . . .	Cd.	111·6	PHOSPHORUS*	P.	30·96
Cæsium	Cs.	133	*Platinum* . . .	Pt.	196·7
CALCIUM* . .	Ca.	39·9	POTASSIUM* .	K.	39·04
CARBON* . . .	C.	11·97	*Rhodium* . . .	Rh.	104·1
Cerium	Ce.	141·2	Rubidium . . .	Rb.	85·2
CHLORINE* . .	Cl.	35·37	Ruthenium. . .	Ru.	103·5
Chromium . . .	Cr.	52·4	*Selenium* . . .	Se.	78
Cobalt	Co.	58·6	SILICON* . .	Si.	284
COPPER . . .	Cu.	63	SILVER . . .	Ag.	107·66
Didymium . . .	D.	147	SODIUM* . .	Na.	23
Erbium	E.	169	*Strontium* . . .	Sr.	87·2
FLUORINE . .	F.	91·1	SULPHUR* . .	S.	32
Gallium	G.	14	Tantalum . . .	Ta.	182
Gold	Au.	196·2	Tellurium . . .	Te.	128
HYDROGEN* .	H.	1	Thallium . . .	Tl.	203·6
Indium	In.	113·4	Thorium . . .	Th.	231·5
IODINE. . . .	I.	126·53	TIN	Sn.	117·8
Iridium	Ir.	196·7	Titanium . . .	Ti.	48
IRON*	Fe.	56	*Tungsten* . . .	W.	184
Lanthanum . . .	La.	139	*Uranium* . . .	U.	240
LEAD	Pb.	206·4	Vanadium . . .	V.	51·2
Lithium	L.	7·01	Yttrium	Y.	93
*Magnesium** . .	Mg.	23·94	ZINC	Zn.	64
MANGANESE .	Mn.	54·8	Zirconium . . .	Zr.	90

§ 10. These elements are arranged in two great classes,—*Metals* and *Non-Metals* (or metalloids). The latter are fifteen in number: Arsenic, Boron, Bromine, Carbon, Chlorine, Fluorine, Hydrogen, Iodine, Nitrogen, Oxygen, Phosphorus, Selenium, Silicon, Sulphur, and Tellurium. Eight of these elements are Negative or *Chlorous* toward the other *Basylous* ones,—namely, Fluorine, Chlorine, Bromine, Iodine, Oxygen, Sulphur, Selenium, Tellurium. Many of these substances are very rare, and some are found in such small quantity that their properties are yet not well known. Of those occurring in masses, we have Oxygen distributed throughout the air, the waters, the rocks, and

soil, making half the weight of the globe. Four of the Elements are found in the atmosphere, and thirty in the sea. Of 100 parts of the Crust of the Earth, the composition is as follows :—

Oxygen	44 to 49	Calcium	1 to 6½
Silicon	22 to 36	Magnesium	$\frac{1}{10}$ to 2½
Aluminium...	6 to 10	Sodium	2 to 2½
Iron	2½ to 10	Potassium...	1½ to 3

Spectrum analysis, by the prismatic ray emitted, can detect the presence of a substance even if it be but one part of the 180-millionth of a grain. It has thus discovered in late years several rare substances, and may be expected to discover others in course of time. Each substance has its own *signature*, revealed by light, which thus opens up to us, in part, the constitution and chemistry of suns, moons, and stars !

§ 11. The meaning of *Chemical Notation*—a scientific or precise system of naming which tells the history of the combination—should now be understood by every educated young man ; for without this it is impossible truly to explain the most important problems in biology or life.

(*a*) A chemical compound of the first order is called *binary*, because it represents the union of two elements ; and the special name is taken from that of the constituents; that of the 'positive,' ending in *ic*, being placed before that of the 'negative' ending in *ide* :—

> Potassium, united with Sulphur, becomes Potassic Sulphide.
> Sodium, united with Oxygen, becomes Sodic Oxide.
> Silver, united with Chlorine, becomes Argentic Chloride.

(*b*) When the same elements form two compounds, in the one containing the least of the Negative element the name of its Positive ends in *ous*, the *ic* being reserved for the compound containing the larger proportion of the Negative element.

(*c*) So of an acid containing Oxygen, its name has gener-

ally the terminal *ic* added to the name of the element to which the Oxygen is united (or to an abbreviation), as, Sulphur, united with Oxygen, FORMS Sulphuric Acid; Nitrogen, united with Oxygen, FORMS Nitric Acid; Phosphorus, united with Oxygen, FORMS Phosphoric Acid.

(*d*) But when the same element with Oxygen forms two acids, the *ic* is added to the name of the acid containing the larger amount of Oxygen, and the ending *ous* is adopted for the other.

(*e*) The symbols attached in the table to the primary substances, when conjoined in use, always *denote a certain definite proportion by weight of each element.* HCl, for instance, not merely signifies a compound of Hydrogen and Chlorine, *but a molecule of that compound containing exactly one atom* (*i.e.* one part by weight) *of Hydrogen, and one atom* (35·37 parts by weight) *of Chlorine.* If the molecule of a compound contains more than one combining ratio of any element, the formula expresses the fact by a figure *after* and *below* it, as,—

Zincic Chloride . . . . . **Zn** Cl_2
Ferric Chloride . . . . . **Fe**$_2$ Cl_6

(*f*) When a *large* figure is placed before the formula of a compound, it is designed to apply to every symbol in that formula: thus—3**S**O_4 H_2 denotes 3 molecules of the compound **S**O_4 H_2 (Sulphuric Acid).*

§ 12. In the case of the Acids containing no Oxygen, prefix *sulpho* for Sulphur, and *hydro* for Hydrogen.

If a binary compound of atoms contains Oxygen, and forms an acid when united with water, or a salt when added

* The *thick* type is used to show that the element represented by the first symbol of a formula is *directly united* with all the active-bonds of the other elements following on the same lines. Thus **S**O_2 Ho_2 shows that the hexad atom of S is in union with the *four* bonds of the two atoms of O and H, and with the two bonds of the two atoms of *Hydroxyl* (Ho).

to a base, it is termed an *anhydride*, or anhydrous acid. Thus :—

1 C and 2 O form Carbon*ic* Anhydride.
2 N and 3 O form Nitr*ous* Anhydride.
1 S and 2 O form Sulphur*ous* Anhydride.
1 S and 3 O form Sulphur*ic* Anhydride.

The systematic names have not yet entirely displaced the trivial names in the instances of

Water, Common Gas (Sulphuretted Hydrogen), Hydrochloric Acid, and Ammonia.

Nor in several of three classes of compounds called *Bases*, convertible into Salts by the action of acids.

Baric Oxide is commonly known as Baryta; Calcic Oxide, as Lime; Magnesic Oxide, as Magnesia; Aluminic Oxide, as Alumina.

A second class of compounds of Metals with *hydroxyl* get their names by changing the terminal syllable of the metal into *ic* or *ous*, and 'hydroxyl' into *hydrate*. Potash properly should be Potassic-hydrate; Soda, Sodic-hydrate. *Hydroxyl* (Ho) is the radical of Water. It belongs to a class of inorganic radicals, compounds of one or more atoms of a polyad element, *of which some of its bonds are unsatisfied.*

§ 13. A third class of bases, compounds of nitrogen, phosphorus, arsenic, etc., have their names ending in *ine*, except *ammonia*, which keeps its old title.

If a Salt be free from Oxygen and Sulphur, like table-salt (NaCl), it is termed a *haloid;* if it hold Oxygen, it is termed an *oxy-salt;* and if that element be replaced by Sulphur, a *sulpho-salt.* They are named according to the rule for binary compounds; namely, Sodic Chloride, etc.

The Oxysalts are either normal, acid, or basic. In a *normal* salt (erroneously called 'neutral'), the displaceable hydrogen of the acid is all exchanged for an equivalent amount of a metal, or of a positive compound radical.

In an *Acid*-salt the displaceable hydrogen of the acid is but partially exchanged for a metal or positive compound radical.

When in a Salt the number of BONDS—that is, of *affinity for other elements*—of a metal, or compound positive radical, is greater than the number of atoms of displaceable hydrogen, the compound is termed a *basic* Salt; as in union with copper:—

Carbonic Acid $\mathbf{C}O_3 H_2$. { Malachite $CO_5 H_2 Cu''_2$ / Blue Cupric Carbonate $\mathbf{C}_2 O_8 H_2 Cu''_3$

These bonds are expressed by the *marks* ″ up to four, by Roman numerals (as v. vi. etc.) beyond.

H′ Hydrogen; Zn″ Zinc; B‴ Boron; C⁗ Carbon; N^{v} Nitrogen; S^{vi} Sulphur.

It follows, from this variation of attachment (or atomic power), that the atoms, and their relative weights, *display very different values in chemical reactions.* An atom of Zinc is equal to two atoms of Hydrogen; so that, when Zinc is brought into contact with Steam at a great heat, one of Zn expels from the Steam two of H, taking their place, thus:

$$\underset{\text{Water.}}{\mathbf{O}H_2} + Zn = \underset{\text{Zincic-oxide.}}{\mathbf{O}Zn} + H_2$$

§ 14. The scholar having mastered the notation, will begin to see into the secret and meaning of combination. Here are some fundamental examples expressed in various ways, commencing with WATER, HO (*Hydric oxide*).

Symbolically (H)–(O)–(H) Formula $\mathbf{O}H_2$

Molecular weight = 18. Molecular volume □□. Boils at 100° Centigrade; Fah. 212°.

Water is formed by the direct union of Hydrogen and Oxygen. It occurs abundantly in nature; and is, in fact, the very blood of all vegetal life, the vehicle of movement

and transformation! It is a secondary product in an incalculable number of chemical reactions. It acts on many metallic-oxides, and converts them into hydrates.—Potassic oxide *plus* Water, becomes Potassic hydrate, transforming anhydrides into acids. For example,—

$\mathbf{P}_2O_5$	+	$3\mathbf{O}H_2$	=	$2\mathbf{P}OHo_3$
Phosphoric-anhydride.		Water.		Phosphoric-acid.

Water-vapour is probably not an assemblage of single molecules of the compound $\mathbf{O}H_2$, but of very complex *groups* of them, united without lessening their size. *It is this which adapts Water for the great purpose of retaining radiant heat,* having a greater power of absorption than any other known substance; *and thus acting as a blanket for the world, keeping its temperature up to the living-point.* Without this property of water-vapour, the earth's surface would become in a few hours too cold to live upon.

As another example of the alteration or intensifying of properties effected by union in different positions, take the dyad element of Oxygen (O_2). Its atomic weight = 16; its molecular being dual = 32. It occurs in a free state in the atmosphere, exists in most minerals and nearly all vegetable and animal compounds. It is given out in nature abundantly through the decomposition of Carbonic anhydride, $\mathbf{C}O_2$, by the foliage of plants, the pores taking up the Carbon for structure, leaving the Oxygen to escape; *so that the growth of plants is a perpetual source of this vivifying gas.* But it exists in *another form* (allotropic) as Ozone, O_3, and in that state is intensely oxidizing, rusting silver and mercury, and decomposing organic matters, even at common temperatures.

§ 15. It may now be understood how *Alcohol* can come into existence as the result of artificial combinations, under the power of latent affinities. *Vinous Alcohol,* in fact, is one of a tribe of Alcohols. They have been called 'hydrated oxides' of the basylous-radicals, but wrongly, since they

contain no Water. They are really compounds of hydroxyl with the basylous organic-radicals; so that each series of radicals forms a corresponding one of Alcohols. They saturate acids (according to the number of atoms of hydroxyl), forming ethereal salts.

The simplest or first-born of this family of Alcohols is *Methylic Alcohol* (distilled from wood-spirit),* derived from Marsh-gas by the substitution of one atom of hydroxyl for one of hydrogen :

CH_4	$CH_3\,OH$
Marsh-gas.	Methylic alcohol.

§ 16. Ethylic Alcohol, *Spirit of Wine*, has the following formula :—

$$\left\{\begin{matrix} CH_3 \\ CH_2\,Ho \end{matrix}\right. \text{ or EtHo (}i.e.\text{ Ethylene and Hydroxyl).}\dagger$$

Its *molecular weight* = 46. Specific *gravity*, 0·792 at 20° Centigrade. Boils at 78·4° C.

It can be prepared synthetically from Ethylene treated with HCl and KHo :—

$\left\{\begin{matrix} CH_2 \\ CH_2 \end{matrix}\right.$	+	HCl	=	$\left\{\begin{matrix} CH_3 \\ CH_2\,Cl \end{matrix}\right.$
Ethylene.		Hydrochl.-acid.		Ethylic-chloride.

Distilled with Chloride of Lime, ethylic alcohol produces *Chloroform*, an *anæsthetic* of the same class, paralyzing nervous functions.

Ethylic Alcohol, C_2H_5HO, also results from the fermentation of grape-sugar by *yeast*, at about 22° Cent.

Cane or Malt-Sugar, in the process of fermentation, is

* Had men possessed an appetite and an interest in the direction of this kind of Alcohol—'Spirit of Wood'—we should have had bishops contending that *logs of wood* contained *alcohol*, just as they say that sugar does! Dr B. W. Richardson tells us that *this* alcohol is the least harmful of the whole legion of evil spirits.

† The 'old notation' expressed the facts as follow :—Sugar $C_{12}H_{12}O_{12}$ decomposed into $2C_4H_6O_2 + 4CO_2$.

always changed into *glucose* (grape-sugar) before alcohol is formed. *How* the yeast acts in deranging the natural combination, and in splitting up the sugar, is not yet known.

§ 17. Here is the proper place to explain the real nature of *yeast* or *barm*.* It is a microscopic fungus or plant, the spores of which float in the air, and so are deposited in the '*must*' or 'wort' to be fermented. It finds its soil in the *albumen* of that liquid, *on which it feeds or grows, causing the foaming, frothy appearance so familiar to the household baker and brewer.* In the act of growing and multiplying, it communicates an impulse to the sugar, which being decomposed, its elements assume new shapes, namely, carbonic acid gas, which bubbles off, and alcohol, which remains in the liquid, giving to it its intoxicating power. In the fermentation of dough (or moistened flour), the same process goes on less actively, but the heat of the oven dissipates entirely the little alcohol which is formed.

'Fermentation' may be prevented by many means; especially by any plan which excludes common air *containing yeast spores* from the juice, syrup, or 'preserves' required to be preserved. Mr Frank Wright preserves his *un*fermented wine, or sacramental 'fruit of the vine,' by first *heating* the expressed juice, so as to kill any yeast-fungus that may have been absorbed, and then creating a *vacuum* in the neck of the vessel. If a little *cotton-wool* be placed between the air and the fluid (say, in the neck of the bottle),

* The first word is a derivative of the Teutonic *ghast* and *gas;* the second, of the oriental *khamer*, whence *ferm(ent)*, *warm*, *scum*, *foam*, etc. The common idea is that simply of boiling or bubbling-up. The ancient notion of 'fermentation' went no further. "In all cases," as Prof. Huxley says, in his lecture on yeast, "it will be found that precise, scientific knowledge differs from common knowledge. It is wonderful to note how long it has taken mankind to come to *any clear, precise knowledge upon the subject*, the matter not having been looked at in a scientific way till after the revival of letters." How supremely foolish, then, for some critics to attach the modern notion to the ancient word for fermentation! In truth, there was no word for 'fermentation' in the ancient languages, in our sense, because they had no precise idea of the process itself.

it will act as a *filter*, and exclude the yeast-spores by catching them in its net-work.

§ 18. There are *five* well-known kinds of Fermentation.

1. The *alcoholic*, producing alcohol out of glucose.
2. The *acetous*, producing vinegar from alcohol.
3. The *lactic*, or milk-souring, yielding lactic acid.
4. The *butyric*, producing the butter-acid.
5. The *mucous*, giving rise to gum and mannite.

§ 19. By *oxidation* ethylic alcohol is converted into (1) ALDEHYDE, and (2) ACETIC ACID. Hence, whoever alleges that, under any circumstances, whether *in* the body or *out* of the body, this alcohol is decomposed, gives no scientific proof of the fact until the *derivatives* are demonstrated to be present. The change will be as follows :—

$$\underset{\text{Ethylic alcohol.}}{\begin{cases} CH_3 \\ CH_2\,Ho \end{cases}} + O = \underset{\text{Aldehyde.}}{\begin{cases} CH_3 \\ COH \end{cases}} + \underset{\text{Water.}}{OH_2}$$

$$\underset{\text{Aldehyde.}}{\begin{cases} CH_3 \\ COH \end{cases}} + O = \underset{\text{Acetic acid.}}{\begin{cases} CH_3 \\ COHo \end{cases}}$$

Ultimately, these substances are oxidized into carbonic acid and water; but if in the blood, can be detected.

It must, by this time, be plain to the meanest capacity, that no blunder can be greater than to rank intoxicating liquors amongst the products of Nature. This truth, of course, has been always known to chemists of repute, showing how readily the simple truth *can* be perceived, where no blinding prejudice, or perverting appetite, darkens the understanding.

§ 20. "The formation of Alcohol," said the French chemist, A. F. Fourcroy (1785), "takes place at the expense of the *destruction of a vegetable principle*: thus fermentation is a commencement of the destruction of principles *formed* by vegetation. The *acid* fermentation is *the second natural movement* which contributes to reduce

vegetable compounds to more simple states of composition. . . Finally, after vegetable liquors have passed to the *acid state, their decomposition continuing*, under favorable circumstances (namely, a warm temperature, exposure to air, and the contact of water), leads them into putrefaction, which terminates in volatilizing most of the principles under the form of gas. . . Though all the circumstances of putrefaction are not yet described, or even known, we have discovered that they are confined to the conversion of *complex substances* into substances *less compound;* that Nature restores to new combinations the materials she had but lent, as it were, to vegetables and animals; and that she thus accomplishes the perpetual circle of compositions and decompositions, which attests her power and demonstrates her fecundity, while it announces equal grandeur and simplicity in the course of her operations." *

"NATURE," said Count Chaptal, "NEVER FORMS SPIRITUOUS LIQUORS; *she rots the grape upon the branch, but it is* ART *which converts the juice into* [alcoholic] *wine.*" †

"ALCOHOL," said Dr E. Turner, "is the intoxicating ingredient of all spirituous and vinous liquors. IT DOES NOT EXIST READY FORMED IN PLANTS, but it is a *product* of the vinous fermentation." ‡

§ 21. There is a significant *contrast* between Food and Alcohol, as regards the way in which their elements are combined.

"The substances," says Liebig, "which constitute THE PRINCIPAL MASS of every vegetable, are compounds of carbon, with oxygen and hydrogen *in the proper relative proportions for forming water.* Woody fibre, *starch, sugar,* and *gum,* for example, are such *compounds of carbon with the elements of water.* In another class, the proportion of

* *Philosophy of Chemistry,* ch. xii.
† *L'Art de Faire le Vin.* Paris, 1819.
‡ Elements of Chemistry, 2nd ed., p. 664 (1838).

oxygen is greater than would be required for producing water by union with the hydrogen. The numerous organic acids met with in plants belong, with few exceptions, to this class. A third class may be regarded as compounds of carbon with the elements of water and an *excess of hydrogen.* Such are the *volatile and fixed oils*, wax, and the resins." Eight-tenths of all vegetal food is constructed of carbon and *the elements of water*, whence the blandest properties result, like water itself,—

"Honest water, too weak to be a sinner."

On the other hand, *poisons* are generally virulent in the ratio of the *disproportion* between the H and O.

§ 22. In fine, alcoholic-liquors are known as the result only of *one process*, operating upon *one substance*,—the process is FERMENTATION, the substance GRAPE SUGAR (*glucose*). By no other process, upon any other substance, have they ever been produced.* Hence, no organic-substance in the universe can possibly contain alcohol *prior* to, or independent of, that process on which its genesis depends. But this process can take place in no living organism, plant or animal, nor even in lifeless substances, until certain conditions conspire to produce it.

§ 23. What is the *nature* or character of the *vinous fermentation* which generates Ethylic Alcohol? The following is from Turner's *Chemistry*:—

* Though alcoholic *drinks* are exclusively made by inducing the fermentation of food substances, FLENNEL long ago, and BERTHELOT more recently, discovered a method of making *alcohol* by *synthesis*,—that is, instead of undoing nature's work of growth in fruit and grain by the conjoint processes of *malting* and *fermenting*, they put together certain compounds containing the elements of alcohol, when 'affinity' did the rest. The method will probably always remain too costly even for the manufacture of alcohol for chemical purposes. (§ 16.) Practically, then, the objection that alcoholic drinks are obtained only by the decomposition of food, cannot be evaded.

It is Man that transforms by art's chemical spell
The sweet milk of the earth to an essence of hell.
He *fermenteth* the fruit, and *corrupteth* the grain,
To engender a spirit that maddens the brain.

"This name is given *to the peculiar decomposition* which the different species of sugar undergo *in certain circumstances;* and by which their elements combine to form *new compounds*, which, under similar conditions, are always the same. When a saccharine solution is placed in contact with substances in a state of decomposition or putrefaction,* it is observed after about twenty-four hours, if the temperature be kept betweeen 38° and 86° F., that *the taste of the sugar has disappeared;* pure *carbonic acid* is disengaged, and the liquid has acquired intoxicating properties. It *now* contains alcohol, which may be *separated* by distillation. If we compare the composition and quantity of these products with that of the sugar employed, we shall find them to contain the same weight of carbon."

§ 24. Liebig thus defines these changes :—

"FERMENTATION, PUTREFACTION, and DECAY are processes of *decomposition*, and their ultimate results are to *reconvert* the elements of organic bodies into that state in which they exist *before they participate in the processes of Life*, [whereby] complex ORGANIC ATOMS of the *highest order* are REDUCED into combinations of *a lower order*, into that state of combination of *elements* from which they sprang."—(Letters on Chemistry, 2nd series, pp. 127–129.)

§ 25. Turner's *Chemistry*, edited by Prof. Liebig, says: "*Fermentation is nothing else but the* PUTREFACTION *of a substance containing no nitrogen.* . . It is highly probable that cane sugar, before it undergoes the vinous fermentation, is converted into grape sugar by contact with the ferment;†

* Such substances do cause fermentation, but it is now known that in brewing the *yeast* is the living agent that effects the change—doing for the *must* or *wort* what the mites and maggots do for cheese.

† Malt wort, or a solution of sugar, requires the presence of the yeast-plant to *set up* the fermentation. It is the active-agent, as when the *vinegar-plant* makes vinegar out of sugar-and-water. The plant feeds upon the albumen, and decomposes the sugar. This explains why *ferment*, and *fermented substances*, were prohibited in the typical and symbolical institutions of the Jews, and applies to wine, as well as *honey* and bread.

and that, consequently, it is *grape sugar alone which yields alcohol and carbonic acid.*"

§ 26. The following passage is from the 'Organic Chemistry' of Liebig (1843):—

"FERMENTATION OF SUGAR.—The peculiar decomposition which sugar suffers may be viewed as a type of *all* the transformations designated 'fermentation.' It can be proved that the hydrogen of the sugar *does not exist in it in the form of alcohol*, for it is converted into water and a kind of carbonaceous matter when treated with acids, particularly with such as contain no oxygen; and this manner of decomposition is never suffered by a compound of alcohol. SUGAR, therefore, CONTAINS NEITHER ALCOHOL NOR CARBONIC ACID, so that these bodies must be produced by *a different arrangement of its atoms*, and by their union with the elements of water."

§ 27. An American serial having, in 1847, given currency to some erroneous views regarding the *sudden* production of alcohol in newly expressed grape juice, we induced an esteemed friend and careful analyst, to institute a number of experiments, and now republish his 'Report.' (See also § 37.)

EXPERIMENTS OF AN ENGLISH CHEMIST (1847).

"The Committee of the *British Temperance Association* having received, from Dr Lees, the detail of the following experiments, conducted by a practical chemist in the presence of competent witnesses, are prepared to offer a premium of £50 to any person who will *extract* any appreciable quantity of *Alcohol* from grapes, ripe or otherwise, *provided the fruit has not in any way been meddled with by art;* they believing that the intervention of man is necessary to the placing of fruit in a condition such as will permit of the *vinous* fermentation." [After thirty years' lapse of time, these experiments remain unrefuted.]

Dr Pereira (Elements of Materia Medica), writing of the Manufacture of Wine says:—"Grape juice does not ferment in the grape itself. This is owing, not [solely] as Fabroni

('L'Art de Faire le Vin'; Paris, 1801) supposed, to the gluten being contained in distinct cells from those in which the saccharine juice is lodged, but to the exclusion of atmospheric oxygen [*containing spores of yeast*], the contact of which, as Gay-Lussac ('Ann. de Chim.' lxxvi. 245) has shown, is necessary to effect some change in the gluten; whereby it is enabled to set up the process of fermentation.* The expressed juice of the grape, called *must*, readily undergoes the vinous fermentation when subjected to the temperature of between 60° and 80° F."

Here we find two celebrated philosophers, natives of wine countries, quoted as *knowing* that grape juice does not ferment in the grape itself; and how each attempted to *account* for the fact. Yet now, after a lapse of forty years, we hear the assertion that alcohol is contained in ripe grapes whole or bruised! After it has been ascertained that a certain sort of decomposition in a certain substance *cannot* take place, we are entitled to remain incredulous, until proof shall be produced that Nature's laws no longer continue the same as formerly. Nevertheless, we have been willing to make a few experiments, in order to see with our own eyes, whether the old truths, or the new assertions, best agree with the laws of Nature.

(I.) One pound of fully ripe grapes (Black Hamburg) were put into a glass retort, with half a pint of water, and distilled very slowly until three fluid ounces had passed into the receiver. This product had no alcoholic smell. It was put into a small glass retort, with an ounce of fused chloride of calcium, and distilled very slowly till a quarter fluid ounce was drawn; this second educt had no smell of alcohol, nor was it in the slightest degree inflammable.

(II.) A flask was filled with grapes, none of which had

* Here was a case of jumping to a conclusion on the evidence of one's eyes! The oxygen seemed to be essential, when in fact it was *not* the oxygen at all, but the YEAST SEEDS floating in it, which the chemist did not see.

been deprived of the stalks, and it was then inverted in mercury.

(III.) Another flask was filled with grapes from which the stalks had been pulled, and many of which were otherwise bruised: this flask was also inverted in mercury. The flasks were placed, for five days, in a room of the average temperature of about 70° Fah. In the perfect grapes no change was perceivable. In the bruised grapes *putrefaction* had proceeded to an extent, in each grape proportionate to the degree of injury it had sustained; the *sound parts* of each continuing unchanged.

(IV.) The grapes were now removed from the flask, and the juice expressed from each.

The juice from the bruised grapes had, not an alcoholic, but a *putrescent* flavour. Dr A. T. Thompson (Dispensatory, p. 644) says "that in wine countries, before the grapes are subjected to the press, *the sound are separated from the unsound with great care*," evidently to prevent this putrid taste in the wine. The juice from the sound grapes was perfectly sweet.

But these juices were placed in lightly corked phials, half-filled, and subjected to a proper fermenting temperature. *It was three days before the commencement of fermentation, in each*, was indicated by the evolution of carbonic acid gas, as also by the odour of the alcohol, and of the aromatic oils always generated in such cases. I therefore still believe it to be A FACT, that grapes do not produce alcohol; that it can result only where the juice has been *expressed* from them, and then not *suddenly:* and that, where the hand of man interferes not, alcohol is rarely, if ever, formed.

JOSEPH SPENCE.
Chemist to the Yorkshire Agricultural Society.

§ 28. In the year 1880, the foolish part of the English newspapers printed a notice of a French chemist having discovered alcohol *in everything* save 'spring-water'! Some

of them had leaders about the alleged discovery, and idiotically inquired, 'What will the teetotalers do now?' Of course, our reply was ready—'*Nothing*, save remain perfectly sober as before.' If alcohol *be* everywhere, except at the bottom of a spring-well, we shall certainly not go there to escape it: and, indeed, if it leaves us sensibly sober and healthy, as before, we do not care to object to it.* Teach us how to take alcohol without loss of health, money, or sobriety, and we are quite content. It is by their *fruits* that we wish to know things. Innocent alcohol is as good as innocent water—when you find it. But what was the ground-work of this Cock-and-Bull story? We have *La Nature* before us, which tells the tale of wonder. Monsieur A. Müntz, the director of the laboratory at the Agronomic Institute, thus communicates his 'discovery.'

"Arable soil, waters of streams and ditches, the ocean, snow, contain *traces* of alcohol—formed by the *fermentation* of organic matters. Only *infinitesimal* quantities are involved—reaching only the proportion of *millionths*. [Here follows the description, with engravings, of the apparatus employed to detect these millionth parts.] 15 drops were contained in a *cube* of 40 inches.—Iodine and carbonate of soda were the re-agents employed to detect the presence of *one millionth part* of alcohol. Tepid waters contain least of it. In sewage waters the proportions increase very perceptibly. It *originates* in the *fermentation* of vegetables in the soil; is then evaporated into the air, and brought down and condensed by cold, snow, and rain."

As teetotalers do not *drink* river, ditch, snow, sea, or sewage-water, or *eat* arable-soil moistened with manure, this discovery does not disturb their serenity. M. Müntz's theory is absurd and needless, as to the origin. The quantity *alleged* to be found can be accounted for in a more simple

* Everybody in a crowded country is breathing the seeds and germs of pestilence, and in manufacturing towns the air is vitiated more or less by organic and inorganic poisons. What then? 'What we can't cure, we must endure,' says the Proverb: and the fact of this unavoidable liability to this minute danger is no reason for not carrying out *practical* Sanitary reforms, much less for setting up *breweries* of the poison.

way than from *rotting* nature. More alcohol is drunk in France, head for head, than in England: and here 130 million pounds is spent upon it yearly. The vast quantity represented by this goes *into* the bodies, and it mostly comes *out* of the bodies, of the people. Where can it go to, but into the air from the breath, into the ground from the sweat, and from the renal-secretion into the sewage. Most goes there, and most is found *there!* If found, our cause of complaint against *drink* is much more serious than the infinitesimal existence of alcohol in drains and ditches, and in *un*smellable proportions in the air—namely, its palpable and disgusting smell in railway carriages, city omnibuses, and social assemblies.

While we are on this theme, however, let us finish the exposure of its intense absurdity. If, as stated by M. Müntz, 15 drops of alcohol *were* contained in a cube of soil, of sea- or ditch-water, or of sewage, we presume *moderation* in the 'good creature' would not exceed a pint per diem. Now, carry out this calculation,* and it will be 'discovered' that the amount consumed would be just *one part of one hundred and twenty-three parts* of a SINGLE DROP per day!

But M. Müntz's proof is not reliable. It has been shown years and years ago, that the iodoform reaction is equivocal for any *specific* substance: since sugar, ethers, and other substances besides alcohol, give the same reaction. Drowning-Drinkdom, therefore, in the profound credulity of ignorance, has been grasping at the shadow of a straw.

§ 29. The physical and social effects of drinking alcohol

* My friend, Mr Spencer Collyns thus works out the problem :—
1 Standard Gallon = 277·274 cubic inches :
∴ 1 pint ($\frac{1}{8}$ gal.) contains 277·274 ÷ 8 = 34·65925 cub. inches.
∴ Cube of 40 inches, or 64,000 cub. inches, contains (64,000 ÷ 34·65925) rather more than 1846$\frac{1}{2}$ pints.
∴ If 15 drops in a Cube of 40 inches: 15 ÷ 1846·549 = No. of drops in 1 pint, or ·00812326 = $\frac{406163}{50000000}$; or a little less than $\frac{1}{123}$ of a drop per pint.
∴ drinking or eating *one pint* per diem, a man will drink $\frac{406163}{50000000}$ of a drop = $\frac{1}{123}$ part of one drop of alcohol per day!

in wine, and alcohol distilled from wine, are everywhere the same, differing only in degree. Both engender according to their strength, the terrible and debasing appetite for themselves which it is the object of Temperance Societies to suppress. Yet, such is the force of prejudice, that an old theory is revived by Prof. Kranichfeld, of Berlin, that alcohol in wine is not alcohol, but *the vinous principle!*—a theory exploded by Gay-Lussac above thirty years before, as well as by Prof. Brande, in the 'Philosophical Transactions' for 1811–13. After Berzelius had pronounced the Berlin experiments to be inadequate, they were held rather with hope than confidence; for, at a general assembly of deputies of the German Temperance Societies (Hamburg, August, 1843), a prize of two hundred Louis d'or was proposed for the solution of this question:—"Is the *animating principle* in spirituous liquids, before the distilling (or any other chemical) operation, of the very same kind and quality as after, or is it after such process different from before; and if so, what are the medical, physical, and chemical qualities and effects of the one as well as of the other?" On testing wine, "*the first portions which distil contain water*, and are followed by absolute alcohol"; and this impure compound, consisting of alcohol, united with the *œnanthic acid* and the volatile oils which pass over before the end of the process, is the so-called '*vinous principle*'! Considering it as *a collection* of things, no wonder it should not burn, taste, and smell *exactly like* anhydrous alcohol. When exposed to a second distillation, and higher degree of heat, which separates the water and heterogeneous principles, it appears as undisguised 'alcohol.'

Professor BRANDE, at the Royal Institution,* says:—

"Some chemists have supposed that the alcohol is *generated by the action of heat*, and is altogether a *product* of distillation. But, inasmuch as I can obtain the same quantity

* *Medical Times*, viii. p. 180, 1843.

of alcohol by distilling wines *at very low* as at very high temperatures, and as I can get the full complement of alcohol from the stronger wines *by the action of carbonate of potash*, which abstracts water and separates alcohol without any interference of heat, we must not allow those who indulge in wine to

'Lay *this* flattering unction to their souls,'

or to use any such argument in opposition to the teetotalists."

§ 30. The ancients regarded 'fermentation' as a deteriorating process of change in eatables, and one might wonder (did we not know how little prone men are to thinking) that the same view was not held as to drinkables, seeing that all the solids in them are but foods dissolved, and simply changed in form. They did so, in fact, with respect to some food and drink. They held sweet milk to be better than sour, sweet bread superior to what had become stale and mouldy, and they preferred fresh meat to that which had become tainted or putrefied. But the Tatars, when they discovered how to make *Koumiss*, grew fonder of it than of the milk, because it brought with it the pleasure that attends nerve-stimulation, for which alone could any one be tempted to sin in that way. The effects of narcotic drinks in soothing or exciting at the expense of health, and in generating an ever-increasing liking for them, ended by corrupting at once the conscience and the customs of the community. Still, in all ages of the world, 'fermentation' in general has been regarded as '*corruption*,' or a degrading change in organisms. The earliest scientific students of this matter, held the same view. Van Helmont, two centuries ago, calls the process 'fermentum *corruptivum*.'* It was reserved, however, for these days to detect its special nature, and explain the real processes and conditions which it involves. In old French, the word used

* The early Christian Fathers did the same. We all know St Paul's view (1 Cor. v. 6–8). So Justin Martyr in 'Dialog. cum Trypho.'

for fermenting was 'boiling,' and in vulgar English it is called 'working'—words connoting 'change.'

§ 31. Fermentation is now ascertained to be a *process of decomposition* of organic matter, effected by the action of microscopic *fungi*, which live and multiply upon the substances they decompose. What is called *yeast* or *bharm* (ferment) is a collective mass of these infusorial plants mixed up with the albuminous and amylaceous matter on which they feed. The acting agent is alive, but the process is one of decay and destruction to the organic substance that undergoes it; which ceases to be food fitted for man. A few sentences will explain all that is, for our purpose, necessary to be known regarding *yeast*.

A force resides in all *living* cells, or organisms, which, in the presence of an appropriate stimulus, *reacts* or moves. For example, a seed grows under light and heat, an egg develops into a bird, a stomach secretes and digests, a heart beats and pumps, a brain feels and acts. Each organ or cell has its own function. So with the cells of the *yeast* plant, which is of various species, and all of them so fine that, though floating in the air, they are more invisible than the finest dust. Falling into a fitting liquid of an albuminous and saccharine nature, under fitting conditions of temperature, they immediately begin to live upon it, to develop and increase, decomposing the innocent sugar into volatile and burning alcohol and the suffocating gas carbon-dioxide, using up the albumen for their own growth. Thus two ounces of *yeast* in working will absorb albumen from the wort of malt, until a pound of yeast is formed.

Yeast was formerly classed as a *Torula*, which develops by 'spores,' but it really multiplies by 'cells.' Since it has been known that the alcoholic fermentation belongs exclusively to sugary matter, it has been called *Saccharomyces Cerevisiæ*. The former has a 'mycelium'—the latter not; so that, in genesis and structure, the two are different.

M. Becker (1682) who made the first great advances in

the study of this question, pointed out two facts of importance—first, that sugary liquids alone are capable of the alcoholic fermentation; and second, that the *spirit* does not pre-exist in the 'must' or 'wort,' but is *formed* by the fermentation.* Had this old yet elementary knowledge been diffused fifty years ago, we should never have heard from either deans or dunces, farmers or physicians, such absurd statements as that 'alcohol is in sugar and bread,' and 'whatever comes out must be in'; or, 'where you have the elements of a thing, you have the thing itself.'

§ 32. Wines, Ales, Beers, Porters, and other *fermented liquors*, such as Cider and Perry, differ from *distilled spirits* only in this, that the latter have more thoroughly got rid of the *small remains* of the original substances from which they were made, whether grain, fruit, or fruit juices. Intoxicating liquors are, in the main, *but Alcohol and Water, more or less strong*, and injurious in proportion to the *quantity* of the alcohol contained in them. Adulteration, no doubt, is practised; but, so far as Temperance is concerned, it may be stated as a rule, that no other drug is worse than the alcohol. The purpose of the brewer is not to make a 'nourishing' beverage; and every pretence of the kind is an impudent imposition upon public ignorance and credulity. *The object of the brewer is to clear the liquor of all the natural gluten or albumen dissolved in malt wort, apple juice, or wine must, and to convert the valuable sugar into alcohol and carbonic-acid.* The *chief*, if not the sole, end of all the elaborate processes of artificial fermentation is *the production of an intoxicant*, and the destruction of the nitrogenous (or blood-forming) elements of food. Whatever salts or acids of alleged value, medically or dietetically, may remain after the process of 'clearing,' existed in *far greater measure* in the original cereal or fruit from which the drink was made.†

* See F. Schützenberger, *On Fermentation*, chap. ii. (King & Co. London, 1876.)

† Dr Druitt, in his 'Report on Wines,' got up in the interest of the

The following (as determined by Dr Bence Jones) is the per-centage of alcohol contained in samples of the liquors named, as given by the Alcoholometer. No 'natural' wine is stronger than 17 per cent. More than that found, means added brandy.

Port Wine .	20 to 23.	Rum	72 to 77.
Sherry . .	15 to 24.	Whisky . . .	59.
Madeira . .	19.	Brandy . . .	50 to 53.
Champagne.	14.	Geneva (Gin) .	49.
Burgundy .	10 to 13.	Bitter Ale (new)	6 to 12.
Rhine Wine.	9 to 13.	Porter	6 to 7.
Claret . .	9 to 11.	Stout	5 to 7.
Moselle . .	8 to 9.	Cider	5 to 7.

§ 33. In order to exhibit the complete contrast between the 'fruit of the vine,' and the various products of its fermentative or putrefactive destruction, tables of their different compositions are subjoined.

"MEDICAL PROPERTIES AND USES. The ripe FRUIT OF THE VINE is cooling and antiseptic; and when eaten in large quantities, diuretic and laxative. Grapes are very useful in febrile diseases, particularly in bilious and putrid

wine importers, says that "alcohol is a *mere drug*, and is *not* the valuable element in wine." He praises and puffs as the very element of life, certain volatile *aromas* and *scents!* But wines that fetch high prices *exclusively*, or *chiefly*, on account of their flavor and aroma, are of a very limited range, accessible only to the wealthy connoisseur, and quite beyond the reach or appreciation of the general public; so that such refined apologies are practically frivolous.

The *Brewers' Guardian*, monthly shilling organ of the 'Trade,' contains the following advertisement of 'Manbre's Malt Saccharine,' which naïvely exposes the delusion that Beer is nourishing. We have only to observe that no food that is destitute of Nitrogen can form a part of the living body.

"The fermentable saccharine in Malt Worts will *remove* only about two-thirds of the nitrogenous [*i.e. nourishing*] matter it contains. The remainder is principally the cause of beer turning sour. [Because the fermentation goes on.] The use of our Saccharine, in the proportion of one-third Saccharine to two-thirds Malt, WILL REMOVE ALL REMAINING NITROGENOUS MATTER."

fevers, dysentery, and all *inflammatory affections.* In Syria, the juice of ripe grapes, *inspissated,* is used in great quantities in these diseases. (Russell's 'Nat. Hist. of Aleppo,' i. 83.) Grapes have been strongly recommended as *an article of common diet in phthisis* (Moore's 'View of Society in Italy,' ii. Lett. 62); and they certainly contain *much bland nutritious matter,* well fitted for phthisical habits."—(Dr A. T. Thompson: 'London Dispensatory.')

CONSTITUENTS OF 'WINE IN THE GRAPE.'

1. Albumen, a blood-former, plentiful.
2. Sugar, in varying but large amount.
3. Gum: chiefly, however, a mechanical lubricant.
4. Various *odorous* matters, or aromas.
5–6. Malic acid and citric acid in small quantities.
7–8. Phosphorus and sulphur in combination.
9. Bitartrate of Potash (Cream of Tartar).
10. Tartrate of Lime.
11. Water, etc.

"In the inflammatory form of *dyspepsia,* and in pulmonary affections, ripe grapes are eaten in considerable quantities, in Switzerland and other parts of the continent, occasionally with considerable benefit." — (Dr Pereira, 'Treatise on Food,' p. 355, 1843.)

§ 34. When the mingled elements of the grape are 'worked,' they are in great part destroyed. The albumen nourishes the yeast plant which finally settles on its lees; "*carbonic acid* and pure *hydrogen gas* are evolved; *phosphate, acetate, caseate,* and *lactate of ammonia* being at the same time produced in such quantity that the further decomposition of the gluten ceases. But when the supply of water is renewed, the decomposition begins again (under *yeast* action), and in addition to the salts just mentioned, *carbonate of ammonia* and a white crystalline matter resembling mica (*caseous oxide*) are formed, together with the *hydrosulphate of ammonia,* and a *mucilaginous substance* coagulable by chlorine. *Lactic acid* is almost always pro-

duced by the putrefaction of organic bodies."—(Liebig, Org. Chem., p. 259.) As the gluten decays, and the *yeast fungus* is developed, the *Bitartrate of Potash*, in great part, settles, in bottle or cask, as 'crust of wine,' being insoluble in alcohol, *and is thus lost as a salt of the blood.* When the first working is over, and the wine is bottled, we find, on opening it, after a few months, the following constituents, of which those named in italics are *new*:—

CONSTITUENTS OF 'WINE THE MOCKER'—say, *Old Red Port.*

1. *Alcohol*, a powerful narcotic.
2. *Œnanthic acid* (an oily, inodorous liquid).
3. *Œnanthic ether* (of a vinous, unpleasant smell).
4. *Essential or volatile oils.**
5. Bouquet or aroma.
6. *Acetic acid.*
7. *Sulphate of potash.*
8. Chlorides of potassium and sodium.
9. Tannin, and coloring matter from the grape husk.
10–12. Traces of undecomposed sugar, gum, and extractive matter.†

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* *Nicotine*, a frightful poison (one-fourth of a drop will kill a rabbit; one drop, a dog), is one of the class of essential oils; formula, $C^{10} H^8 N$. It is the intoxicating principle of *prepared* tobacco, but was not present in the *natural leaf.* It results, like alcohol, from *fermentation;* several other volatile oils are generated at the same time.

† On the 14th Feb. 1883, Dr C. P. BAHIN, M.A., read, in the Memorial Hall, Manchester, a paper on the Chemistry of Wine. He drew attention to the importance of a knowledge of the chemical properties, not only of wine and its constituents, but of all other articles of consumption, when treating of their physiological effects. Ignorance of this, on the part of some who have made physiology their special study, has resulted in many conflicting opinions, which, instead of enlightening the public, have left them in greater perplexity than ever. The lecturer then described the process of fermentation, the nature and properties of alcohols, acids, and ethers, and the constituents of the *must* of the grape, both before and after fermentation. *At least ten new bodies are formed*—alcohol, tannin, aldehyde; acetic, succinic, and œnanthic acids, with their corresponding ethers; glycerine, carbonic acid, and certain unknown principles forming the so-called 'bouquet.' This peculiar characteristic of the finer kinds of wine was at one time erroneously attributed to the presence of œnanthic ether, found in most

After a time, the alcohol suffers a *slow* decomposition (oxidation), and the wine becomes milder. This, probably, is owing to the gradual conversion of some of the alcohol into *ethers*, by union with the acids. On exposure to air, in a proper temperature, wine will at once enter into the *acetous fermentation*, during which the alcohol *quickly disappears*, and is replaced by vinegar. A more complete contrast between the natural and the artificial wine can hardly be conceived than these analyses present.

Hence alcohol can in no definite sense be regarded as 'a good creature of God'; for, in the first place, it is not constructed *like* food, being neither solid nor innocent; and, in the second, whether good for any proper end or not, it is still an artificial product.

§ 35. In a strict, scientific sense, man can *make* nothing,—he can only *modify;* the ultimate power which effects every change belongs exclusively to that All-pervading Mind in whom we "live and move and have our being." There is nothing done or developed by the creature, which is not also done *by the agency of God* empowering or sustaining it. When man works, however, the result is called *Art.* When we speak of the 'creations' of the poet or the painter, we employ the word figuratively. 'Creature,' therefore, in a strict sense, is the minor relative of which 'Creator' is the major. Hence 'creature' must signify, in this discussion, either some substance which formed a part of the *original creation*, or is still produced in *nature* independent of human aid or agency;—for vital and vegetative nature may be viewed as a 'perpetual creation,' in which the types of all original products are constantly renewed, bearing fruit after their kind. When the original creative act was accomplished,—when the Spirit of God brooded over the face of the waters, and chaos retired before the reign of

wines, either naturally or by artificial addition. He gave some receipts for the manufacture of *artificial port wine, the principal ingredient being cider*, and described the means employed to improve the poorer kinds of wine by the addition of brandy and various coloring matters.

order,—when sun and moon were fixed, and the planets appointed their courses in the heavens,—when the fiat went forth, 'Let Light *be*,' and 'Light *was*,'—when radiant heat cheered and quickened the fresh creation, and animated every living thing,—when silence gave place to praise, and the songs of birds made vocal the bowers of Paradise,—when from the mossy rocks fountains of living water gushed forth, and eastward the silvery stream rolled on,—when "the Morning Stars sang together, and all the Sons of God shouted for joy" at this fresh outburst of creative power, there is no record that breweries or distilleries were planted there!

If we pass from the pages of Revelation to the open and illuminated volume of Nature,—if we search throughout the wide range of growing fruits, and cereals, and roots, for the presence of Alcohol,—there is not a single one in which it can be detected in quantity perceptible to the senses. Creation, growth, maturity,—these are terms which refer to *life;* but alcohol is the outcome of *death or decay*, not of life, growth, or creation. The clusters of the grape especially, are but so many natural air-tight bottles, which we empty by sucking or by crushing them with the teeth. Each grape-bottle contains within it an exquisite apparatus for nourishment and preservation, and is the *only* 'fruit of the vine' which nature 'creates,' and 'matures.' Neither in this nor in any other 'fruit,' WHILE A PART OF THE LIVING PLANT, have chemists ever detected the presence of alcohol; at least, in the records of their multitudinous experiments and analyses, we find no memorial of the discovery.*

* Some years ago a medical man professed to have found a small quantity in a jar of gooseberries! Possibly, but these were neither in their *natural* place nor state; they were severed from the tree, and decaying *in artificial circumstances*, for Nature does not put her 'fruits' into jars and abnormal cupboards. Some one has said that the 'yeast-plant' secretes an *infinitesimal* quantity of alcohol in its cells! *Yeast* doubtless *excites* the vinous fermentation, but fermentation is not *growth;* and the plant itself does not *use* the alcohol. The alcohol

§ 36. But the indications of Nature's design do not terminate here. Even when fermentation is established by the interference of Art, it still requires the continued exertion of human ingenuity to secure the object sought. *The art of the Brewers is, in fact, a battle with Nature's law of decay.* They seek to arrest it *at a certain* point. The sweet juice of the young grain is the natural precursor of the flour in the ripe one. Nature aims to *ripen* her fruits, so as to adapt them to the wants and laws of her animated creatures; or, ceasing to be thus used, she reduces them again to their simple 'elements.' It needs little reasoning to establish the position, that neither *immature*, nor *mouldy* and *decaying* fruits, were designed to be the food of man. Nature exerts her energies and processes in perfecting the gluten, starch, and sugar of the barley; these the Maltster destroys and reconverts into less compound substances. Nature, again, seeks rapidly to change her waste and decaying products into their original elements, fitting them (*as gas and manure*) for the food of vegetables, when they have ceased to be suited to the wants of animals;—the Brewer steps in and thwarts her obvious intentions. "WINES," says Dr Shaw long ago, "having once finished their fermentation as wines, *do not naturally stop there*; but, unless prevented by the care of the operator, proceed directly on to vinegar; where again they make no stop, but, *unless prevented here also, go on* to vapidity, ropiness, mouldiness, and putrefaction. To speak philosophically, the *intention* or tendency of nature is to *proceed* from the very beginning of vinous fermentation, directly, *in one*

is not a *part* of the fungus itself; it is simply an adhesion. As well might dust and poison-germs floating in the air, be regarded as *parts* of 'fresh air.' It is a case of fresh air *fouled*, as blood is fouled with alcohol; and it is *that*, even if we cannot prevent it.

It has been stated that 'wood spirit' (Methyl alcohol) is contained in minute quantity in Oil of Winter-green, derived from the distillation of the *Gaultheria Procumbens*. Well, we will suppose that to be so, and call it Nature's Medicine Chest: it is an oil for wounds and ulcers!

continued series, to putrefaction; and thence again to a new generation; which appears to be the grand circle wherein all natural things are moved, and all the physical, or rather chemical, phenomena are produced." *

Alcoholic wine, then, is no more entitled to be called '*the* FRUIT *of the vine*' than any of the *other* contemporaneous or subsequent products of its decay, such as carbonic acid, vinegar, volatile oils, œnanthic acid, or ammonia. To apply the phrase 'fruit of the vine' to any of the substances resulting from its *decay*, is just the same absurdity as to call *death* the fruit of *life.* † The prevalence of such modes of deliberate speech, is a disgrace to our age and country, and exhibits an ignorance and confusion of thought truly humiliating.

§ 37. "It is a very general error," says Liebig, "to suppose that organic substances have the power of undergoing change spontaneously, *without the aid of an external cause.* The *juices of the fruit*, or other parts of a plant which very readily undergo decomposition, retain their properties *unchanged* as long as they are protected from immediate contact with the air; that is, *as long as the cells or organs in which they are contained resist the influence of the* [*yeast-fungus floating in the*] *air.* The beautiful experi-

* Chemical Lectures. London, 1731, p. 126.

† So strangely slow is the progress of Science in some circles of Society, that we find in the year 1881, a distinguished English Churchman denying that 'fermentation' is 'corruption,' and actually arguing that 'corruption is the *gateway* of life'! Whatever this figure may mean, we know that life is a *continuous* process from seed to plant, from egg to fowl, and that it never springs out of rottenness or corruption. Addled eggs and dead-seeds have no resurrection. Food is *built up* out of inorganic elements into vital-forms, and only *as so built up* are they food: the moment decay or decomposition sets in, they deteriorate as fruit, vegetable, and flesh, and become the agents of disease, not the 'bread of life.' Nor is it accurate to say, that "*de*composition is preliminary to *com*position." Quite the reverse,—we can pull down or decompose nothing, until we have first built something up. Composition *must* precede its own decay—life *must* go before death. The grave is not the door of physical Life, but the *goal* or end of it.

ments of Gay-Lussac [show that] the juice of grapes, expressed under a receiver filled with mercury, so that air was completely excluded, *did not ferment.*"

In fact the grape is plainly constructed with a view to hinder the fermentative process taking place upon its contents. The tannin, coloring, and resinous principles are determined to the coat or husk, for the purpose of forming a skin-bottle impervious to air, and excluding the operation of the external fungi which promote decay. Next to the skin is placed the acid, beyond that the saccharine pulp, then comes the glutinous *central pulp*, protected by a treble barrier from the influence of yeast-charged oxygen. It is in this central part, and in the organic structure of cells and vesicles, that the gluten resides, and it is this nitrogenized substance which is most susceptible of decay from the action of the *yeast* spores; hence, so long as the pulp remains excluded from air and the cells are unbroken, fermentation is impossible. *Man* establishes this condition by the violent crushing or treading of the fruit; not *nature*. Indeed, we perceive in nature the most wonderful precautions for preventing the alcoholic fermentation, and for preserving the 'fruit of the vine' unchanged, as wholesome and nourishing *food* for the use of that being who exerts his utmost ingenuity to convert it into a poisonous *drink!* So beautifully do the plans of Nature, and the discoveries of Science, harmonize with the ancient declaration:—

"THUS SAITH THE LORD, AS THE GRAPE IS FOUND IN THE CLUSTER, AND *one saith*, DESTROY IT NOT,* FOR A BLESSING IS IN IT: SO WILL I DO FOR MY SERVANTS' SAKE, THAT I MAY NOT DESTROY THEM ALL."—(Isaiah lxv. 8, Septuagint Translation.)

* The word *sehet*, translated *destroy*, signifies *corrupt* or ferment (as in Mal. i. 14). The word translated 'grape' by these ancient Jews is *tirosh* in the Hebrew.

III.

THE DIETETICS OF TEMPERANCE.

§ 1. THE important practical question, however, is not, How is Alcohol generated? but What does it do in the healthy human body when introduced there? No one holds that it is indifferent or neutral,—mere 'chip in pottage,'—for in that case, since no one would like it, so no one would take it, much less brew or buy it. Does it, then, act as diet or as drug? as food or as poison? In other words, will it help to sustain health and strength, which are the ends of food?—or will it, on the contrary, impair health and lessen strength? If it really has any 'adaptation to the organism,' then its timely use is no violation of Temperance; but if it is, in its properties, or relations, unsuitable to the normal wants of man, Temperance imperiously dictates *abstinence* from it. These questions can now be answered satisfactorily. The researches and discussions of the last forty years, forced upon the world of so-called 'Science' by the Temperance reformers, have, amidst many changing hypotheses and conflicting theories, left amongst the settled truths of the question a large number of clear principles, plain facts, and demonstrated laws.

§ 2. The EXPERIENCE of many hundreds of thousands of abstainers, often placed under the most crucial conditions,—an experience embracing all regions, and the most varied circumstances of life and labour,—has shown that people are not only as well able to perform the duties and enjoy the natural pleasures of existence without strong

drink as with it, but that their strength is increased, their health improved, and their enjoyment augmented. In England, where Government and Life Assurance statistics are accessible, it has been established, that the health of teetotalers is, on the average, one half better than that of moderate and free drinkers together; and that the value of life amongst abstainers is increased by one-third as compared with the moderate drinkers, or fifteen years on an average life. And this fact holds true, equally, of abstaining soldiers, —in India, China, Afghanistan, the Crimea, Africa, Canada, —of peasants in agricultural counties,—and of artisans in large manufacturing cities.

In India, the percentage of mortality amongst the British troops in one presidency, after an experiment extending over several years, stood thus:—Abstainers, 1; Moderate drinkers, 2; Free-drinkers, 4. The ranks of Temperance men include an *extra* proportion of men (now reclaimed) who *once* were drunkards.

The British and Foreign *Medical Review*, January 1841, gives the following report from Mr Bell, Surgeon to the Cameronian Regiment, at Fort William, Bengal:—

	No. of Liver Complaints.	Mortality.	Consumption of Spirits.
1832.	111		
1833.	140	76	10,000 to 14,000 gallons.
1834.	135		
1837.	82	26	2,000 to 3,000 gallons.
1838.	50	22	

The *South India Temperance Journal* for 1844 records the following facts in relation to the 25th (British) Regiment, stationed at Cannamore:—

241 Teetotalers, in a year, sent sick to the hospital	198 =	80 per cent.
767 non-teetotalers sent	2202 = 286	,,
Teetotalers had of deaths	5 = 2	,,
Drinkers (of all grades) had	23 = 3	,,

In the Crimean war, the Turkish troops, though badly camped and fed, never had a death-rate higher than 5 per cent., even when scurvy prevailed, and the British troops never sank lower than 10. Dr Lyons' Report on the Army of the Crimea admits that the porter rations were *injurious;* while the rum rations were simply *deadly.* The army returns from India illustrate the same truth. In the Bengal presidency, where rum rations were given (of course in moderation), the army had 73 deaths per 1000 over an average of 20 years. In the Bombay presidency, when porter was tried, after a short trial the deaths were reduced to 1 in 50. In the Madras presidency, after a *long* trial the deaths diminished to 38 per 1000. But amongst the Temperance soldiers, the death-rate sank to the normal rate of 11 per 1000. The plain teaching of this is, that spirits *kill* 62 soldiers per 1000; porter *only* 27. Pale-ale, owing to its greater approximation to water, kills about 12 per 1000; or in other words, will double the *natural* mortality.

§ 3. The greatest athletes, marksmen,* hunters, travellers, and soldiers, both in ancient and modern times, have been abstainers. Hannibal and Mohamed, Saladin and Garibaldi, may serve as specimens of warriors, and Livingstone, Waterton, and Dunlop of travellers. The famous fighting king is a good example of the needlessness of alcohol in cold climates.

"True valour was seen in Charles XII, late King of Sweden; that hero of the North who knew not fear, nor that spurious valour and daring which are excited by ardent spirits, *for he never drank aught but pure water.* Of him we may say, that he led a life more remote from death, *and in fact, lived more,* than other men." †

* Angus Cameron, the teetotal rifleman, won the Queen's prize at Wimbledon in 1867, and in 1869, at Edinburgh, carried off the Caledonian Challenge Shield, valued at £500. The winning score [50 out of a possible 60] was two points above the highest score ever before made in the same competition. Many other feats of the same kind have since been performed by teetotalers.

† The testimony of one who knew him well—the celebrated Emanuel Swedenborg—('Economy of the Animal Kingdom,' Part II. No. 295).

'On what foundation stands the warrior's pride,
How just his hopes let Swedish Charles decide;
A frame of adamant, a soul of fire,
No danger frights him and no labours tire;
O'er love, o'er fear, extends his wide domain,
Unconquer'd lord of pleasure and of pain. . .
He left the name at which the world grew pale,
To point a moral and adorn a tale.' *

Sale's Brigade, when exposed to fearful hardship and privation in Afghanistan, was happily beyond the reach of 'drinks,' and enjoyed an unexampled exemption from sickness, crime, and death. The words of Gleig, the historian of the campaign, are, "*No* sickness, *no* crime."

General Napier bore the same testimony as to the advantages of abstinence in India, and Sir RAMSDEN SLADEN, Physician-General of Madras, thus states the result of his tropical experience:—"I have enjoyed an uncommon share of health; but I find I can go through bodily and mental exercise *much better* when I abstain altogether from alcoholic liquors." The following is from the 'Life of Havelock,' the Indian hero:—

"Having been attacked with fever, HAVELOCK says, 'There was nothing in surrounding localities to cause such an affliction; and I attributed it partly to a rather prolonged exposure on one occasion to the rays of the sun, and partly to having, at the suggestion of friends, modified the habits which they deemed too austere for the fatigues of active service, *and consented to drink a few glasses of wine daily*, instead of restricting myself, as I had done for many months, to pure water. The fever was speedily checked; and on the disappearance of its symptoms under skilful treatment, I resolved henceforth to legislate for myself in dietetics, and, resuming my former system, abjured entirely the use of wine. A single example does not prove a rule; but my own experience, as well as that of a few others in the Bengal Contingent, certainly goes to establish the fact, that *water-drinking is the best regimen for a soldier*.' Although after this he was exposed to rain and

* Dr Johnson—'Vanity of Human Wishes.'

sun, and made long and painful marches in a heated atmosphere, and endured cold and fatigue, his health remained firm and unshaken."

The celebrated American generals, STUART and STONEWALL JACKSON, who fought so well in a bad cause, were both abstainers, and ascribed their power of endurance to their abstinence; and no system could be more severely tested than was abstinence from strong drink during the burning heat of their summer, and the freezing cold of their winter, campaigns.

§ 4. Extreme exertion under high artificial temperature is also borne far better by abstainers than by drinkers. Above seventy years ago, the celebrated Dr Beddoes, of Bristol, tried the experiment amongst the anchor-smiths of Portsmouth, and in his 'Hygeia,' records that the abstainers worked far better and with less subsequent fatigue. In the attempt to make the 'Lancaster shells' at Woolwich, three sets of men broke down in the process, so excessive were the labour and the heat; and only when a band of abstainers undertook the work was this 'monster shell' actually made. The London *Times* (Sept. 11, 1867) describing the rolling of the 15-inch armour-plate at the Atlas Works, Sheffield, gives splendid testimony to the physical excellence of abstinence. The slab of iron to be rolled weighed 21 tons. "Sometimes one came on groups of men who were saturating in water the rough bands of sacking in which they were enveloped, before going to wrestle with some white-heat forging; sometimes on men nearly naked, with the perspiration pouring from them, who had come to rest for a moment from the puddling furnaces, and to take a long drink of the thick *oatmeal and water* which is all that they venture on drinking during their labour, and which long experience has proved to be *the most sustaining of all drinks* under the tremendous heats to which they are subjected."

§ 5. A difference of climate, of heat or of cold, does not

appear to make any material difference in the result. In the division of the army sent into Egypt from Hindostan, to aid in opposing Napoleon I., the accidental exclusion of grog became a great blessing. Sir JAMES MACGRIGOR, M.D., says :—

"After crossing the Great Desert in July, 1801, from a difficulty in procuring carriage, *no ardent spirits was issued to the troops.* At this time there was much fatigue duty, which, for the want of followers, was done by the soldiers themselves; they were frequently exercised and were much in the sun; the heat was excessive; in the soldiers' tents in the middle of the day the mercury in the thermometer stood at from 114° to 118°, *but at no time was the India army so healthy.*"

In the army of the German Confederation, when the experiment was made above thirty years ago, amongst 27,000 troops, it was found that the strong country levies from Holstein, Mecklenburgh, and Hanover, chiefly labourers and wood-cutters, to whom the usual grog rations were given, had 90 cases of sickness per 1000; while the city-bred troops, less inured to toil, from the Hanse-towns and Brunswick, from whom they were withheld, had only 42 cases.

In the Temperance Provident and General Life Assurance Society, taking the most favorable adult period, it was found, up to 1866, that the rate of mortality is 11 per 1000, while in other offices, very careful in the selection of their lives, it ranges from 16 to 23 at the same age. In the Provident separate books are opened for the insurance of good lives of *non*-abstainers; but when the quinquennial profits were divided, it was discovered that *one-third* more profit accrued to the teetotaler than to the respectable, limited drinker.* The first report of the Health of Towns

* The late Reports of the Temperance and General Provident Life Assurance Institute, give the most conclusive figures as to the value of abstinence: and it is the experience of nearly half a century. In the *Moderate*-section from 1866 to 1880, the expected *deaths* were 3,761, and the actual 3,754—the calculation being accurate within 7. In the *Abstaining*-section, at the same rate of mortality, the deaths would have been 2,205, but the *actual* deaths were only 1,573—in other words,

Commission in England, shows another striking fact. We refer to a comparison of the statistics of the Preston Temperance Sick Club with that of a large number of others, including a Manager's Sick Club, composed of members living under sanitary conditions superior to those which the majority of working men enjoy.

One thousand drinkers had 23 sick per year, for an average of 7 weeks and 4 days, at a cost per head of 56*s.*; while one thousand abstainers had only 13 sick, for a period of 3 weeks and 2 days, at a cost of 29*s.* per head; so that the teetotalers extend to each other more pecuniary help, and save themselves much protracted pain. Compared with them, there is, in the average community of 'moderate drinkers,' twice as many persons sick, for twice as long a time, and at twice as much expense. This again, amounts to the significant fact, that *abstainers save themselves from three-fourths of the common miseries of mankind.* The pains and depressions of the sick bed are diminished, the cost of sickness abridged, the prolonged and painful nursing of wife and daughter rendered needless, and a vast train of discomforts that attend disease, especially amongst the poor, are saved to the sufferer and his friends. Over the household of the truly temperate, the cloud of affliction rests neither so densely nor so frequently, and while it casts a shadow less sombre, passes quickly away, dispelled by the bursting sunlight of health and hope.

§ 6. The great navigators to the polar regions, both

632 teetotalers refused to fulfil the calculations of the actuaries! Had the numbers of the Abstainers equaled that of the Moderate drinkers, the saving of life in 15 years would have been 800. Mr Hardy, the Actuary, says: "Strip aside the adventitious coloring of the mere money and read the simple and touching tale that lies beneath the facts. Count how much more time is given to the human race—time to improve, time to repent, time to amend. Listen to the home rejoicings of the women and children for the further years granted to their protector. Reckon how many [thousands] more children can be educated into good men and women by the prolonged existence of the sober father. Estimate, if you can, the VALUE of a MATURED CITIZEN who is spared to complete the schemes ripened by experience."

English and American,—Ross, Parry, Franklin, Richardson, Kennedy, Hayes, Hall, and Kane,—have proved the actual perniciousness of alcoholics in high latitudes, where all the powers of life are needed to resist the destructive energies of physical nature. Whatever tends to lower the vital activity, or to depress the heat-generating powers of the living frame, must be specially avoided under the rigorous climate which prevails within the arctic and antarctic circles. Hence the rule of abstinence was enforced by authority, but with undoubted benefit to the health and strength of the men. Of the numerous testimonies of *Experience*, we subjoin two. Sir John Richardson, M.D., one of the most distinguished members of more than one Arctic Expedition, says :—

"I am quite satisfied that spirituous liquors *diminish the power of resisting cold.* Plenty of food and sound digestion are the best sources of heat. We found on our northern journey that *tea was far more refreshing than wine or spirits, which we soon ceased to care for*, while the *craving* for the tea increased. Liebig, I believe, considers that spirits are necessary to northern nations, to diminish the waste of the solids of the body, *but my experience leads me to a contrary conclusion.* The Hudson's Bay Company have for many years entirely excluded spirits from the Fur-countries in the north, over which they have exclusive control, to the great improvement of the health and morals of their Canadian servants, and of the Indian tribes."

§ 7. If alcoholics cannot *give power* in circumstances of such extremity and need, it is simple folly to use them, with such a view, in the ordinary circumstances of life. The late Dr W. Brinton, of London, a man of large experience, frankly admits this truth in his work on 'Dietetics' :—

"Careful observation leaves little doubt that a moderate dose of beer or wine would, in most cases, *at once diminish the maximum weight* which a healthy person could lift. *Mental acuteness, accuracy of perception*, and *delicacy of the senses, are all so far opposed by alcohol*, as that the *maximum* efforts of each are *incompatible* with the ingestion of any moderate quantity of fermented liquid. A single glass will often

suffice to *take the edge off* both mind and body, and to reduce their capacity to something below their perfection of work."—(P. 389, 1861.)

Dr EDWARD SMITH, in his experiments recorded in the 'Philosophical Transactions' for 1859, had proved the same thing of alcohol :—

"It greatly *lessens muscular tone and power*. There is *no* evidence that it increases nervous influence, whilst there is much evidence that it *lessens nervous power*."

Professors LALLEMAND and PERRIN, of Paris, a year later, state the same truth amongst their experimental conclusions :—

"*Muscular power is weakened*, and, in extreme cases, extinguished."

Hence, by adopting Neephalism, a person, as Tennyson sings,

> 'Might gain in sweetness and in moral height,
> Nor lose the wrestling thews that throw the world.'

§ 8. If experience has settled *as a fact*, that men are really more healthy and more vigorous, in body and mind, by abstaining than by using intoxicants, science, by technical and special experiments, has no less certainly determined several elements of the theory which account for the fact. It is now universally admitted that alcohol is not an element that makes blood, out of which is restored or built up the various parts and tissues of the living framework. It has not the proximate elements of nutrition, for cell or membrane, for bone, muscle, nerve, or brain. It cannot, therefore *nourish*.

Baron LIEBIG says :—"Beer, wine, spirits, etc., furnish no element *capable* of entering into the composition of blood, muscular fibre, or any part which is the seat of the vital principle." ('Letters on Chemistry,' p. 57. London, 1844.)

Prof. MOLESCHOTT says :—"Alcohol does not accomplish

any direct restitution, nor deserve the name of an *alimentary* principle." (*Lehre der Nahrungsmittel.* Erlangen, 1853.)

Dr W. B. CARPENTER, in the fourth edition of his 'Manual of Physiology' (1865), says :—"Alcohol cannot supply anything which is essential to the due nutrition of the tissues."

In short, it has no lime and phosphorus for the bones; no iron and salts for the blood; no nitrogen for vital-tissue of any kind; and it is not even a solid, as all *real* food is and must be.

§ 9. A hypothesis was broached by Liebig, in 1843, that since alcohol is not found in the secretions and excretions, when taken in limited quantities (which, however, it is), it must be *decomposed*, *i.e.* burnt in the blood, through the action of oxygen, and by this oxidation supply *heat* to the body, and hence energy or force. To this the author of this Text-book replied at the time: (1) that several experimenters have detected alcohol in the renal secretion, and that it is patent to all, by mere smell, that some of the associated ethers (and probably alcohol itself), with the characteristic *odours* of whisky, wine, rum, beer, etc., rapidly escape from the breath of the drinker; (2) that if, possibly, some of the alcohol is burnt up, it must necessarily be by robbing the blood of oxygen (a fixed quantity) intended, first, to burn up the effete tissues of the frame, and, second, to oxidize the innocent and normal oils and fatty matters in the blood; (3) that *if* and so far as it does that, it must leave a more valuable fuel than itself *undecomposed*, and consequently the body loses heat: while (4) it acts as a nervous paralyser, and in its reaction lowers the circulation; (5) that relaxing the tension of the blood-vessels more blood circulates on the surface radiating more heat, and thus reducing the temperature within;* and (6) at the same time, keeps waste

* Professor BINZ, of Bonn, proved, in 1869, that the essential effect of alcohol was to produce *dilatation of the capillary circulation*: and in 49 experiments on men and dogs, found that in no case was the temperature raised, but in most, sensibly lowered.

matter unduly in the system, whereby the vital tone is lowered, and *diseases of congestion* are set up; and (7) that the experiments of Fyfe and Prout, published in the *Annals of Philosophy*, 1813, clearly show that *less carbonic acid is eliminated* in the breath after the use of wine, and therefore less heat is produced,—which result corresponds to universal experience.

§ 10. In 1846 this fact became admitted by continental experimenters, including Liebig himself, who confessed that alcohol, *if oxidized*, would yield *less heat* than normal food:—

"If 1 part by weight of Sugar of Milk can keep up the temperature of the body at the normal height for 33 hours, then an equal weight of *Alcohol* will keep it up for 65 hours,* and an equal weight of Fat for 87 hours."—(*Animal Chemistry*, 3rd ed., p. 117.)

Thus, taking both cost and consequence into account, the poison Alcohol is above four times dearer than the natural fuel, Oil. Moreover, whatever amount of alcohol is *oxidized*, leaves a proportionate amount of natural food unconsumed; and in some cases compels nature to *protest*, by setting up a disinclination for fermented liquors:—

"When cod-liver oil is administered to persons accustomed to drink daily a certain quantity of wine," says Liebig, "it often happens that the *inclination for wine is diminished*, so that, at last, they can take no wine at all; obviously *because alcohol and fat-oil* in this case *mutually impede the excretion of each other* through the skin and lungs."—(*Ibid.* p. 97.)

The following table contains the different respiratory materials arranged in a series; the numbers express how much of each is required to combine with a given weight of oxygen in the formation of carbonic acid and water; or,

* But *brandy* being the strongest usable form, it must be reckoned as 32½; being half-an-hour in favour of the sugar, and 22 hours in favour of the oil.

approximately, how much of each must be taken, in order, with the same consumption of oxygen (*supposing* it were consumed), to keep the body at the same temperature for equal times.

100 Fat.	249 Cane Sugar.
240 Starch.	266 Spirits.

Hence, while starch and sugar are not only innocent, and brandy injurious, they are also more economical by 20 parts of the whole. 1 lb. of fat is worth as much as $2\frac{5}{8}$ lbs. of dear and acrid whisky, which is *not* burnt in the living body.

"Alcoholic drinks," says Liebig, "are from their price *most costly* materials of respiration. The same effect could be produced in the body by means of saccharine articles of food, at *one fourth* to one fifth of the cost."—(*Familiar Letters on Chemistry*, 1859.)

Dr VIERORDT, of Carlsruhe, says, as the result of experiment:—"The mean number of expirations in a minute is fourteen; that number increases after meals. *The amount of carbonic acid expired diminishes considerably after the ingestion of fermented liquors, and does not return to its natural quantity for the space of two hours.* During moderate exercise at least *one third* more carbonic acid is exhaled with each expiration than during repose."—(*Physiology of Respiration*, 1845.)

In other words, the benefits of *fresh air* and *exercise* are counteracted by the use of alcoholic fluids, and the body is not effectually ventilated.

Professor LEHMANN says:—"We should forbid the use of spirituous drinks, and not prescribe tinctures, which might *hinder* the necessary excretion of carbonic acid."—(*Physiological Chemistry.*)

Dr EDWARD SMITH, F.R.S., says:—"Alcohol does not increase the production of heat by its own chemical action. It neither warms nor sustains the body by the elements

of which it is composed."—(*Philosophical Transactions*, 1859.)

Alcohol, then, hinders the excretion of foul air from the body, and retains effete matter of various kinds—thus promoting, on the one hand, the production of diseases like rheumatism and gout, and, on the other, bilious and enteric fevers; but there is no evidence *yet* furnished which proves that any quantity of alcohol is decomposed in the blood. If it be, where are the oxides?* When steel is oxidized, we find the *rust* in evidence. So far as chemistry can tell us, by experiment and analogy, oxidizing alcohol would produce *aldehyde*, *acetic acid*, and finally carbonic acid and water. But while the latter two have not been shown to be produced in greater quantities, the former have not been found at all after the use of pure alcohol, though their presence is easily detected in the blood when directly introduced through the stomach. If the wood and coal have been here, we say, show us the *ashes*. If the eggs have been consumed, produce the *shells*. So, if alcohol is decomposed in the body, produce in evidence its derivatives. This is a fair challenge; yet one physician, who clings to his theory with singular pertinacity, confesses that after *twelve years' research and experiment* he has not been able to produce this proof. But even he, (the late) Dr F. E.

* "Alcohol is *eliminated* from the body by three channels: lungs, kidneys, and skin. What becomes of the alcohol *not* eliminated? The hypothesis of Liebig (combustion) has not been confirmed by experiments, any more than the assertion of Duchek (1853) that aldehyde and acetic acid are formed out of it, *in* the body. *Masing and others sought in vain for these bodies, and concluded that they pass unchanged;* and Lallemand, Perrin, and Duroy maintain that alcohol may be retained and accumulated in the liver and brain *for a long time*. Böcker has shown in himself *that the excretion of carbon-dioxide is considerably lessened* by the ingestion of alcoholic drinks. Schulinus (Inaug. Diss., Dorpat, 1865) differs from Lallemand, *because* he could only recover a fractional part of the alcohol given to an animal—but what kind of *decomposition* took place he could not determine." (*Cyclopædia of Practical Medicine*. Edited by Dr H. VON ZIEMSSEN, Professor in Clinical Medicine, Munich. Vol. 17. London and New York: 1878. Art. *Poisoning by Alcohol:* by R. BOEHM, M.D., Professor at Dorpat.)

Anstie, in a lecture to the Royal College of Physicians, in August, 1867, is compelled to abandon the notion that alcohol *warms.* He says:—"Alcohol, as has been abundantly proved by the admirable researches of Dr Sidney Ringer, *does not elevate but reduces bodily temperature,* when given in even the largest non-intoxicating doses, except in the case where the temperature is already below the normal standard. There can be no doubt of the correctness of this observation, which I have repeatedly verified."

Experience, special experiment, the quantitative measurement of the fuel and its known power, the lessened oxidized products of combustion, and the test of the thermometer, all unite in the demonstration of the *fallacy* that alcohol is a warming agent; and whatever the science of the future may settle as to the destiny of alcohol, cannot in the least disturb the certainty of *this* fact.*

§ 11. *The end of food is the generation of force, with which man performs the work of life.* But the possible methods by which food can generate power are only three: (1) by the organization of tissue; (2) by the supply of the chemical ingredients promotive of change in the blood; and (3) by furnishing fuel for oxidation, and the consequent production of heat. Anything is food which can do this *without injury:* and nothing is true food that does this harmfully. It is now seen that Alcohol can do none of these things: it cannot make tissue, or supply salts and phosphates, or feed the furnace. Prof. LEHMANN, in his 'Physiological Chemistry,' intelligently says:—"We cannot *believe* that alcohol, theine, etc., belong to the class of substances *capable of contributing towards the maintenance of the vital-functions.*"

If it be not food, however, is it not possibly drink?

§ 12. Drink is needed as the VEHICLE of all vital move-

* The *sensation* of heat is quite different from the *generation* of it. No one, we suppose, believes that the hot feeling of cayenne or mustard, either *gives* heat, or increases it, except so far as the agent inflames the tissue.

ment. Adapted to this end, Providence has given us, in wonderful abundance, what Shakespere calls,—

"*Honest* water, too weak to be a sinner."

Dr W. B. CARPENTER, in his 'Manual of Physiology,' impressively observes, that "Water serves as the medium by which all alimentary material is introduced into the system; for until dissolved in the juices of the stomach, food cannot be truly received into the economy. It is water which holds the organizable materials of the blood either in solution or suspension, and thus serves to convey them through the minutest capillary pores into the substance of the solid tissues. It is water which, mingled in various proportions with the solid components of the various textures, gives to them the consistence they require. And it is water which takes up the products of their decay, and conveys them, by a most complicated system of sewage, altogether out of the system. . . *No other liquid can supply its place;* and the deprivation of water is felt even more severely than the deprivation of food. . . Alcohol *cannot* answer any one of these important purposes for which the use of water is required in the system; whilst, on the other hand, it *tends to antagonize many of those purposes* by its power of *precipitating* most of the organic compounds whose solution in water is essential to their appropriation by the living body."

On the other hand, Alcohol is thus described in the sixth edition of Dr Turner's 'Elements of Chemistry,' edited by Liebig :—"Alcohol is a clear, colourless, mobile liquid. *It is a non-conductor of electricity.* The *odour* of alcohol is agreeable and penetrating, and intoxicates powerfully. . . *Alcohol greedily absorbs water from the atmosphere; and deprives animal substances of the water they contain, causing them to shrivel up. Hence its use in preserving anatomical preparations.*"

These properties render alcohol an agent most hostile, at

once to digestion and to circulation. Two agents more utterly antagonistic in their function than Alcohol and Water cannot be found; for what the one does, the other directly tends to undo. Everywhere 'water' is hailed as a friend by the voices of vital Nature,—in all ordinary and adapted measures. The flower in the garden, the grain in the field, the tree in the forest, unite with 'the cattle upon a thousand hills,' in illustrating the *necessity* and the *benefaction* of this simple and beautiful liquid,—the blood of Nature, the 'water of life'! How marvellous and manifold are its properties! It cleanses, but never pollutes; it aids to nourish, but never starves; it excites to normal action, but never irritates to fever and inflammation. Beyond all other agents, it absorbs heat and circulates it equably throughout the frame, and, in adapted quantity, is always retained until the function which needs it is fulfilled. Hence, while it wastes no force and makes no deduction from the sum total of organic power, it aids the performance of every natural work.

Alcohol, then, contrasted in all its physiological properties with water, cannot rationally be regarded as Drink, any more than as Food, since the one purpose of drink—that of acting as a vehicle or menstruum of digestion and circulation—is counteracted exactly to the extent to which alcohol is introduced into the system of any living thing, whether vegetable or animal. Even the smallest amount of alcoholized water, poured upon growing cress or mustard, will blanch the plant and arrest its growth.

§ 13. When it is asserted 'strong drinks are *nourishing*,' the abstainer is strictly logical in replying, that such an opinion is fallacious, *because*, in the first place, it does not contain the elements of the living tissue; and in the second, it is speedily cast out of the body, in greater or less quantities,—in fact, is treated as an *intruder*. To this the late Dr Lankester unwisely objected: "*Both* water and alcohol are *equally* eliminated from the system, unchanged"!

The objection would be a sufficient refutation of anybody who asserted that "water *nourished* the body *in the sense* of food." Nobody, however, *does* say that of water, though many assert it of alcohol, which is lighter and more volatile! But even from the bare objection two clear inferences arise:

(1) That it is absurd to call either alcohol or water *food*.

(2) That to destroy genuine food wholesale, in order to generate a worthless and pernicious article, is at least as gratuitously wicked as for an invading general to burn down the growing corn, or tear up the ripening vines.

The differences between the natural element of Water, and the artificial Alcohol, still remain. Water fulfils useful, necessary, and blessed purposes in the vital economy, and *goes out of the body in the actual discharge of a beneficent sanitary mission;* while, on the contrary, Alcohol really creates an internal commotion, defiles the vital stream, lowers the temperature of the blood, wastes the nervous energy, impairs the nutrition of the structures, and is finally expelled by the 'Police Force' of the Sanitary System.

§ 14. Still another plea is put forth to justify the use of strong drink by those who love it. "Spirits," they say, "may not be either nourishing or warming, but we do not drink *pure* alcohol; we drink *wine* and *beer*, and these contain other elements, which *are* food." This delusion, no doubt, is bolstered up by the venal testimonies so readily obtained, and so widely advertised, by wine-importers and pale-ale and porter-brewers, who live in riches acquired by the ignorance and demoralization of mankind. The brewers audaciously advertise, for example, that their beer and porter is 'highly nourishing.' Sir LYON PLAYFAIR, C.B., when Professor of Chemistry in the University of Edinburgh, analysed a specimen of this drink, and reported that of blood-forming matter it contained exactly *one* part in 1666 parts! Baron Liebig shows that *the whole purpose of brewing is to get rid of the nitrogenous, blood-forming elements of the grain, and to transmute the useful sugar into*

alcohol. "We can prove," says he, "with mathematical certainty, that *as much flour as can lie on the point of a table-knife is more nutritious than nine quarts* [five *maas*] *of the best Bavarian beer;* that a person who is able *daily* to consume that amount of beer, obtains from it, in a whole year, in the most favorable case, exactly the amount of nutritive constituents which is contained in a 5-lbs. loaf of bread, or in 3-lbs. of flesh." *

Dr Hassal's analysis of 'Old Pale Ale,' from Burton, published by Allsop & Co., will enable a child to see through their impudent delusion. A gallon of it, containing

* *Familiar Letters on Chemistry,* translated and edited by John Blyth, M.D. (Walton & Maberley, London. 1859.)

In the Kensington Museum is an analysis of wines, etc., by Professor Frankland, F.R.S., in which he gives the particulars of one pint of each :—

	Water.	*Alcohol.*	*Sugar.*	*Tartaric Acid.*
Hock . . .	17¾ oz.	2¼ oz.	0 gr.	127 gr.
Moselle . . .	18¼ oz.	1¾ oz.	0 gr.	140 gr.
Pale Sherry .	16 oz.	4 oz.	80 gr.	170 gr.
Brown Sherry.	15½ oz.	4½ oz.	360 gr.	90 gr.
London Stout .	18½ oz.	1½ oz.	281 gr.	54 gr.
London Porter.	19¼ oz.	¾ oz.	267 gr.	45 gr.
Pale Ale . .	17½ oz.	2½ oz.	240 gr.	40 gr.
Brandy . . .	9½ oz.	10½ oz.	80 gr.	0
Rum . . .	5 oz.	15 oz.	0	0
Gin (pure) . .	12 oz.	8 oz.	0	0
Gin (as sold) .	16 oz.	4 oz.	½ oz.	0

The 4 oz. of water and ½ oz. of sugar in gin are *added* by the *retailer.*

Dr Frankland, of course, takes no practical notice of the *infinitesimal* amount of gum, sugar, and salts in beers, and in some wines and spirits. He treats them as matters of trivial importance, not concerning the main question. Add, however, two further *deductions* from the possible infinitesimal uses of these drinks. *Alcohol* is not readily oxidized at all; and if it were, *two ounces* per day is the utmost that can be supposed to be oxidized in ordinary conditions by a healthy *man*, and *one ounce* by a woman. Secondly, *gum* is not digestible. (See Note to § 20, p. 87.) Lastly, turning to *brown*-sherry, it will be seen that coloring matter is a term that *includes* sugar, as it does also in some brandies and *all* rums.

70,000 grains, and costing *2s.*, was found to consist of Water, 65,320; Sugar, 100; Vinegar, 200; Hop extract, 710; Malt gum, 2,510; Alcohol, 1,160 grains. Now of all that, only the *seventieth of a pound* of sugar is food: not the alcohol; not the hop (which is a narcotic); not the vinegar; not even the gum, which passes unchanged through the body.

§ 15. As to Wines, the case is no better. The albumen of the grape is valuable nourishment, but in fermentation it becomes *yeast-fodder*, while the sugar becomes spirit. Dr R. DRUITT, the great eulogizer of the 'light-wines,' is compelled to confess that "*Alcohol is a mere drug;* and although a constituent, is not the valuable one in Wine"!

The salts of wine are also the salts of grapes, where they exist in a more assimilable form, and in greater abundance. The *Lancet* has dissipated some delusions about 'wines.'

"Result of a series of reports upon the red wines of France, the Clarets and the Burgundies, and the red wines of Hungary and Greece.

"The mean strength in alcohol of all the Clarets examined was 9 grains per cent.; of the Burgundies 9⅓ grains—that is, the latter was very little stronger than the former. The mean alcoholic strength of the Hungarian wines was just 10 grains; while the mean strength of the two Greek wines was 11 grains, per cent. Some of the clarets and burgundies contained *added spirit and sugar*. There was no relation between the *quantities of spirit* contained in the several wines and the *price, some of the cheaper containing more spirit than the dearer*. Liebig promulgated the statement that Hungarian wines contained a larger amount of phosphoric-acid than most other wines; and to this circumstance a superiority was attributed to them. The analyses now published afford *no support* to that assertion. It is a common belief that wine possesses highly *nourishing* properties. The nitrogen present in each of the wines tested was determined, and the mean amount of albuminous matter in 1,000 grain measures of the wines was found to be only 1⅓ grain; while in 1,000 grains' weight of lean beef it was 207 grains: that is to say, *the raw flesh of beef contains* 156 *times more nourishment than wine.* Consequently, the amount of nutriment in wine is *insignificant* and *infinitesimal.*"

§ 16. On looking at our bodies we are struck with two kinds of work performed within them, both inextricably associated with our life. (1) The blood and juices within, the solid limbs and tissues we feel, the breath we exhale, the water we expel, and the perspiration which transudes from the skin, are all *warm.* Heat is *got up* in the system, and the thermometer tells us that, in the natural state, our external parts are 98° F., and our circulating stream at 100°. (2) This warm-blood is being continually sent from the heart, that pulsing *life-pump*, whose strokes we can feel and count through all the arteries of the system, to every cell and tissue of the living-house. With the *surplus* of these two sorts of energy, not used by the machine itself, we put power-in-action; that is, we perform (3) *External* work, with feet and hands, under the direction of the will; and, therefore, (4) *Mental* work, of sensation, feeling, thought, volition. How these energies pass from one form to another,—become translated, as it were,—or how they are *correlated*, is only partly known, but of the fact itself there can be no doubt whatever. For example, a person whose heat has sunk several degrees, or whose body has not been nourished for days, or whose frame has been wasted by fever and inflammation, can neither work with his body, nor think or feel with his brain; and, on the other hand, a person who has suffered intense emotion of any kind, whether of pleasure or pain, is incapable of much physical work. The great law holds good, that *all* labour is exhausting, which simply means that *all organic energy is transitory*, and is continually undergoing change or transformation; and hence we must RESTORE THE OLD CONDITIONS in order to realize fresh energy for the performance of work.

§ 17. The NATURE of the machinery or organism concerned in this fourfold work is plain enough, though it has yet many secrets and processes hidden from the eye of science. (1) The stomach, for example, is a primary grate where are

prepared the *fuel*-food for warming, and the *nourishing*-food for building-up. The lungs are at once the bellows which (by *in*spiration) take in the fresh air (or oxygen) for oxidizing the carbon and hydrogen of the food and tissues, or burning it up; and which (by *ex*piration) send out the excess of carbon-dioxide, or foul air, thus serving as chimney and window for the perpetual ventilation of the living house. The arterial system, where the oxygen meets with the transformed food and tissues, is the general *furnace* of the body; and, associated with this system, are liver, intestine, kidneys, etc., which, in conjunction with skin and lungs, are the drains and purifiers of the system, casting forth the waste, effete, or poisonous products of bodily work and change. The daily heat evolved by these changes in the body of a healthy, well-fed adult man, is probably *equal* to raising $5\frac{1}{2}$ gallons of water from the freezing condition to the boiling-point. (2) The great central pump of the heart is a congeries of *muscles*, with adapted valves, for forcing the pabulum of the blood through the whole body, aided by other contrivances. At each stroke of this living-pump, from 5 to 6 ounces of blood are thrown with great power into the arterial tubes, and in the 24 hours of the day it pumps out a quantity, ranging in different persons from 14 to 20 tons! It has been reckoned that this would be equal to carrying from 14 to 20 sacks of coal to the top of the London Monument! As the blood thus courses through the body, the various organs and tissues, by their special affinities, *select* the protoplastic substances similar to themselves, and are thus renewed in their structure,—in other words, take up a *new stock of energy*. (3) With this renewed tissue of bone, muscle, and nerve, and the prepared fuel for burning, external work is accomplished. The bones *sustain* weight and carry energy as levers; the muscles *contract* under a stimulus; the ligaments *hold* fast by the cohesive power of their structural affinity; and so internal, mechanical work is done. And (4) the nerves and nerve-

cells illustrate the higher forms of energy, associated with the soul. Like *telegraph-wires*, they receive and transmit telegrams. They convey a stimulus to the nerves, enabling the organs to perform their function. The brain is the great centre where the sensory nerves which receive messages, and the motor nerves that convey them, meet in a common Sanctuary; where emotion is engendered, and thought emerges into consciousness and will.

§ 18. Now it will be seen, on a little reflection, that as all *work* implies the expenditure of energy, and as power is, like matter, always a fixed quantity, so the various kinds of power exhibited in the life of a human being must be mutually measurable; that is, a certain quantity or degree of one energy can be changed into a certain quantity or degree of another, *and no more.* Wood of a certain texture, for instance, or coal of a certain composition, are known to give out a fixed quantity of *heat*, which again creates a fixed quantity of *steam* or elastic vapour, which in turn does a certain amount of *mechanical work*, and no more. Each condition or element measures the other. So with the body. The food (if used) measures the heat and nutrition; these the work done, or capable of being done, whether of heart or nerves, hand or brain. An important question now arises: *How can the varied kinds of voluntary work be calculated by a common standard?* A man, for example, weighing 150 lbs., works for $3\frac{1}{2}$ hours on the revolving tread-wheel of a reformatory. Although, owing to the turning round of the wheel, he is always in the same spot, his ascending motion does the same sort and amount of work that would be done were he to take *so many steps* up a steep mountain-side. That work, if taken to the foot of Mont Blanc, would carry him up to the height of 7,560 feet. Now this labour can be referred to the standard of heat; being, in fact, chiefly done by that force. So much heat as will raise the temperature of 1 lb. of water 1° F., if directed to the steam-work of an engine, will raise one pound in

weight 772 feet; or, to reverse the illustration, will *lift* 772 lbs. in weight one foot upwards. Hence the man who lifts his own body, weighing 150 lbs., up to the height of 7,506 feet, has really done work equal to raising 7,506 tons *one foot;* or, in the language of science, has done 7,506 *foot-tons* of work.

§ 19. Of course, the whole and sole proximate source of PHYSICAL POWER is to be found in our FOOD, into which this force was put by Divine Providence; that food and wine which 'cometh out of the earth,' and '*strengtheneth* man's heart,' but which derives its *energy* from the sun's rays, interwoven with the cells and structure of plants during the natural process of 'growth.' Thus, as the solar heat which passes into wood is given out as flame and caloric for the boiling of the water in the kettle, or reappears as steam or elastic vapour, when science harnesses it to her *work-carriages*, and compels it to do the drudgery of muscle,—so the solar forces fixed in the food, but liberated in the blood by the action of oxygen, *re-appear as the heat and energy of the human frame.* A small portion, say one-tenth, of food, is required to be *nutritive*, containing some suitable combination of nitrogen, a substance essential to all living structures; but the *bulk* of it must consist of matters of an oily, or a saccharine nature, or starch convertible into sugar.

§ 20. The following tables, modified from those of Professor Frankland, will throw light on the actual worth of various kinds of food, and ought utterly and for ever to dissipate the superstitious belief in the value of alcoholic liquors:—

WEIGHT AND COST OF FOOD REQUIRED TO FURNISH HALF AN OUNCE OF NITROGEN, THE MINIMUM AMOUNT NEEDED IN HEALTH, PER DAY.

Such as one of the following :—	Weight in ounces.	Cost.	Heat value in foot-tons.
		s. *d.*	
Pea meal . . .	15	0 3	2,194
Oatmeal . . .	20	0 3½	3,134
Wheaten bread . .	40	0 5	3,236
Good cheese . .	10	0 6	1,627
Lean beef . . .	12	0 8	667
Potatoes* . . .	120	0 5	4,709
Rice . . .	50	1 0	7,304
Milk . . .	100	1 0	2,446
Cabbage . . .	328	1 8	5,563

It will be observed, from the last column, that many substances of special value as *nutriment*, are less so as *fuel*, or heat-generators, and the reverse. The next table concerns the total *force*-value measured by the power of generating heat, when digested, absorbed, and oxidized.

WEIGHT AND COST OF SUBSTANCES REQUIRED FOR DOING 4000 FOOT-TONS OF WORK IN THE BODY, BY THEIR COMBUSTION.

One of the following :—	Weight.	Cost.
	lbs.	*s.* *d.*
Oatmeal	1⅝	0 4
Fat of beef (or dripping) . .	¾	0 6
Potatoes	6½	0 5
Bread	3	0 6
Lump sugar	1⅞	0 7
Butter	⅞	1 2
Cheese (good)	1½	1 3
Cabbage	15⅜	1 3
Boiled eggs.	2¾	1 8
Arrowroot	1⅝	1 7
Lean of beef	4½	3 9
Isinglass (purified fish glue). .	1¾	25 0

* Valuable, however, for supplying *potash* to the blood, and thus averting scurvy. Lemon and lime juice answer the same end, not by virtue of their acid, but their alkali.

§ 21. These calculations were based upon the experiment of *burning* these various substances in an *artificial* retort, and measuring the heat, but in ale and beer many things exist which are not absorbed by the body, or burnt in the blood, such as gum, hops, and alcohol. But assuming, for the sake of argument, that the alcohol, narcotic hop, and gummy residue of beers, are really consumed in the body, and not eliminated,* what, according to the tables of Prof. FRANKLAND, would be the value of such hypothetical food as compared with natural sources of power?

Guinness' Stout, 6½ bottles at 10*d.* each, would cost	...	5*s.* 5*d.*
Bass' Ale, 9 bottles at 10*d.* each, will cost	... ...	7*s.* 6*d.*

So that, were the constituents of beers ever so digestible, a pound of dripping at 9*d.* would exceed in value 9 pints of Bass's best ale, costing 7*s.* 6*d.*; and 3*d.* worth of oatcake or porridge would generate more power than 7 pints of Guinness' Stout! Though eating beef, ham, and mutton, for the production of 'force,' is a very wasteful method of living, it is economy itself compared with the extravagant and utterly *delusive* plan of gaining power from pale ale or brown stout. This, surely, is a demonstration that the drinker 'pays too dear for his whistle.'

Prof. Johnston, the author of 'The Chemistry of Common Life,' who was a poor physiologist, put forth the notion, that if alcohol was not direct food, it *aided* the digestion and absorption of food. But this is not the fact. As Professors Todd and Bowman justly state, in their great

* See Frerich's *Handworterbuch*, iii. Blondot's *Traité de la Digestion*, p. 297. Simon's *Archiv.* i. Gmelin's *Verdauung nach Versuchen*, ii. Boussingault, in *Annal. de Chimie*, 3rd ser., xviii. Lehmann, iii. Of 50 grains of gum in mixture, 46 grains were found in the excrement, undigested. We know the old traveller's tale of persons in the Sahara living *for days* on gum; just as we know of the Indians, of Orinoco, living for weeks on *clay*. Neither case applies to the ordinary circumstances of man; for if the gastric juice (a fixed quantity, dependent on exercise and change) *does* dissolve any gum when men are *starving*, experiments prove that it will not do so when it has *anything better* to operate upon.

work on Physiology, the essential action of alcohol on animal tissue is such, that if a glass of grog were taken after a mutton-chop, and were *kept* in the stomach, the meat would never be digested. Luckily for the drinker, the spirit is absorbed, mixes with the water of the blood, and passes into the circulation, and thus, after delaying digestion, allows fresh supplies of gastric juice to perform that function. The same essential tendency to retard digestion is common to all forms of alcoholics, from pure brandy to pale ale. Dr CLAUDE BERNARD * has shown that alcohol *brings about a diminution* of *all secretions. This is strikingly so as regards* DIGESTION. He found he could check digestion in the stomach of a dog by introducing alcohol. "If alcohol and food were given together, *digestion began a little later* than in animals who had taken no alcohol. He has demonstrated the same as regards the activity of the secreting glands of the *intestines.*" The experiments of Dr E. Smith, published in the 'Philosophical Transactions' for 1859, also prove that alcohol "interferes with alimentation, and impedes the due digestion of starch." The greatest authorities coincide with these views.

§ 22. The late President of the Royal College of Physicians, Dr PARIS, has well stated the distinction between a food and a stimulant. Of the latter he says:—"In its generally accepted meaning, it denotes any influence which *accelerates* vital movements—but ACTION IS NOT POWER. With the exception of 'vital stimuli,'—such as food, air, water, heat,—the whole range of the *Materia medica* does not furnish a single agent which is capable of *directly increasing the energies* of the body, or of *adding to the general stock of vital power.* Our misconception of the term has arisen from a partial and superficial view of the immediate effects of a few agents, of which *brandy* may be taken as the type. It produces a *temporary excitement* of the arterial and

* Leçons sur les Effets des Substances Toxiques, p. 414.

nervous systems, but this is invariably followed by a *corresponding depression.* All that we have done, then, is to *disturb the balance:* we have ADDED NOTHING TO THE GENERAL AMOUNT OF POWER." *

Sir BENJAMIN BRODIE, F.R.S., Surgeon to Queen Victoria, after a long life of experience, gives, in his 'Psychological Inquiries,' his final verdict thus:—

"Alcohol removes the uneasy *feeling* and the inability of exertion which the want of sleep occasions. But the relief is only temporary. Stimulants do not *create* nervous power; they merely enable you, as it were, *to use up* that which is left, and then they leave you more in need of rest than before" (i. p. 143).

JUSTUS VON LIEBIG says of the moderate drinker:—

"SPIRITS, by their action on the nerves, enable him to make up deficient power *at the expense of his body.* He consumes his *capital* instead of his interest. The circulation will appear accelerated at the expense of the force available for voluntary motion, but *without* the *production* of a greater amount of mechanical force." †—('Animal Chemistry,' 1843.)

His later Chemical Letters have these *dicta:*—

1. "Food should exert neither a chemical nor a *peculiar* action on the *healthy* frame, by which its normal functions are either excited or retarded." [Mulder shows that alcohol does *not* come under this description: and direct experiment has proved that a moderate dose of alcohol excites the heart to 8000 *extra* beats per day.]

2. "The use of WINE is *quite superfluous to man:* for even though it be not always [perceptibly] injurious to health, *yet it is constantly followed by the expenditure of power.* . . These drinks are *consequently* attended by an inward *loss of power*, which ceases to be productive."

3. "SPIRITS, by their action on the nerves, enable him to make up the deficient power *at the expense of his body*—to consume *to-day* that quantity which ought *naturally* to have been employed *a day later.* He draws a bill on his health, *which must always be renewed;* he con-

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* *Pharmacologia*, 9th ed., 1843, pp. 169, 170.

† The significance of this fact will be explained in Chapter IV. when we come to estimate the effect of alcohol upon the heart-beat.

sumes his Capital instead of his Interest ; and the inevitable result is—the *bankruptcy* of his body."

Prof. PEREIRA, in his great 'Treatise on Food' (1843), says :—"Ales are not fitted for ordinary use, *on account of their* INTOXICATING and STUPIFYING qualities."

Dr H. R. MADDEN long ago expressed the truth in an elaborate Essay on 'Stimulating Drinks' (London, 1847):—

"Alcohol is not the *natural stimulus* to any of our organs, and hence functions performed, in consequence of its application, *tend to debilitate* the organ acted upon. Alcohol is *incapable of being assimilated*, or converted, into any organic proximate principle, and hence cannot be considered nutritious. The strength experienced after the use of alcohol is *not new strength added* to the system, but is manifested by calling into exercise the nervous energy pre-existing. The *ultimate exhausting effects* of alcohol, owing to its stimulant properties, produce *an unnatural susceptibility to morbid action in all the organs*, and this, with the plethora superinduced, becomes a fertile source of disease. A person who habitually exerts himself to such an extent as to require the daily use of stimulants to ward off exhaustion, may be compared to *a machine working under high pressure*. He will become *much more obnoxious to the causes of disease*, and will certainly *break down sooner* than he would have done under more favorable circumstances. The more frequently alcohol is had recourse to for the purpose of overcoming feelings of debility, *the more it will be required*, and, by constant repetition, *a period is at length reached when it cannot be foregone*, unless reaction is simultaneously brought about by a temporary total change of the habits of life. I conclude that the DAILY USE OF STIMULANTS IS INDEFENSIBLE UNDER ANY KNOWN CIRCUMSTANCES."

Dr CHARLES WILSON in his admirable 'Pathology of Drunkenness' (Edinburgh, 1855), says :—"No circumstances of ordinary life can render even the moderate use of intoxicating fluids either beneficial or necessary, *or even innocuous.*"

Dr E. SMITH, in his 'Practical Dietary' (1865), says :—

"The proper place for these compounds is as *medicines*, but not as foods, and they should not find *any* place in mere dietetic arrangements.

"Alcohols are largely used by many persons in nursing, in the belief that they 'support' the system, and maintain the supply of milk for the infant; but I am convinced that this is a serious error, and is not an unfrequent cause of fits and emaciation in the child."

Dr MARKHAM, F.R.S., says in the *British Medical Journal*:—"It does *not* prevent the wear and tear of the tissues. None of it, as far as we *know*, is assimilated. It is, therefore, not a food in the eye of science." Even the *Lancet*, Feb. 1871, concedes the whole question in these words:—"At any rate, let there be no misunderstanding about one thing: *force cannot be had without nutritive material*"—and it is simple ignorance, where it is not worse, to affirm that alcohol is nutritive material.

Dr THOMAS KING CHAMBERS, F.R.S., in his Harveian Oration before the College of Physicians (1871), says of alcohol: "Our predecessors regarded it as a fuel to life's flame, augmenting heat, secretion, power. We find it *a damper to that flame.*"

Dr B. W. RICHARDSON, F.R.S., had, some years before, characterised alcohol as being *a shroud*, both to the physical and mental being. In his 'Diseases of Modern Life,' he says, that when the intelligent physician follows the line of its effects all round, *he sees nothing but death, physical and moral death.*

§ 23. But there is a still deeper truth to be proclaimed in regard to Alcoholics as diet—the danger of their use arising from their narcotic and exciting properties, and the silent but sure establishment of a mental slavery in the drinker, which entails conditions and consequences upon posterity, deteriorating to the race, and the opprobrium of civilization. The law of nature is, that men drink to live, but the inevitable, God-appointed *tendency* of Alcoholic-action is to induce a state of brain and mind in which men LIVE TO DRINK. This law, and its reasons, are thus stated by Prof. R. BOEHM, M.D., of Dorpat, in the great *Cyclopædia of Practical Medicine.*

"The *nerve-centres* have their functions stimulated and increased at first, and *then their activity is gradually, more or less perfectly, abolished* for the time. These effects are modified by the quantities of the *poison* taken, by the time during

which the poison works [some alcohols stay longer in the system than others, while the *state* of the organs operated on may be different], so that we get a variety of phenomena, in which sometimes only the stage of *excitement*, sometimes only the *paralytic* stage, or both successively in singular combinations, are presented.

"*The extent to which alcohol may affect the nervous system is by no means restricted.* Its domain is a wide one. If its results are at first limited to the cortical portion of the *Brain*, they may gradually extend so as to embrace almost *all* the central organs. The centres for motion, for sensation, and for consciousness, the medulla-oblongata, and the spinal-cord, may all be involved in the action of this poison.

"Alcohol must be ranked with those narcotics which, after long-continued use, *leave behind them permanent and enduring changes in the bodily organs.* These changes may not always be recognizable by the minute anatomist, *but they may be known very unequivocally by persistent anomalies of function.*

"A certain *tolerance* is established, so that doses *originally potent*, GRADUALLY CEASE TO PRODUCE THE SAME EFFECT upon the [ALTERED] nerve-centres. As the *poison* is the same as it ever was, this [so-called] tolerance must be founded on a *permanent change* in the vital activity [or sensibility] of the organs concerned."

§ 24. We must now resume, for another purpose, the exposition given in a previous page. Power must plainly be stored up in some available form before it can be expended. In the human body it exists as a concentration of cohesive, chemic, organic, and nervous forces, the sum of which is the actual *strength* or capacity of the constitution, (1) for *nutrition* and excretion, *i.e.* health-power; (2) for *endurance*, including resistance of disease; and (3) for *voluntary* work with the surplus. When people are recovering from illness, it is not until the nutritive functions are restored that the strength comes back for working with

the hands or the brain. So, after long walks, the brain is not in a fit state for thinking, because the *surplus*, or accumulated power, has been spent. But the constitution and the food, in each case, expresses a fixed amount of power, just as does the mechanism of a steam engine, with its fuel and steam. All these forces, as a little thought will show, are correlated, and many of them mutually convertible: *i.e.* as one form disappears, it *becomes* another of exactly the same value. So much concentrated sun-power passed into wood or coal in growing, holding its parts together, does, when separated in burning, reappear as light and heat; the excess of heat above the boiling-point passes into steam-power, and that vanishes into mechanical action and attrition, to become once more light, heat, and electricity. The forces of the sun interweave themselves into the texture of the golden grain, and become fixed as cohesion or chemical attraction; bread made from that grain is digested into blood, part transformed into muscle, part into oily and saccharine fuel in the circulation, to be at last decomposed in the performance of the work to which it was destined. Thus we return to our starting-point; for all this merely explains how force is liberated as energy after being temporarily *fixed*, or stored up for use.

Let the reader sketch for himself a little *Essential Man*—the ruder and simpler, the better. Put a small circle (or capital O) for the *Head:* connect this by a short stroke with a much bigger circle beneath, representing the *Trunk;* from the upper part of this draw on either side, a line for the *arms*, and from the under-side two lines for the *legs*—whereby you will have the *Limbs* represented. Here we have *three* essential parts of man's body. Workshop, master's office, and tools; or, to change the figure, we have in the Trunk, the furnace and boiler for getting up the steam; in the Limbs the piston and wheels for using the power generated; and in the Head, the engineer who directs.

§ 25. Let us now suppose the *sum* of a day's *available*

force derived from food to be equal to so many foot-tons. In the normal state the heart, lungs, etc., will use about one-third, leaving two-thirds for voluntary work, *muscular* or *mental.** This, in fact, represents the daily 'talents' entrusted for use,—*the capital of progress*, for the individual as well as the race. How this is economised and applied, is indeed the great and true question both of moral philosophy and political economy. When alcohol is introduced into the body, it is observed to create *an increased internal activity of the vascular system*, indicated by greater, and at first by stronger, *pumping* of the heart, and correspondingly quickened *pulsation* and *breathing*. Can this *extra* work be done *without expenditure of power?* Of course not. *Then, exactly so much force as was put forth in that needless extra work must have been taken from the surplus fund destined for voluntary work*, either physical or mental,—which work represents, first, human progress in wealth and thought, and second, in feeling or enjoyment—for such is the real end of the wonderful provisions revealed in nature. Facts lead us to the conclusion, that irrespective entirely of perverted faculty and blotted work in the world through drink, and looking merely at the question of *diverted force*, a loss is daily sustained equal to *a twelfth part of the entire produce of labour*. Alcohol, in fine, robs the treasury of heaven in the act of defiling the sanctuary of earth.

* Of course, if the force is not used physically, it goes to *mental* work, and is of equal value, often superior; its loss or waste an equal misfortune. If we exclude from the population four millions of Teetotalers, one million persons more who are prevented by circumstances from drinking, and nine millions of non-workers, under or over the working age, we shall have about fifteen millions amongst whom to distribute the alcohol consumed, which will amount to about four and a half gallons per head, per year. This will yield nearly two ounces of alcohol per day. Now, as this induces daily 8000 extra *heart-beats*, and much extra *lung* work on a strong healthy man, it must still more affect weaker and younger people—in other words, it must entail a loss of energy equal to a twelfth of the whole *voluntary* power—that is, it must effect a loss of at least thirty foot-tons of labour for fifteen millions; which equals forty millions of pounds sterling in value; and *to this loss must be added all the sad consequences and enormous costs following from it.*

It is clear from these considerations, that the *Teetotaler* runs the race of life with a far better chance of winning its prizes than the *Drinker* who weights himself in his course, and so ensures comparative failure. If the Temperance men had been selfish, instead of promulgating their doctrine they would have guarded it like a Masonic secret, and quietly used it as a means of acquiring the mastery of the social and political world.

Baron LIEBIG, in his 'Animal Chemistry,' so long ago as 1843, pointed out this truth; but the ruck of medical men seem never to have comprehended its meaning and importance. "The circulation will appear accelerated *at the expense of the force available for voluntary motion*, but without the production of a greater amount of mechanical force." In other words, alcohol robs the system of available power for doing useful work in field, workshop, and study, in order to repel a foreign invasion and cleanse the living-house from the defiling influence of an intrusive foe.

§ 26. Facts have very often established the truth of this statement in striking fashion! Out of hundreds of examples, take three. (1) It was found in the great works of Oakes and Ames, the agricultural-implement-makers of Massachusetts, that under the partial trial of the licence system, their workmen did *ten per cent less work* than under prohibition. (2) Sir Francis Mackenzie, Bart., of Gairloch, in his 'Hints to Highland Tenants,' narrates that the English contractor for erecting the Conon Bridge, having engaged twenty Highlanders, the English navvies gave them a challenge to test their strength and endurance. The work selected was *the excavation of a certain number of cubic yards of earth within a given time.* The English had a table laid out of *beef* and *ale;* the Scotch had only their plain *oatmeal* as food, and a can of *water.* At the end of the day the English had not finished, and were in fact quite used up; while the Highlanders had done all their task, and were moreover so fresh, that they danced their national strath-

spey in token of victory. (3) In *Blackwood's Magazine*, for Jan., 1871, we meet with the following in its 'Narrative of the Red River Expedition.'—"This was one of the very few military expeditions ever undertaken by English troops where intoxicating liquor formed no part of the daily ration. It was an experiment based upon the practice common in Canada, where the lumbermen, who spend the whole winter in the backwoods employed upon the hardest labour, and exposed to a freezing temperature, are allowed no spirits, but an unlimited quantity of tea. Our old-fashioned generals accept, without any attempt to question its truth, the traditional theory of rum being essential to keep British soldiers in health and humour. *Let us hope that the experience we have acquired during the Red River Expedition may have buried for ever this old-fogyish superstition.* Never have the soldiers of any nation been called upon to perform more unceasingly hard work, and it may be confidently asserted, that no men have ever been more cheerful, or better behaved in every respect. *No spirit ration means no crime; and even the doctors, who anticipated serious illness from the absence of liquor, will allow that no troops have ever been healthier than we were from the beginning to the end of the operation.* With the exception of slight cases arising from change of diet, it may be said that sickness was unknown among us.—The leading detachment reached Port Francis Aug. 4. They had done 200 miles in 19 days, having taken their boats, stores, etc., over 17 portages in that time, and having made a good practicable road at all these 17 places."

Thus the latest and deepest investigations into the nature and effects of Alcohol but reproduce the old truth, and give to it a wider meaning than was once attached to it—that

'WINE IS A MOCKER.'

IV.

THE PATHOLOGY OF INTEMPERANCE.

§ 1. A *poison* may be defined to be, "A substance, which, brought into contact with the skin, mucous surfaces, nerves, blood discs, or other animal parts, *disturbs their normal state*, by virtue of some special inherent *quality* or relation." Such a disturbance means, first, some degree of altered *structure*, temporary or permanent; and, second, a consequent altered *function*, which may be either increased or lowered action. Hence, 'Poisons' are usually classed under three general heads: as (1) *Irritant* or acrid poisons, which inflame and tend to destroy the living tissue; (2) *Narcotics* or sedatives, which lessen the action of the nerves, and, if taken in sufficient quantity, destroy action and feeling; (3) *Narcotico-acrids*, which possess the double action of both classes, according to their dose or concentration. Arsenic, Spanish-fly, jalap, and sulphuric acid are examples of the first class; opium, prussic acid, and chloroform of the second; deadly nightshade, *tobacco*, strychnine, and *alcohol* of the third. On this point, Orfila, Dunglisson, Taylor, Christison, and all toxicologists, are agreed.

§ 2. The slightest thought will induce the belief, that the continued *use* of any one of these powerful agents, however disguised or diluted, so long as it produces a sensible effect at all (and who would take it if it did not?) must

tend to alter the natural condition of the organs, and to produce results that, sooner or later, will tell palpably on human life. In the preceding part of this Text-Book, it has been shown, by a series of *facts*, that health, strength, warmth, endurance, and vital power, are all best upheld by abstinence from alcoholics, and that the moderate use of such liquors actually and sensibly increases mortality. Thus experience shows that alcohol is *not* food, but *is* poison.

§ 3. Dr Thudichum, of London, has adopted Voit's notion, and, on theoretical grounds, includes alcohol in a definition of food. Alcohol, he argues, is decomposed in the body to some extent, *therefore* gives out some heat, and is *therefore* food! This begs both the definition and the fact. For even if alcohol were burnt in the body, and made the body warmer instead of colder, it would still be true that, *before it was decomposed, it acted as a poison* upon blood and tissue. Now, true food must not only warm but warm without burning, and not only nourish, but nourish without destroying. Food must answer the end of food *innocently*, which alcohol does not. A true definition of food will give not only the chemical-action, but the physiological-relation.

In 1879 Dr Baer, of Berlin, in his great work on Alcohol, adopts our definition:—"One designates as food those substances which supply the body with energy, such as, under suitable conditions, will produce action. . . These substances must be *oxidizable* or *assimilable* in the system—*i.e.* they must either become a part of the body, *or* replace some of its elements (of combustion)—and neither they, nor the products of their oxidation, must *disturb* the structure or function of any organ." Dr Baer, commenting on Voit's notion that what *retards* change of matter (as bad-air and opium do) is food, thus proceeds:—

"It is just on account of this influence that the most important objection to alcohol lies. Even if living strength *is* produced by any

change it undergoes in the body, it first acts upon the digestive apparatus, upon the organs and functions of the animal body, and upon the nervous system, *not as food, but rather as poison.* By reason alone of this baneful influence, it is impossible to regard alcohol as food, and certainly not as food peculiarly adapted for the animal body."

Dr Baer further quotes from Professor DONDERS, the following conclusive criticism upon the unhappy phrase 'Alcohol is a saving's-box.'

"If Alcohol is indeed a Savings box, *it is one which must be paid for dearly enough.* If the taking of alcohol limits the craving for food, the *life activity* is at the same time decreased, and the man, as a physical and physiological being, is reduced to a lower level. And is it not cruel to allow the labourer wantonly to waste his strength, instead of removing from him the alcohol which only momentarily disguises the impending exhaustion? There can be no display of strength unaccompanied by tissue change. Alcohol is no saving's box for muscular strength, for in time *it utterly destroys it;* apart from this the labourer can obtain, for a given price, a much greater quantity of muscular power from *natural* foods. Alcoholic drinks are the most expensive of foods; what they do give to the body, can be obtained from starchy and saccharine substances at one-fifth the price."

§ 4. Some of the leading physiologists of the day—such as Prof. Lallemand, Dr King Chambers, and Dr Edward Smith—incline to the view that the main action of alcohol is to *depress vitality* by its narcotic action upon nerves and brain. Their view, however, should be held in connection with the fact, that *all vital organs as really resist the first blows* of a narcotic as of an acrid agent; whence it follows that when a narcotic is given in small doses, the reaction will resemble the symptoms commonly ascribed to a 'stimulant' or goad.* It is of little moment what the

* Philosophical physicians are beginning to see this point, on which the writer has so long insisted—that in physiology as in other things, the effect is dependent on *two* factors, and alters with their *quantitative* relations. The *Practitioner* for 1879, in a paper on Aconite in Pneumonia, by Dr RABAGLIATI, has the following:—"Neither is it true to say that 'a moderate dose acts as described, but a large one has only the secondary reaction': for, first, what *is* a large dose, and what a moderate dose? Second, when the dose is big enough, only

agent is called, so long as the fact is perceived that it does not *give*, but calls out and *wastes*, power. A stimulant is not the corn that strengthens the horse, but the whip or spur that induces the animal rapidly to *expend* its strength. It is not the new cash which accrues to a man on the death of a rich relative, but the money which the lawyer has borrowed for you by mortgaging your old farm. It will all have to be paid back again, sometimes with interest and costs. It now remains to trace the chief pathological results of the use of alcohol.

Two series of experiments performed with Bourbon whisky and Sherry wine in April, 1867, and reported in the *Chicago Medical Journal*, are instructive. The whisky was mixed with sugared water, which was an error, because sugar tends to *raise* the temperature, and thus to confuse the experiment.

	Temperature in mouth.	Pulse per min.
Before 4 oz. whisky drunk at 10.30 P.M.	$98\frac{1}{4}^{\circ}$	83
The results at 11.0 ,,	$97\frac{3}{4}^{\circ}$	85
,, ,, 11.30 ,,	$97\frac{1}{2}^{\circ}$	89
,, ,, 12.30 ,,	$97\frac{1}{2}^{\circ}$	85

"The sphygmograph shows, that while the number of beats were increased from 83 to 89 per minute during the first hour, *the force of the heart and pulsations was weakened*, whence a congestion of the venous radicles would ensue."

Professor BINZ, M.D., of Bonn, in his 49 experiments

the primary action is induced, since the patient does not *live* to have the secondary [stimulant reaction]; just as a man exposed all night in the snow has neither inflammation nor frost-bite, since he is killed before he has time to have either. Small and large doses have only *an apparent*, not a real, contrariety of action." So the use of Alcohol is followed by a reaction when there is *resisting* life—but in larger doses it paralyses at a blow. When the relations of the factors differ, the effect differs. A pint of wine will make one man drunk, while it will hardly affect the *hardened* toper: but the primary tendency of the Alcohol is to *depress*. Dr Anstie observes that "in pyrexia (fever) the larger dose may produce less tendency to *narcosis* than the smaller (will show) in other circumstances."

(1869), arrived at these conclusions:—"We started with the conviction that the stimulating influence of the Alcohol was indubitable on the vital properties of the tissues. The results were *not* in accordance with this view. . . Half a glass of light hock, or a small glass of cognac, caused a fall from 0°·4 to 0°·6 in a very short time. Large doses given to a strong poodle, reduced the temperature in $2\frac{3}{4}$ hours, from 38°·4 to 36°·7, while it raised the pulse from 89 to 118. Alcohol induces *dilatation of the capillaries* of various regions, *especially of the head*, with great precision and certainty."

§ 5. Alcohol is so virulent a poison that it can be taken only in the diluted form. A teaspoonful of ardent spirit even will destroy the life of a child, and from half-a-pint to a pint will kill men unaccustomed to its use.* It produces death in such cases by *nervous shock*, not very dissimilar to that of a blow on some susceptible centre, like the ganglionic nerves of the stomach. As consumed in wines, cider, and beer, the violent acridity of the poison is sheathed in ten or twelve times its bulk of water.

"When spirituous liquors are introduced into the stomach," says Dr AITKEN, "they tend to coagulate, in the first instance, all albuminous articles of food or fluid with which they come in contact; as an irritant they stimulate the glandular secretions from the mucous membrane, and *ultimately lead to permanent congestion of the vessels* and to *thickening* of the gastric tissues. In these effects it is impossible not to recognise the operation of an agent most pernicious in its ultimate results. The coagulation is very different from that effected by the gastric fluids, and tends to render the articles more difficult of solution by the gastric

* Oesterlin (*Handbuch der Heilmittellehre*, 1855) records the case of a child, $1\frac{1}{2}$ year old, who had two table-spoonfuls of brandy (which is half water) given to soothe it. Bloody flux, convulsions, lockjaw, and death in nine hours, followed. Roesch (*Henke's Zeitschrift*, 1850) gives a case where two table-spoonfuls of brandy, taken at sips, proved fatal to a healthy girl of 4 years of age, in spite of medical aid.

juice."* "Even diluted, in the form of beer or wine," says Dr LANKESTER, "*it is found* to act injuriously on the delicate membranes of the stomach and other digestive organs. When taken in large quantities in any of the above forms, it acts most injuriously on the stomach, liver, brain, heart, and other organs. . . *It is found* to destroy the quality of the blood, to congest the membranes of the brain, to produce incurable affections of the liver and kidneys, and to effect changes in the muscular structure of the heart, the result of all of which are painful and lingering diseases, or sudden death."† Another result, even when positive disease itself is not generated, is to *mask* the symptoms of disease produced by other causes, to frustrate the aims of proper treatment, and to set the physician's skill at defiance. "So destructive," adds Dr Lankester, "is this agent on the whole body, that large numbers of persons avoid its use altogether, and thus have successfully demonstrated that the use of this agent is not necessary to health." The consequence of this again is, that while *the abstainer has not half the sickness of the moderate drinker*, the diseases to which he is subject are much more amenable to treatment, and require less violent remedies.

§ 6. Alcohol, in even moderate doses, if continued, sensibly alters the character of the blood. This has been shown by a series of experiments and microscopic observations instituted by Schultz, Virchow, Böcker, and others. Professor CARL SCHULTZ (Berlin, 1842) says:—"Alcohol stimulates the vesicles to an increased and unnatural contraction, which deprives them of coloring matter, and hurries them on to the last stage of development, *i.e.* induces their premature death,—not suddenly, but gradually, and more or less according to the quantity of alcohol used. The pale vesicles lose all vital resistance, less oxygen being absorbed, and less carbon being carried out, and the plasma itself

* *Practice of Medicine*, 5th ed.

† *School Manual of Health*, London, 1868.

becomes an irritant to the circulatory and secreting organs." This is the reason why alcoholized blood cannot suitably nourish the body, and how it is especially unfit to promote the healing of wounds and inflamed parts. VIRCHOW (1853) describes, as the result of his experiments in the use of beer, "a decrease of water, an increase of fibrin and of colored clot, which reddened much less rapidly on exposure to the air than normal blood, and *contained many more of the pale blood-discs than is usual in perfect health*, which may be regarded as defunct bodies, no longer capable of their original duty, that of absorbing oxygen." *

BÖCKER also (1854) agrees that this is evidence of partially effete matter kept in the blood. His experiments with Rhenish wine had the effect of *largely lessening the amount of carbonic acid breathed out*, and stopping the excretion of earthy phosphates, thus retaining ashes in the living house and retarding ventilation. As Dr King Chambers says, "There is a general resemblance between these experiments and those with pure spirit, modified apparently in close proportion to the smaller quantity of alcohol and to *the amount of the antagonistic agent*, water, therein absorbed." This is an important truth. All alcoholic liquors are bad *in the degree in which they contain alcohol:* the heavier or more concentrated, the worse they are. Wines, beers, or ciders, are but alcohol diluted, and flavored differently. The last deadly agent of intemperance, of madness, and disease introduced into France, *absinthe*, owes its worst effects simply to the strength of its alcohol. No possible drugs or adulteration can be so bad as this essential and characteristic element.

§ 7. "It is shown by abundant testimony," says Dr AITKEN, "that from excessive drinking the blood becomes

* Dr Moleschott (Müller's *Archiv.*) has shown that when the liver is cut out of frogs they lose their power of breathing out carbonic acid (foul air), and absorbing oxygen (fresh air), *in proportion as these cloudy blood discs increase.*

surcharged with unchanged and unused material, and contains at least *thirty per cent* more of carbon than in the normal state. The order of events by which this comes about is somewhat as follows :—Alcohol is directly absorbed by the blood-vessels without undergoing any change. Part of it is eliminated very slowly as alcohol by the lungs [and skin], by the liver, and by the kidneys, but appears to tarry in largest amount in the liver and the brain ;* another portion is [supposed to be] decomposed. [If so] its hydrogen enters into combination with oxygen, and, with acetic acid [not yet detected, however, if produced], carbonic acid and water are formed. *Oxygen is thus diverted from its proper function*, the exhalation of carbonic acid at the lungs is diminished both absolutely and relatively, and less urea is excreted by the kidneys. All the evidence, therefore, points to alcohol *as causing the retention of substances which ought to be eliminated ;* and [the effect of] this retention of effete matter is still more intensified by the stimulant action of alcohol increasing for a limited period the frequency of functional acts, followed as it is by a *corresponding* depression"† of the nervous system. Prof. Lallemand also observes, that "alcoholized blood contains, during life and after death, a great number of free fatty globules, visible even by the naked eye."

The pathological alterations are : very vivid inflammation of the mucous membrane of the stomach ; accumulation of blood in the right chamber of the heart and the large veins ; congestion of the membranes covering the brain ; and especially of the lungs. Lecanu found in a drunkard's blood as much as 117 parts of fat in 1000 parts ; the highest healthy proportion being $8\frac{1}{4}$ parts, and the usual 3 only !

* Dr Percy, and the French experimenters, made this assertion on very good grounds, but Schulinus has recently performed experiments, in which he seems to have proved that *the blood* of drinkers contained as large a per-centage of alcohol as any other part.

† *Practice of Medicine*, ii. 833, London, 1868. This is our old doctrine of 1843, that "Alcohol robs the blood of oxygen."

Hence, as Dr King Chambers remarks, "Alcohol is really the most ungenerous diet there is. It impoverishes the blood, and *there is no surer road to that degeneration of muscular fibre so much to be feared.* Three-quarters of the chronic illnesses which the medical man has to treat are occasioned by this disease! In *Heart-disease* it is especially hurtful, by quickening the beat, causing capillary congestion, and irregular circulation, and thus mechanically inducing dilatation of the cavities." In fact, alcohol is concerned in producing the peculiar condition of the tissues called 'fatty degeneration,' more than any other agent known.

§ 8. The influence of alcohol upon the blood is strikingly exhibited in its effects upon the milk of suckling mothers. "Alcohols," says Dr E. Smith, "are largely used by many persons in the belief that they support the system and maintain the supply of milk for the infant; but this is a serious error, and is not an unfrequent cause of fits and emaciation in the child." The *Newcastle Express* some years ago reported the proceedings at an inquest at Monkwearmouth, where the surgeon stated that the child "laboured under chronic inflammation of the bowels, and the coroner said there was no doubt the child had died from convulsions arising from inflammation produced by taking the alcohol *in* the mother's milk." Sir A. Carlisle, the celebrated surgeon, said in 1814, of fermented liquors, "The next in order of mischief is their employment by nurses, a common occasion of dropsy in the brain in infants. I doubt much whether *the future moral habits, the temper and intellectual propensities, are not greatly influenced by the early effects of fermented liquors upon the brain and sensorial organs.*" Dr Inman, of Liverpool, in his 'New Theory of Disease' (1861), admits that "through the influence of lactation, children have suffered severely from diarrhœa, vomiting, and convulsions. I have known a glass of whisky-toddy, taken

* *Practical Dietary*, London, 1865, p. 162.

by the mother, produce sickness and indigestion in the child 24 hours thereafter" (p. 44). On the analysis of the milk of the same woman, a few hours before and after the use of a pint of beer, it has been found that the alcohol increases the proportion of water, and diminishes that of the *caseine* or curd, which is the nourishing element; and that the alcohol is very perceptible in the milk.

§ 9. Among the 'conclusions' from the experiments of Lallemand, Perrin, and Duroy (*Rôle du Alcool*, Paris, 1860), are some which show the results of the action of alcohol both upon the blood and nervous system, and prove that moderate excitement is *simply a lower degree of the same kind* of abnormal stimulation which is known as *inebriation*, and that alcohol never *gives power*, but merely *uses it up*.

"The ingestion of alcohol produces upon animals an intoxication that is marked by a *progressive series of functional disturbances and alterations*, the intensity of which corresponds with the *quantity* of alcohol absorbed.

It manifests itself at first by a general excitement; but, by-and-by, the respiration and circulation are relaxed, and the temperature lowered.

Muscular power is weakened and extinguished; beginning at the extremities.

The pathological alterations are: very vivid inflammation of the mucous membrane of the stomach; the accumulation of the blood in the right chamber of the heart and the large veins; congestion of the *meninges*, and especially of the lungs.

We never found, in either the blood or tissues, any of the derivatives of alcohol.

Alcohol is rejected from the vital economy by divers systems of *elimination:* by the lungs, the skin, and the kidneys.

These organs are found to eliminate alcohol after the ingestion of doses very small.

The elimination lasts many hours, *even after an ingestion very moderate.* The kidneys continue the longest to reject.

Aldehyde [a derivative of alcohol], *when* introduced into the stomach, *is* readily found in the blood.

These facts establish, from a physiological point of view, *a line of demarcation* between *alcohol* and *foods*. Foods restore the forces, without the organism betraying, by disturbed functions, or by outward agitation, the labour of reparation, *which is accomplished silently in the woof of*

the tissues. Alcohol, on the other hand, immediately *provokes*, even in a moderate dose, an excitement which extends through the entire economy." *

§ 10. These facts enable us to realize the subtile and varied consequences of the use of alcohol, through the nervous system and brain, upon the mind and actions of men. The forms of mental perversion to which the use of this poison give rise, from irritable temper to outrageous crime,—darkening the perceptions, exciting the passions, hardening the heart, blunting the conscience, and destroying the brain,—are infinitely various, and find their abundant illustration in the records of our legal tribunals. It is not a Text-book but a Cyclopædia that can adequately exhibit them. Booth, the assassin of Lincoln, and the Emperor Theodore, are two of the latest examples on the tableau of modern history.

Pyromania, as well as kleptomania, are two forms of impulse sometimes created, but more often developed, by the action of alcohol. Its use is at the bottom of brain-defect as well as brain-disturbance. Idiots are engendered by a single act of alcoholic excess. It determines the character of the unborn child; it strikes a blow at reason and virtue in the very womb. A drinking father is a fool, and a drinking mother a monster; and but for the *deceptive influence of moderate drinking* these truths would be admitted. Plato, twenty centuries ago, recognised a fact in physiology, when he forbade wine to the newly-married.

The *Spectator* (Feb. 18, 1871), in an able article on 'Women and Alcohol,' has the following remarks:—

"Women of the higher middle class swallow quantities of wine or liqueurs, which keep them in the condition known as *permanent alcoholization*, the most dangerous condition into which a *man* can fall, and, from physiological differences, infinitely more dangerous to a woman. Its effect tends

* From Dr Lees's paper in *Meliora*, vol. iv. (1862).

directly to *diminish nervous power*, that is, in fact, to *obscure the mind*, to *deteriorate moral character*, and to increase the liability to insanity. The doctors have advised the practice they now deprecate. . . It is ruin for women, as it is for men, and for the same reason, because any *narcotizing poison* once in possession of the system *paralyzes the will;* but it is ruin far quicker and more complete. Women depend more upon the will, which the influence of the poison cripples, and suffer more visibly when its paralysis has thrown them back defenceless upon impulse, whether the impulse be kleptomania or concession to solicitations. Why say all this? First, because it is true, and the world gains by any kind of truth the statement of which does not tend to increase the evil, as happens in the case of *lust* and *cruelty;* and secondly, because we believe it possible for the profession which has partly caused and now fears the evil, to help society to the remedy. It could very easily do one important service—*prohibit altogether*, as the *Lancet* has in over-reticent phrase advised, *the use of alcohol by girls under* twenty-one [years of age]. They should have *none*, simply. It should be 'good form' for them to be *absolute teetotalers.* They do not care for the flavour of wine. They, like the Madrasees, 'no drinkee for drinkee, but drinkee for *drunkee*,'—that is, for the sake of stimulating effect; and they should be compelled, *by household opinion*, to go without altogether. Let the doctors teach everybody a little more truth about diet."

§ 11. But the use of alcohol is not only the teeming fount of the sad idiotcy which disgraces and depresses our boasted civilization—as truly so in highly-educated Massachusetts, as in the slums of Glasgow, Manchester, or Liverpool—its moderated use is the real cause of so many *ill-balanced minds,* neither insane nor sensible, who are destined to make failures in life, and become the centres of misery in many circles. It is an undoubted fact, exemplified in the history of thousands of families, that the children born after the

parents joined the Temperance Society, are not only physically healthier, but mentally *brighter*, and morally *better*, than those born before.

In Dr E. Smith's experiments upon himself and friends, a moderate dose *disturbed the mind* in from three to seven minutes: "lessened consciousness and the perception of light and sound, and the power of co-ordinating muscles. After this period the effect diminished, as shown by increased consciousness and the perception of light, *as if a veil had fallen from the eyes; nevertheless, the last power to be completely regained was consciousness.* Spirits made us very hilarious and talkative in ten minutes, and during twenty to twenty-five,—so much so that my friend was altogether a king. But as minutes flew away, so did our joyousness; and little by little we lessened our garrulity, and felt less happy, until at length, *having gone down by degrees*, we remained silent, almost morose, and extremely miserable. Then, indeed, we felt the horrors and the sorrows of the drunkard's lot, and saw *with a clearness which can only be perceived by such experience*, how certain it is that he must again drain the intoxicating cup. In addition, *every mental perception was darkened;* and the dreaminess, which is not an unpleasant feature of it, is a condition in which neither thought nor imagination acquires power." (*Phil. Trans.* 1859.)

An agent with such tendencies as these can hardly be regarded as a friend of man or God. By necessary law, it is thus seen to be the seed of inordinate appetite, creating and fostering a passion for itself, which grows with what it feeds on. The sole issue of its use is immorality and sin; ending in that frightful condition of moral slavery, confirmed drunkenness, when the rational *will* is abolished,—a condition which for ever debars its victim from reaching

> "That tranquil height
> Where wisdom purifies the sight,
> And God unfolds to the humble gaze
> The bliss and beauty of His ways."

§ 12. It remained for Professor Parkes, and Count Wollowicz, of the Netley Army Hospital, to give (in the 'Proceedings of the Royal Society,' vol. xviii. 1870) a very complete scientific explanation of these facts, in perfect harmony with what we have taught on this subject for the last forty years: a demonstration so convincing, even to London editors of newspapers, that the *Spectator* (quoting the authority of Dr Anstie's *Practitioner*) announces that $1\frac{1}{2}$ oz. of alcohol is the *maximum* that can be consumed by a strong man without *perceptible* mischief; and that $\frac{3}{4}$ oz. is the outside that a woman can take,—"beyond that being *mere injury*, as much injury as a slight nervous shock per diem would produce." *

The experiments were performed upon a healthy soldier of 26 years of age. Every precaution was taken to make the circumstances as much alike in all the experiments as possible. We append the chief general conclusions.

"One and two fluid ounces of absolute alcohol given in divided quantities in 24 hours to a perfectly healthy man seemed to increase the appetite. Four fluid ounces lessened it considerably, and larger quantities almost entirely destroyed it. On the last day of alcohol the man was three-quarters of an hour eating eight ounces of bread, and could hardly do so. Had he been left to his own wishes the amount of food taken would have been much diminished.

It appears, therefore, that in *this* individual some point near two

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* This savant, however, does not say how long smaller injuries may be going on *before* they are found out through some serious symptom; nor does he say whether they can be removed as *suddenly* as they are supposed to come. Writers who assume that the *beginnings* of injury are always visible, are to be admired for their surprising ignorance. One thing is certain, that the *Practitioner* did not care to notice a very emphatic statement of the experimenters themselves, viz. "*Whether even a smaller quantity might not be hurtful if it were continued day after day*, the experiments do *not* show. It is quite obvious that alcohol is not *necessary* for him (the subject of the experiment); that is, *every function was perfectly performed without alcohol.* Even one ounce produced a decided effect on his heart; and perhaps, if continued, would eventually lead to alterations in circulation and to degeneration of tissues. *It is not easy to decide what would be moderation.*"

fluid ounces of absolute alcohol is the limit of the useful action on appetite; but it is possible that *if the alcohol had been continued* a smaller quantity would (ultimately) have lessened appetite.

In *other* healthy persons it may be different from the above; in most cases of disease, when digestion is weakened, it seems probable that *a much smaller amount of alcohol would destroy appetite.*

The average number of beats of the heart in 24 hours (as calculated from eight observations made in 14 hours), during the water period, was 106,000; in the alcoholic period it was 127,000, or about 21,000 more; and in the brandy period it was 131,000, or 25,000 more.

The highest of the daily mean of the pulse during the water period was 77·5. If instead of the mean of the eight days, 73·57, we compare the mean of 77 beats per minute, with the alcoholic days, so as to be sure not to *over-estimate* the action of the alcohol, we find :—

9th day, with one ounce of alcohol the heart beat 4,300 times more.
10th day, with two fluid ounces, 8,172 times more.*
11th day, with four fluid ounces, 12,960 times more.
12th (fever) day, with six fluid ounces, 30,672 times more.
13th day, with eight fluid ounces, 23,904 times more.
14th day, with eight fluid ounces, 25,488 times more.

As there was ephemeral fever on the 12th day, it is right to make a deduction, and to estimate the number of beats in that day as midway between the 11th and 13th days, or 18,432. Adopting this, the mean daily excess of beats during the alcoholic days was 14,492, or an increase of 13 per cent.

The first day of alcohol gave an excess of 4 *per cent., and the last of* 23 *per cent.;* and the mean of these two gives almost the same percentage of excess as the mean of the six days.

Admitting that each beat of the heart was *as strong* during the alcoholic period as in the water period (*it was really more powerful*), the heart on the last two days of alcohol was doing *one-fifth* more work.

Adopting the lowest estimate which has been given of the daily work done by the heart, viz., as equal to 122 tons lifted one foot, the heart during the alcoholic period did daily work in excess equal to lifting 15·8 tons one foot, and *in the last two days did extra work to the amount of* 24 *tons lifted as far.*

The period of rest for the heart was shortened, though perhaps not to such an extent as would be inferred from the number of beats; for each contraction was sooner over.

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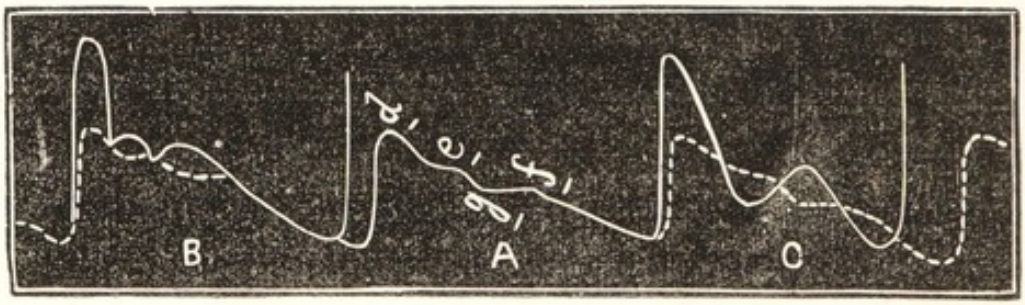
* By printer's mistake, as we pointed out to Dr Parkes, this got printed as 1,872 : and some authors continue the error.

The heart on the fifth and sixth days after alcohol was left off, and apparently at the time when the last traces of alcohol were eliminated, *showed in the sphygmographic tracing signs of unusual feebleness;* and, perhaps, in consequence of this, when the brandy quickened the heart again, the tracings show a more rapid contraction of the ventricles, but less power than in the alcoholic period. The brandy acted, in fact, on a heart *whose nutrition had not been perfectly restored.*

The *peripheral* circulation was accelerated, and *the vessels were enlarged;* and the effect was so marked as to show that this is an important influence for good or for evil, when alcohol is used.

Referring only to this healthy man, it is clear that the amount of alcohol the heart will bear without losing its healthy sphygmographic tracing *is small,* and it must be supposed that some disease of the heart or vessels *would eventually follow* the over-action produced by large doses of alcohol."

§ 13. As this topic is of great importance, we will here endeavour to explain the matter, and illustrate it by diagrams, showing the disturbance produced by small doses of alcohol.



In interpreting the pulse-tracings written off by the sphygmographic lever, one end of which is accurately adjusted to the artery at the wrist, we have to consider—

1. The *force of heart-beat* expanding the arteries.
2. The *resistance of arteries* to the expansion.
3. The *effect* of the onward-flowing blood wave. Any variation in these conditions will affect the force which moves the lever, and determine the pulse-tracing—*i.e.* the heart-beat may be quick or slow—the tone of the vessels strong or weak—the balance between the two forces equal or unequal.

At A we have the *normal* tracing of health, which is continued in the dotted lines. The line of ascent is nearly vertical, being produced by a vigorous beat. The *first primary curve* (*d*) is sharp and acute, the heart-force and arterial-tension being balanced; the first secondary curve (*e*) represents the effect of the blood flowing onwards after an instant's recoil of the artery-wall has produced the first notch. The line of descent, taken as a whole, is gradual and long, inasmuch as the tension is good and the heart's contractions slow. The second or aortic notch (*g*) corresponds to the *pause* between the double 'beat' of the heart, and indicates momentary slackening of blood-wave and tension. The *second secondary curve* (*f*) corresponds to the second or diastolic action of the heart. The stronger the heart acts, the greater will be the length of line of ascent, but this will be limited by the tone (or tension) of the vessels; if this and the heart-beat are good, while the ascent will be only of moderate height, the descent will be long and gradual, and but faintly marked. If heart be strong and tension weak, the ascent will be long. If heart be weak and tension normal, a short vertical line of ascent will be formed; if both heart and tension weak, then there will also be a short ascent, but the line will slope much, and assume a rounded apex, while secondary rises and notches will be marked generally where tension is low and heart weak. The apex of the first curve shows the *balance* between arterial-tension and heart-power. An equal balance (as in health) results in an acute angle being formed at point of junction of line of ascent and descent. If arterial expansion be insufficient or arrested (as in ossified arteries) the descent is *delayed*, and a square apex produced. To sum up; in health the pulse-tracing should be of moderate height with a nearly vertical ascent, an acute apex, *a gradual and long descent*, and *two faintly marked secondary waves.*

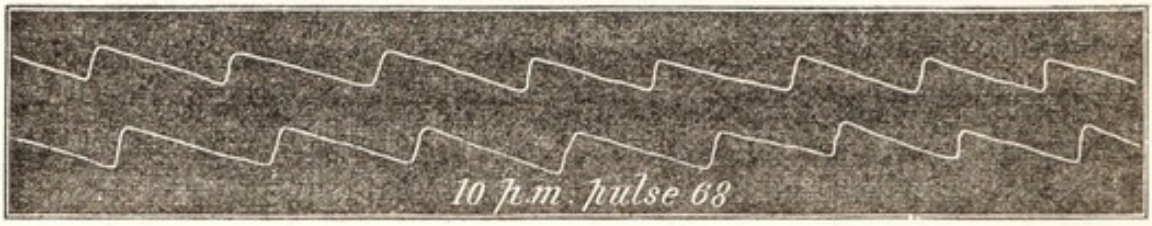
The *abnormal* pulse is shown by alteration in one or all of these points.

In fever we find a pulse called *dicrotous*, in which the first ascent is higher than natural, the first secondary curve (corresponding to the blood-wave) absent, and the aortic notch much deepened, making the third rise very prominent, whilst the whole phenomena common to one complete beat of the heart are written off shorter, *with less gradual descent—i.e.* the heart beats faster, does its work in shorter time, whilst tension is usually lower than in health.

This pulse is the result of any large dose of alcohol, or of any great external heat, such as that encountered in a Turkish bath. This is shown at B, contrasted with the *healthy* tracing shown by the dotted line.

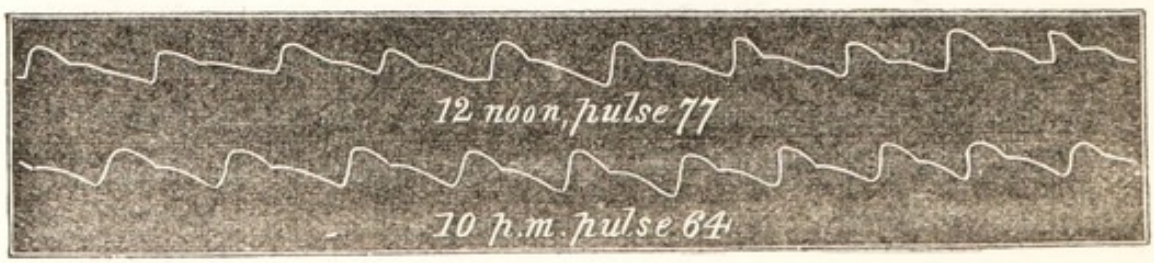
The diagram at C represents the pulse of *fatigue*—first elevation very high, heart acting rapidly and irritably with tension unsustained—the first secondary rise not wiped out, as in alcoholic pulse, but, as well as other secondary curves and notches, *sharper than natural.* The tracing slightly shorter than in health, but line of descent not so gradual.

Eighth day of Water drinking.



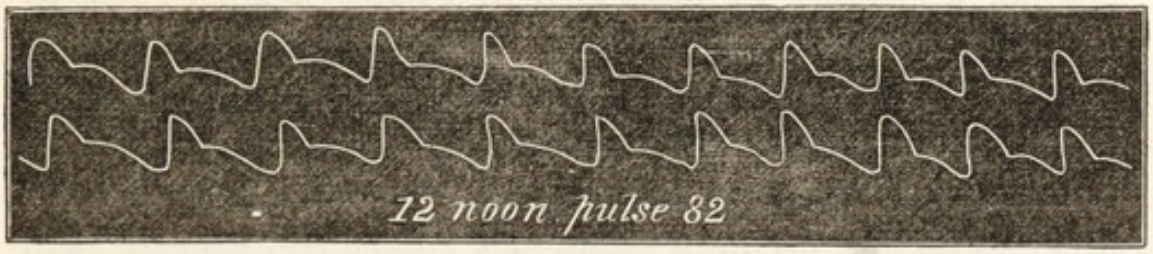
Nearly a normal pulse. Heart acting slowly, with fair tension, as shown by long line of descent, and not very rapidly or strongly, otherwise the ascent-line would be higher and more vertical. Absence of excitement, and *ample pause for rest and nutrition.*

First day of Alcohol drinking.



Alteration in form is due partly to frequency: the first curve better marked, showing quicker beat, the summit rounded indicating somewhat labored systole with fair tension—the second rise from blood-wave *but little* altered, though perhaps slightly increased; the whole set of actions is completed in *a shorter period*, while collapse after expansion of diastole, which forms third curve, is more rapid than in No. 1.

Third day of Alcohol drinking.



This tracing has the character of *fatigue* in some respects. Pulse more sub-dicrotous—*irregular and disturbed.* Increase in frequency, with shorter tracing and *more abrupt collapse* after diastole—the inequality and difference of form in the curves indicating a varying power of heart's action. *Heart doing more work in a given time—and period of rest for heart shortened.*

§ 14. Some subsequent experiments with *wine*, showed that there is no pathological difference between fermented liquor and pure alcohol. Alcohol *is* alcohol, and fermented liquors are only alcohol *disguised* by colors and flavors. Dr DUJARDIN-BEAUMETZ and Dr AUDIGÈ in their 'Experimental Researches,'* have fully vindicated our original position that alcohol in fermented liquor, or mixture, is not modified for the better. They say: "Dilution with water greatly increases the poisonous properties of ethylic Alcohol. . . Dilution with glycerine and water increased still more its toxic power, death occurring in 40

* Recherches Expérimentales sur la Puissance Toxique des Alcools (Paris, 1879).

hours, with 6 grammes per kilogramme of the weight of the body, with a decrease of temperature of $4\frac{1}{2}°$; partly due to the poisonous properties of glycerine. *Butylic* alcohol ($C_4H_{10}O$) caused death in 8 hours with a decrease of temperature of 16°. The alcohol of the fine wine of Montpellier had a stronger toxic action than *pure* ethylic alcohol. The methylic alcohol must be classed with the ethers and chloroform." When divines talk of '*alcohol combined*,' * they simply reveal their utter ignorance of what they write about. It is blunder appealing to imbecility, in a battle against facts, to uphold a system of superstition, sensuality, and sin. †

§ 15. The pathology of the Mind is of as much greater importance than that of the body as the end is greater than the means. Whatever some foolish poets may have sung, it is certain that no more pernicious fallacy can prevail, than the opinion that Alcohol is an aid to thought. It is, above all and beyond all, a *Brain poison.* This is the fact that has been always apparent—its power to disturb mental phenomena. But drink cannot affect the soul *otherwise* than by disturbing its organ. It, therefore, literally 'steals away the brain,' and thus brings to one common level peer and peasant, philosopher and fool. Its sole virtue is, that it is no respecter of persons. Dr BAER well observes that all persons who have relied upon Alcohol as a brain-restorer have discovered, too late, that it is really a brain-destroyer.

"Undisturbed reflection and quiet comparison, critical regard and deliberate judgment, impartial observation of facts and the weighing of their relationships—such are the mental processes to which mankind owes the entire treasure of positive knowledge, including the progress of natural science, technique, and industry; *such processes are certainly not promoted by alcohol.*"

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* See the most uncritical of all pamphlets, 'The Principles of Total Abstinence Purified' (London, 1865). Almost every possible error, in criticism, chemistry, and physiology, is perpetrated.

† For the latest verdict of Medical Science see the six pages of extracts from the great *Cyclopædia of Medicine* given in our 'Reply to the Clerical World' (p. 93).

But if it does not strengthen the intellect, it excites the passions, and dissolves the curb of self-control. The revolting development of sensualism and ferocity in Paris during the reign of the Commune has been universally connected with the use of Wine and Brandy, but it is only a milder type of the same influence operating at home in a chronic form, which generates our madness, our crime, and our jingoism. Stimulants and Narcotics necessarily tend to sensuality and immorality by a double action—1st, by *reducing* the normal energy of our nature which supplies the condition of a happy life; and 2nd, by *narcotizing* or deadening what faculty is left. The higher and more complicated organism of thought is the first to suffer loss, while the animal instincts are brought into intenser play. "Substances," says HERBERT SPENCER, "which, like opium and hashish, *exalt the rate of molecular change* in the nervous centres, so intensify the feelings and ideas as to *cause illusions*. . . Alcohol, ether, chloroform, nitrous oxide, etc., when their anæsthetic *effects* begin, the *highest* nervous actions are the first to be arrested; and the *artificial paralysis* implicates, in descending order, the lower or simpler nervous actions. *Incipient intoxication* [being 'jolly'] shows itself in a failure to form involved and abstract relations of ideas." *

Abstract ideas are, in fact, the basal structure alike of religion, philosophy, and science. In plain words, the drinker cannot *reason*—he only fancies and feels! Hence the danger lurking in our large cities, and even in country villages cursed with beer-shops. Wages being misapplied, the men are insufficiently nourished, badly housed, live in a state of *malaise* (or bad feeling), and consuming Alcohol and Tobacco in ever-increasing quantities, the brain gets into a state of *chronic excitement and weakness*, so that the people become the prepared victims and ready dupes of designing men,

* 'Principles of Psychology,' vol. i. pp. 610–11, etc.

who preach impossible and wild methods of bettering the condition of society.

§ 16. Thus physiology teaches the patriot the important relation of Temperance to the Community. Until that is understood, politicians legislate in the dark, the fruits of which are disappointment and despair.

VOLTAIRE (1730) says: "We live in Society; consequently there is nothing truly good to us, but what is for the good of Society. Virtue consists in the *knowledge* of what men owe to each other"—and the doing of it. The *fruits* of any example, custom, or act are plain enough, and should determine our conduct. If they are good, continue them—if bad, abolish them. "A saint may be good to himself, but not to us."

HELVETIUS (1760) sensibly says that "Virtue is nothing more than the desire of *public happiness*, and the actions it enjoins are the means it employs to accomplish that object." If, therefore, temperance is a virtue, we have only to determine whether the use, or the disuse of anything *as a matter of fact*, is most conducive to the public good.

J. G. H. FEDER, the anti-Kantian writer (1784), defines Virtue to be "a predominant propensity to do what is right; including *strength of mind to follow that knowledge* rather than inclination." This is very near the mark: and all that lovers of virtue need, is the modesty to learn its *law* as well as its aim. The bare wish to do good, will not do the work of the adapted action. Man's 'opinion' is not the channel of God's power. The *truth* is the real sword of the Spirit, and he who conceitedly neglects to seek that truth, and seek it patiently, puts himself in the place of God, preferring a will-o'-the-wisp to the light of day.

V.

THE MEDICAL QUESTION.

§ 1. Is Alcohol a curative agent? Were we to answer this question in the affirmative, it would really be, to the impartial mind, an argument against its common use. Why take a *cure* when we have no *complaint?* Medicines are not for the healthy but the diseased; and that which makes them medicines at all, is their peculiar power to produce *extraordinary* changes in the body. Physic and food are contraries, related respectively to opposite states—disease and health. If alcoholics are ever useful as medicines, or even as adjuncts to treatment, certain conditions must be observed in their use, which are generally overlooked. Sir THOMAS WATSON, M.D., F.R.S., in his address to the Clinical Society, Jan., 1868, said:—"Our empirical treatment is *a shame to us!* We prescribe medicines every day, of the action of which we know nothing, the belief in their virtue being held in vague tradition, or founded on the wildest theory. Our profession is emphatically fluctuating on a sea of doubts about questions of the gravest importance. Every one, now-a-days, acknowledges that *it is only by directing the natural forces of the body* that we can *reasonably* hope to govern its diseased actions." The following can hardly be regarded as unreasonable conditions:—

(1) The *disease* must exist and be understood, before the remedy, or supposed remedy, can be administered.

(2) It must be known that the alcohol is the essential part of the remedy, and not a mere accident. For example, when brandy and hot water are given for spasm, the remedial effect is due to the heat as much as to the narcotic.

(3) The nature and strength of the liquor must be known, which it rarely is. Besides, being often adulterated with powerful drugs, these may occasionally confer the benefit erroneously ascribed to the spirit.

(4) Above all, the exact condition of the patient, and the time for the administration of the medicine, with all the proper tests, must be reduced to a system and science; otherwise the prescription is mere quackery. Are these requirements fulfilled?

(5) Lastly, careful and comprehensive experiments must be made in regard to the administration of alcohol for certain classes of disease, showing the benefit of the practice by the *lessened* mortality. What are these?

As respects the *first* condition, alcohol is generally prescribed where the symptoms are obscure, or where other things have failed, with the mere chance or hope that the case may be hit. In some instances, the nature of the disease, and hence the remedy, has been entirely mistaken.* Dr Aitken † supplies an illustration worth noting: "The term alcoholism is used to denote various symptoms of disease attending *morbid processes of various kinds* capable of being traced to the use of stimulants containing alcohol. The term is used in the sense analogous to that in which we use the terms mercurialism, ergotism, narcotism, and the like; the agents inducing these specific states *acting after the manner of a cumulative poison.* The progress of modern science has distinctly demonstrated the poisonous action of alcohol. In 1828, it was theoretically advanced by Leoveille that *delirium tremens* consisted in an *exalted* state

* For the showing out of the *whole* subject, see Dr Lees's work—*Is Alcohol a Medicine?*

† *Practice of Medicine*, vol. i. p. 828.

of the vital powers of the brain, excited by the molecules saturated with alcohol. . . But now it is a matter of fact, determined by direct experiment as well as by observation, that alcohol is absorbed directly into the circulation, and is capable of acting *as a direct poison* upon the nervous tissue through which the *infected* blood circulates." The old mode of treatment, with opium and drink, killed, in Edinburgh, 25 per cent., in Glasgow, 50 per cent., while now hundreds of persons have been treated with warm baths, nourishing food, no alcohol, no opium, and not one per hundred dies. *

§ 2. As to the *second* condition, especially in ailments affecting stomach, liver, and kidneys, it has been found, on excluding porter and some wines, that the success of the treatment has been increased. Accidental elements of cure are frequently overlooked, and the credit given to agents which really opposed the cure. Beer and porter are multifarious compounds. Dr B. W. Richardson "had been asked his opinion with regard to the value of alcohol in disease. He knew of no distinct series of observations made with what was *known* to be ethylic-alcohol. They would have heard of alcohol being recommended in fevers in the form of wine, brandy, and other spirits, but, in truth, there was no evidence as to the *quality* of these agents. As to the *general* use of alcohol in disease, he was quite open to say, that *every form of disease would be better treated without alcohol than with it.*"

* Mr Hutchinson, of the London Hospital, however, reports some cases which did well with beer. This was owing, not to the alcohol, but the drugs. He "rarely employs opium or *spirits*. In private practice, he reports the best *narcotic* to be bottled stout, but for hospital use common London porter is *sufficiently stupifying*, if taken in quantity." —(*Medical Times*, Nov. 21, 1868.) M. Gosselin, of Paris, observes, that "one of the contra-indications to the use of chloroform is the *inveterate use* of alcoholics *so common* in the *classes brought* to the hospitals. In those subjects, who have passed their fiftieth year, anæsthetics should either be abstained from, or employed with the greatest circumspection."—(*Gaz. des Hop.*, Oct. 31, 1868.)

Here is a letter from an anti-teetotaler—a Yorkshire Weydale squire with a malt-mania—which exposes well enough the stuff that doctors prescribe and patients drink. It is addressed to the *Pall Mall Gazette*:—

"SIR,—Somebody sent me the other day a copy of the *Brewers' Journal* of May 15, '70. Here is a list of the chemicals advertised in it for the use of brewers:—Bisulphited isinglass, soluble isinglass, sulphate of lime, bisulphite of lime, lupulin, soluble dry precipitated isinglass, Dublin extra-condition (for giving a head to porter), Burton extra-condition (for giving a head to ale), double humulin aroma, brewing saccharum, neutralizing salt (tasteless, to restore sour-ale), tasteless beer-finings, and ale-finings. Are all these sanctioned by the Board of Inland Revenue?

"All the above materials are publicly advertised, and are not supposed to be unwholesome; but were the list extended to *cocculus indicus* and all that is sold by the brewers' druggist to the brewer and publican, *public beer would be shunned as absolute poison*. I know, for one, that some of it is horribly unwholesome to the *stomach* and the *liver*. *Why should this poison ravage our entrails? It is more odious than garlic, more hurtful than hemlock.*"

§ 3. The *third* condition is rarely fulfilled. Dr Aitken has some excellent observations bearing on this and the preceding:—

"Although so extensively used, as yet little is *certainly known* of the action of alcohol when administered in the form of wine, beer, or spirits. *None* of the general statements so frequently met with as to the composition or effects of any particular class of beverages *can be relied on as a guide to the physician in prescribing;* and much error seems to prevail on the subject, not only in the popular mind, but also amongst medical men. Alcohol is the most potent agent for good or evil in all these beverages; and, therefore, its *amount* and its effects challenge attention in the first instance. A pint of beer (20 oz.) may contain *one, or two, or more ounces* of absolute alcohol, or *less than a quarter of an ounce!* This alcohol may be associated in the beer with an amount of *free acid* varying from *fifteen to fifty grains*, and with an amount of *sugar* varying from *half*

an ounce to three or four times that quantity. A glass of sherry (2 oz.) may contain from *a quarter of an ounce* to *half an ounce*, or more, of absolute alcohol, with sugar varying in quantity from a mere trace to 20 or 30 grains, associated with a very variable amount of free acid, and other ingredients. It is impossible, therefore, for a physician to know what his patients are drinking, unless he is acquainted with the chief constituents and their amounts contained in the *identical* liquor he may prescribe; and, of course, before sound conclusions can be arrived at, the *conditions* under which these beverages are administered, or taken, must also be very *precisely observed.* . . The blindly empirical and routine mode in which alcoholic beverages are generally prescribed, *in absolute ignorance of their constitution and genuineness*, renders it advisable in a text-book to insist fully on these topics, believing that the physician cannot successfully cope with diseases, and especially with *constitutional* diseases, and the ill-health with which they are associated, unless he learns judiciously to use the immense power at his disposal in the influence of *diet*, *water*, and *alcoholic beverages*, as agents in the management of the system during the intervals between the paroxysms of these diseases." *

§ 4. As to the *fourth* condition, in the case of fevers, Dr Anstie lays down as the law, that alcohol cannot be scientifically administered until the urine of the patient has been analyzed, and the sphygmograph (or pulse-writer) has been applied for the course of many hours: otherwise mischief, not benefit, will ensue. He says, "Even the slight and trivial symptom of *flushing in the face* is a sign of the first degree of the *poisonous action*, namely, a vaso-motor *paralysis*, and shows that at least we have touched the border-line at which the beneficial action of alcohol ceases, and its poisonous effects begin." †

* *Practice of Medicine*, vol. ii. p. 242.

† *Lancet*, Jan. 25th, 1868.

But this does not express the whole truth, for we have to do with the *quality* of the drink as well as its quantity, and the precise purpose it is ordered for. On both these points the ordinary practitioner is deeply ignorant. Of the *three* sorts of alcohol—methylic, ethylic, and amylic—the boiling-point is, respectively, 151°, 172°, and 270° F. In drinking the compounds generally sold as wine and whisky, *few can detect the actual kind of alcohol consumed.* Of the physiological difference Dr Richardson thus discourses :—

"The scientific physician ought never to attempt their use except as alcohols, *the precise nature of which he understands.* Does he want a quickly acting stimulant which eliminates rapidly, *taking out little force,* he has it in *methylic* alcohol. Does he want an alcohol that shall create a more lasting effect [draw out more power], he has it in *ethylic* [wine] alcohol. Does he want to *reduce the body*, to prostrate it for many hours, he can do that with *amylic*, or butylic, or caproylic alcohol. But when he is ordering alcohol by *the general loose names* of gin, brandy, rum, wine, *he has no conception of what he is prescribing, nor of the effect of his prescription.*" *

§ 5. As to the *fifth* condition, all facts run counter to any such conclusion, and condemn as worthless or pernicious the old routine practice. The statistics of the London Hospital exhibit, over a series of years, *a gradual advance in the quantity of alcohol prescribed, and a no less gradual increase in the mortality.* 1862 to 1864, the deaths in the Physicians' department rose from 7 to 10 per cent. In the *Surgical* department, 1854 to 1864, from 4·48 per cent. to 6·55 per cent.,—an increase in both cases of nearly *one-third!*

On the other hand, *every* trial in the British hospitals, in the treatment of particular diseases without spirits, or with vastly reduced quantities of alcoholics, has been succeeded by a largely lessened mortality. Cholera, rheumatic fever, typhus, and typhoid fevers, may be taken as instances.

* *Medical Times*, Mar. 7th, 1868.

§ 6. *In Pneumonia* Dr TODD gives us 11 cases. No stimulants were given in cases 1, 2, 3, 4, and these were *rapid* recoveries, but were slighter cases of illness. Stimulants were given in cases 5 (died), 6 (lingering recovery), 7 (slow recovery), 8, 9 (recoveries), 10 (died), 11 (recovery). One death in five cases is certainly not a splendid success. In fact, there is hardly such a failure recorded anywhere, for these cases were nearly all those of young persons. Taking the 78 cases of all kinds treated in the Hospital by Dr Todd, we have 10 deaths—*one* death in *eight.* The old French plan of *coup sur coup* bleeding for pneumonia was not more murderous! Dr HESLOP, of Birmingham, thus sums up:—"There is but one inference possible: those who were not stimulated at all *did the best, and got well the soonest;* those moderately stimulated come next in order; those who were greatly stimulated either *died,* or the 'natural process' of cure was much retarded."

§ 7. Experience has gradually compelled to a more moderate and exceptional use of alcohol in fever, and the substitution of true and innocent physiological remedies.

Dr T. J. MACLAGAN, of Dundee, thus indicates the fact:—"Water *ad libitum*, fresh air, and good ventilation; as much beef-tea and *milk* as the patient can digest. Such is the treatment which clinical experience has taught to be the most successful."* His theory of Idiopathic fever is that it arises from a contagium-germ, which, for its own development, eats up the *nitrogenous* matter of the tissues, and absorbs a vast quantity of water, and so necessitates a supply of these substances. Alcohol, of course, has no nitrogen in its composition. For the reduction of heat, far better appliances can be resorted to than the narcotic alcohol.

Prof. NIEMEYER has an excellent mode of treating *Typhoid fever.* "Cold baths are much more convenient than wet-sheeting. There is occasional exhaustion. This usually

* *British Medical Journal*, Oct. 4th, 1873.

passed off quickly, and the disease finally terminated in recovery. I have not observed the same exhaustion (consequent on the production of heat), since I adopted a less sudden abstraction of heat—as solved by Obernier and Ziemssen. As often as the temperature rises to 104°, the patient is placed in a bath 10° below his own temperature. While the body and limbs are rubbed gently, we add cold water gradually till the temperature of the bath is reduced to about 68°. The patient remains in the bath 20 to 30 minutes, till he is slightly chilled, and is then placed quickly in a warm bed. At first 4 or 5 baths are necessary, subsequently 2 or 3. For lowering the heat in exanthematic as well as in abdominal typhus, next to the abstraction of heat, the administration of quinine deserves most confidence, 1 or 2 grs. at a dose "—p. 600.*

"If *peritonitis* occur, independently of perforation of the bowels, *cold compresses* over the abdomen still deserve the preference of leeches."—p. 601.

"*Pneumonia.*—Cold compresses repeated every five minutes. No bleeding, except in special cases."

Dr BRAND, of Stettin, in his treatment of typhoid fever and typhus during the Franco-German War, demonstrated the advantages of Hydropathy. Dr Franz Glénard, a French physician, a captive who assisted Dr Brand in carrying out his treatment on the French prisoners, says :—"*Out of* 170 *cases there was not a single casualty.*" On his return from captivity Dr Glénard adopted this method of cure, and having 13 cases of typhoid fever entrusted to his care, which all recovered, he announced that he had verified the conclusion of Dr Brand, namely,—"that all cases of typhoid fevers *treated regularly from the commencement with cold water*, will be exempted from complications, and be most assuredly cured." He says that the few fatal cases he had observed, were due to *delaying* the treatment until the fever was far advanced. Dr Brand admits of no exception in its

* *The Text Book of Practical Medicine.* London, 1870.

use, save *intestinal perforation;* and uses from three to six baths per day.

Drs WILKS, REES, and SUTTON have treated rheumatic fever extensively, *without drugs and stimulants*, and instead of the common frightful sequel of heart-disease, it has been cured in half the usual time, with less than *one* per cent. of that malady, which turns out to be rather a result of stimulant treatment than of any natural connection with the disease. So true is the remark made forty years ago, by Dr R. D. Mussey, of Cincinnati, that, "under the stimulant practice, trains of morbid symptoms are often aggravated, and *new centres of irritation established*, which, if not sufficient to destroy the patient, prolong the period of the fever, and frequently cause relapses or a lingering convalescence."

The reports of fever-treatment without stimulants, by Dr Henderson, of Shanghai, and Dr Bishop, of Naples, which reduced the mortality from twenty-eight to seven per cent., attracted, many years ago, the attention of several English physicians. Dr T. K. Chambers, who, under the ordinary treatment, lost one patient in five, under the new method had only three deaths in 121 cases. Well might this physician say to his students, in his Clinical Lectures :—"Above all, I would caution you against employing wine as a substitute for the true restorative treatment. It may be useful as an *adjunct*, but never in its place."

Two uses have been imagined for alcohol as a medicine in fever,—the one, that of a *fuel* to keep up animal heat when solid food cannot be taken; the other, that of an *anæsthetic*, like chloroform, which will stop the destructive waste of the nervous system, indicated by low muttering delirium,—the use, as it were, of a drag upon a carriage going too rapidly down hill. Our answer is, that this is altogether a matter of *fact*, not of theory; and the facts are dead against the fancy. What is here wanted to be done, can be better accomplished by other agencies. Milk, unfermented wine, or fruit juices, are better fuel than alcohol,

while the wet-sheet, tepid bath, or ice applied to the head or spine, are equally potent, and infinitely preferable, for soothing the nervous system and regulating the pulse.

The unhappy influence of the late Dr Todd's treatment not only led to the sacrifice of Mr Hindley, M.P., of the Prince Consort, and of himself, but of tens of thousands of valuable lives besides. The mortality in his own practice in rheumatic fever was always large; and, as Dr A. W. BARCLAY observes, in his 'Medical Errors,' the cases contain, in themselves, a complete refutation of his theory. "The 18 cases reported, give 15 in which there was *heart-complication*, and in some of these the stimulating treatment was fully carried out. In common fever again, eleven deaths occurred among twenty-four cases."

The error of the prevailing system was, however, long ago pointed out by a clinical and philosophic physician, Dr ARCHIBALD BILLING, who thus enforces the truth: "Tonics give strength; *stimulants call it forth.* Stimulants excite action, but action is not strength. On the contrary, over-action increases exhaustion. One thing necessary to the *recovery of the nervous* system (in fever) is *arterial blood.* To produce this of good quality, digestion and free respiration are requisite. The digestion having been disturbed, it is useless to supply other than fluid nutriment (I have found *milk* the best), until some renewal of nervous energy takes place. *This restoration will not be expedited by stimulants.*" *

§ 7. The elaborate statistics published in 1864, as to the treatment of typhus fever in the *hospitals* at Glasgow, by Dr W. T. GAIRDNER, professor of physic, are of the greatest weight, and must eventually settle the problem with the profession. In many hundreds of cases (nearly 600), of all ages, *the mortality lessened exactly as the dose of alcohol diminished*, milk, or buttermilk, being given in its place. Wine, reduced from an average of 34 ounces to $2\frac{1}{2}$, was

* *Principles of Medicine.* London, 1841.

followed by a reduction of deaths from 17 to 11 per cent. Of 209 children under 15 years of age, treated without any alcohol, *not one died*, though the very same class of cases, treated with alcohol in the *Infirmary*, had a mortality of *six* per cent. An inquest should have sat upon the six, and the just verdict would have been, "*Infanticide by medical routine and obstinacy.*"

Dr J. B. RUSSELL, of Glasgow, commenting on the preceding facts, observes that, "*Alcoholic stimulants are a two-edged sword in the hands of the practitioner.* If employed within the range of their stimulant action, *which is variable in every case*, they are helpful; if pushed beyond into their narcotic action, they impair the vitality which it is our duty to augment. Even as pure stimulants, they may be used unnecessarily, so as to *push and urge the laboring energies of the system*, maintaining an unnatural excitement in a journey, which could, with leisure, have been more easily accomplished."

§ 8. Professor PARKES and Count WOLLOWICZ give the results of their elaborate experiments on a young soldier, as follows :—

"It appears, then, clear, that any quantity over two ounces of absolute alcohol daily, would certainly do harm to this man; but whether this, *or even a smaller quantity*, might not be hurtful if it were continued day after day, the experiments do not show. It is quite obvious that alcohol is not necessary for him: that is, that every function was perfectly performed without alcohol, and that *even one ounce in twenty-four hours produced a decided effect on his heart, which was not necessary for his health*, and perhaps, if continued, would eventually lead to alterations in circulation, and to degeneration of tissues. It is not difficult to say what would be excess for him; *but it is not easy to decide what would be moderation;* it is only certain that it would be something under two fluid ounces of absolute alcohol in twenty-four hours. If we are correct in our inferences,

the commencement of narcotism marks the point when both appetite and circulation will begin to be damaged. As to the metamorphosis of nitrogenous tissues, or as to animal heat, it seems improbable that alcohol, in quantities that can be properly used in diet, has *any* effect; it appears to us *unlikely* (in the face of the chemical results) *that it can enable the body to perform more work on less food*, though by quickening a failing heart it may enable work to be done which otherwise could not be so. It may then *act like the spur in the side of a horse*, eliciting force, though not supplying it. . . In spite of our previous experience in the use of brandy, *we were hardly prepared for the ease with which appetite may be destroyed, the heart unduly excited, and the capillary circulation improperly increased.* Considering its daily and almost universal use, there is no agent which seems to us to require *more caution* and *more skill* to obtain the good, and to avoid the evil, which its use entails."

§ 9. Dr KING CHAMBERS, in his Clinical Lectures, says: "Alcohol has not, like mercury, a virtue which makes you overlook its *felony*. It seems to do *nothing but harm* in that deficiency of life which is the essence of the disease" (p. 426). From the conclusions of his experiments (pp. 565-576) we extract the following passages: "We can hardly hesitate to call alcohol *an arrester of nerve-life*, and consequently a controller of nervous action in the rest of the frame. On the whole, *the effect of continued small doses of alcohol is to diminish vital metamorphosis*, to make it irregular, and to *induce, in healthy people, the necessity for crises of evacuation.* Its secondary effect is a diminution of vital functions in general, and of *digestion* among the number. I do not think we shall be able to trace *any direct increase of force to alcohol*, even in the smallest doses, or for the minutest periods of time. Researches show pretty clearly that its continued use *does not add power* to vitality. What I wish particularly to remark is, that the primary as well as the secondary action is a diminution of

vitality. We may without hesitation conclude, that alcohol is primarily and *essentially a lessener of the power of the nervous system.*" And again :—"It is clear that we must cease to regard alcohol as in any sense an aliment. It remains for some hours in the body, and exerts in that time a powerful influence. What is that influence, and over what tissues is it exerted? 'A *stimulant* to the nervous system.' But what *is* a stimulant? It is usually held to be something which spurs on an animal operated upon to a more vigorous performance of its duties. It seems *very doubtful* if, on the healthy nervous system, this is ever the effect of alcohol, even in the most moderate doses, and for the shortest periods of time. Dr E. SMITH has recorded very minutely the sensations experienced after brandy, by a temperate man with a fasting stomach. First, lessened consciousness, and lessened sensibility to light, sound, and touch. Then a peculiar sensation of stiffness, with swelling of the skin, particularly in the upper lip and cheeks. *This is very unlike a spur to extra exertion.* In a patient at present under our care, the same peculiar sensation of stiffness, and the objective phenomenon of rigidity of skin without loss of sensation, is produced by the pressure of injured bone on the fifth nerve, in the skull. *It is a partial paralysis of a sensitive nerve, and cannot in any sense be considered an increase of vigour.*"

Dr KING CHAMBERS, in his Harveian Oration before the College of Physicians (July, 1871), further says : "Alcohol, though hardly a new remedy, is yet used with a *new intention.* It has been used in medicine through all these centuries, and now we use it *in a different class of cases* with better results."

Professor BINZ, commenting on his forty-nine experiments on men and dogs, says : "Two circumstances are opposed to the extensive employment of alcohol in acute diseases : (1) its effect upon the pulse ; (2) its influence on the tone and diameter of the vessels. Alcohol induces *dilatation* of

the *capillaries* of various regions of the body, but *especially those of the head*, with great precision and certainty."

§ 10. It would be very curious, indeed, if an agent of this description could be really a remedy for *Consumption*, as some physicians have alleged, since it has neither tonic nor restorative properties of any kind. Alcohol, however, has a good deal to do with causing this disease. Dr E. Smith, in his work on 'Consumption' (Lond. 1862), says that "gin-drinking is one of the causes of phthisis" (p. 241). Even in a special case, where Dr Smith prescribes rum, it is "in the dose of *two tea-spoonfuls* [*i.e.* one of alcohol] to half a pint of milk"!!! In the examination of 1000 patients he found that 24 per 100 *drank freely;* and 48 per 100 smoked tobacco.

Professor TROUSSEAU, of Paris, calls the accredited prescription of alcohol, '*Incendiary Therapeutics*,' and adds: "The data of the Therapeutic problem are so numerous, the results so uncertain and deceptive, that it is impossible to arrive at a conclusion rapidly; and the conclusion, when attained, is far from being always susceptible of rigorous demonstration. Dr Bell, of New York, has refuted the strange fancy that the free use of alcoholic drinks *protects from tuberculization*. He has shown that the reverse is the truth. My own experience leads me to the same conclusion." *

Professor N. S. Davis, M.D., of Chicago, publishes the result of 210 cases of hospital and private practice:—"Of these, in one-third of the whole number, the tubercular disease commenced and progressed through all its stages, while the subjects of it were at the time, and had been from one to twelve years previously, habitually using either fermented or distilled spirits. I have never seen a case in which an apparent improvement under the use of alcoholic drinks was permanent; on the contrary, after a few months, the digestive function becomes impaired, emaciation begins

* Lectures on Clinical Medicine, Lond. 1872.

to increase more rapidly than ever, and in a few weeks arrives at a total prostration."

§ 11. Professor LEHMANN, in his 'Physiological Chemistry,' observes, that, "when once the *fact* is admitted, that the first thing in many diseases is to furnish *a copious supply of oxygen* to the blood, which has been loaded with imperfectly decomposed substances, and to remove, as quickly as possible, the carbonic acid that has accumulated in it, these observations will have afforded us *true remedial agencies* which exceed almost every other in the certainty of their action. We should *forbid* the use of spirituous drinks, and not even prescribe tinctures, which hinder the necessary excretion of carbonic acid."—(Vol. iii. On Respiration.) *

We may ask, what sort of a disease can possibly require the continued use of a *depressing* agent? Dr Crichton Browne, referring to its use in certain cases of insanity, says:—"Whether the beneficial effects are due to a check imposed upon excessive tissue change, *or* to the disintegration of blood corpuscles; *or* to a hardening of the vascular walls of the blood-vessels, cannot at present be determined." † One thing, however, may be determined at once—the insanity of the people who use such a powerful drug without clear vision and absolute necessity!

The exaggerated notions of the therapeutic value of

* Public writers are always insisting upon the need of pure air and sanitary regulations, who yet fail to see the important fact that the use of alcoholics violates both conditions. "Excess of carbonic acid," says one of them, "is the most discernible injury inflicted by communities upon open air,—an injury revenged with fatal force upon the aggressors." In different air, taken from different parts of the same town, the amount may vary as much as from 9 to 29; "and in this latter district," says Dr Angus Smith, "the deaths rose to 4·5 per 100 of the population." It is remarkable that this is *exactly the ratio* of mortality amongst Drinkers, while it is only one per 100 amongst Abstainers, who cannot, and will not, live in the bad districts. "Much of the *phthisis* [consumption] and *scrofula* [arising from defective nourishment] of town populations is, doubtless, due to an atmosphere *overcharged with carbonic acid.*" *The drinker keeps his blood so overcharged.*

† *Brit. Med. Journal*, May 16, 1874.

alcohol are giving way before inquiry and evidence, and that the old theories are being fast exploded. The *British Medical Journal* (June 22, 1868), for example, in reporting another of the admirable lectures of Professor Gairdner, 'On the limits of Alcoholic Stimulation in Acute Disease, remarks :—"The author condemned the practice, and also the theoretical views leading to the practice, of the late Dr Todd. *It is as nearly as possible a demonstrated fact*, that much of what is spent in wines and spirits for the sick in hospitals, and, therefore probably in private practice, *is unnecessarily, if not injuriously, spent.*"

Let a few more great men be sacrified to the prevailing superstition, and then, we presume, common sense will be shocked, and a healthy reaction will set in. In the meanwhile the thoughtless must perish—*according to fashion.*

§ 12. In *Cholera*, it now appears, the *treatment* with alcohol has always been more fatal than the disease. In the *Medical Times* for March 4, 1867, Dr GEORGE JOHNSON says :—"Patients have recovered from cholera in all its stages, under the most varied and opposite treatment, *and without any.* It is therefore obvious that there is a natural process of cure. An impartial inquiry seems to show that those methods have been *most successful which have interfered least* with the natural progress of the disease. Of cholera it may be said, as of many other acute diseases, that for the cure of most cases curable by any means, the *vis medicatrix naturæ* will suffice." He then gives these statistics of the Liverpool parish Infirmary.

Admissions, 375; Deaths, 161 = 43 per cent.

SPECIAL TREATMENT.	*Cases.*	*Deaths per cent.*
Astringent and *stimulant* . .	91	71·42
Camphor and Ice water . .	,,	,,
Hypodermic injections and Ice .	,,	,,
Castor Oil, *with stimulants* . .	87	41·37
Castor Oil *alone*	197	30·47

"The mortality," he adds, "fell *immediately* on the

change of treatment; and at every period of the epidemic the mortality under the *astringent and stimulant treatment was much the same.*" *

Sir W. GULL states that "although opium and diffusible stimuli—brandy, camphor, and ammonia—were useful at an early stage of the disease, *as collapse set in they not only failed to produce any favorable result, but often aggravated the symptoms.*" †

From Dr BRAITHWAITE'S tract on Cholera, we cite the following:—"Avoid all *stimulants* (narcotics?) if you can, and let the reaction come slowly. If you feel compelled to stimulate, let it be by spirit of ammonia, champagne, or other *mild* wine. [That is, the *less* alcohol the better.] Stimulants are *generally* injurious: a combination of compound spirit of ammonia with chloric æther, is one of the safest and best stimulants we possess."—Pp. ii–iii.

Dr BULLAR is also very candid in his confessions:—"The treatment by calomel (it had 30 per cent. of deaths) was certainly better than that by opium and stimulants (with 67 per cent.). It left the cases more to NATURE. *Cold Water* is one of the best remedies. The less stimulants, opium, and other violent treatment, so much the milder will be the reaction and consequent fever."—P. 27.

Dr PIDDUCK, London, gave common salt (4 to 8 ozs. in a small quantity of water) as an emetic, forcing out the bile. The dreadful symptoms at once abated. "Of 86 cases in the stage of collapse, 16 *only* proved fatal; and *scarcely one* would have died, if *I had been able to prevent them from taking brandy and laudanum*, which counteracted the operation of the salt emetic. It was singular how large a quantity of bile and fæces was discharged after reaction was established, *the retention of which, doubtless, caused the typhus fever* of WHICH SO MANY DIED AFTER [wards]."

* The author demonstrated the same truth in 1850, in the *Truth-seeker*. See also 'Works of Dr Lees,' vol. iii., section on Cholera.

† Report on the Morbid Anatomy of Cholera, p. 185.

A careful transatlantic observer, Dr PAINE, wrote thus long ago of alcoholic stimulants:—"We have often seen no benefit from their liberal use, and it is even *doubtful* whether they contribute much in any quantities. It requires the conviction of experience, however, to enable us to abstain from their use, and to resist the *impulse* to apply them to the dying spark." *

§ 13. It was found in the battle-fields of America, that the wounded soldiers left to nature recovered the quickest and most perfectly; simply because they were saved from the doctor's *stimulant* treatment. The truth is making its way into our hospitals in England. Dr J. GREY GLOVER, for example, says that "the administration of large quantities of stimulant and of all sorts of nourishment in cases of *Carbuncle*, is now only part of a general fashion that is already going out. I am satisfied that, *of all forms of blood-poisoning*, that by alcohol is not the least common."

In July, 1883, we find C. R. FRANCIS, M.B., declaring that "no popular delusion has been so ruthlessly exposed, no theory so completely overthrown *by the evidence of unexpected facts*, as the once almost universal belief in alcoholic liquors, both as drink and medicine."

§ 14. There is no question that stimulants, prescribed for trifling ailments, have introduced intemperance into many families, and spread social and personal ruin all around. "I have seen," said Dr S. Wilks, physician to Guy's Hospital, "*so many* cases of persons, *especially ladies*, who have entirely given themselves up to the pleasures of brandy-drinking, become paraplegic [half paralyzed]. From what we hear of our continental neighbours, it would seem that *that* diabolical compound styled *absinthe*, is productive of exhaustion of nervous power in even a much more

* Letters on Cholera Asphyxia as it appeared in New York, p. 42. 1832. In the *Medical Times* for Aug. 25th, 1853. Dr B. W. RICHARDSON says: "Nor can I, either from the practical or physiological side, see a *place* for alcohol in the treatment."

marked degree. It would seem that the volatile oils, dissolved in the alcohol, give additional force to its poisonous effects." *

§ 15. The late Dr ANSTIE, in the *Practitioner* for February, 1871, well said:—"Another way in which medical men *often* fail to do their duty is, that they do not ascertain, with sufficient accuracy, *whether a daily dosage of alcohol, ordered for a particular temporary purpose,* has or has not been relinquished when the occasion for it ceased. . . A comparatively short course of this conduct, is sufficient to implant, in the unstable nervous systems of women, *a firmly fixed drink-craving.* . . Many girls of the wealthy middle, and of the upper classes, *especially the former*, are of late years taking to consume all kinds of wine, and particularly champagne, to an extent which used never to be permitted. Many girls are in the habit of taking, in the shape of wine, *two or three ounces of absolute alcohol*, a quantity which, if expressed in cheap beer, would be equal to six or seven pints. AN UNFAVORABLE STIMULUS IS OFTEN GIVEN TO THE ANIMAL NATURE OF YOUNG WOMEN. There is a subtle change, perceptible enough to those who study character with any care, telling of the gradual decline of the intellectual, *and the increased prominence of the sensual tendencies.*"

Let us hope, however, that the members of a noble profession will speedily awake to a full sense of the great responsibility under which they labour in prescribing alcoholics, recollecting the fact, of which their daily practice gives them a perpetual proof,—the fact, as stated by Professor LAYCOCK, M.D.,—that "indigestion, being temporarily relieved by alcoholic stimulants, it lays the foundation for an *ever-growing habit* of taking them in women, and excites a more and more urgent desire in the drunkard," so that "it is in this way that many persons of

* *Medical Times*, Oct. 24th, 1868.

position and education become irrecoverable sots."* Forgetting this law, and pandering to fashion or appetite, the physician will fail in his true and holy mission, and, under pretence of healing physical disorder, will leave behind him, in many households, a demon more rampant and remorseless than ever tore the flesh of the possessed ones in olden time.

Dr JAMES ROSS, of Waterfoot, in the *British Medical Journal* for Oct. 4, 1873, asks :—"What of the stimulant effect of alcohol? Partly delusive, partly real. In so far as it is real, it must depend upon a certain amount of nervous energy being *set free*. It is this diffused effect which goes by the name of the stimulant-action of the drug. The degree of diffusibility also explains why alcohol primarily affects the higher brain centres. The delicate structure of these centres is soon permeated by the drug, and hence the *intellect* and *moral* nature suffer first."

How important these truths are to literary men, to students, to clergymen, and to lawyers—yet they will hardly bear them naming. Shakespere spoke with a prophetic insight of the havoc which alcohol creates amongst men of genius, when he said—"Oh, that man should put into his mouth an enemy to steal away his brain," which in truth not only lays the foundation of many insidious and painful disorders of the body, but induces too often a sad and premature eclipse of the brightest intellectual powers.

* See the article in the *Saturday Review*, Jan. 21, 1871, on 'Drawing-room Alcoholism.' *This is the wicked work of legislators in supplying light wines and brandy to confectioners and grocers.*

VI.

THE HISTORICAL QUESTION.

§ 1. THE subject of intemperance, as it interweaves itself, not with the multiplied and minute circumstances of personal, social, and domestic life, but with the more public and memorable events of National History, if treated in detail, would swell into one of the largest volumes ever written. Here we can only record some of the leading facts of history and social life bearing upon the problem to be solved,—namely, (1) those that point to the nature and spread of the evil; (2) those that illustrate the failure of certain panaceas; and (3) those which indicate a partial alleviation, or a perfect cure.

No idea can be further from the truth than that which makes intemperance a matter of either *race* or *climate*. It is one of those hasty generalizations which shallow intellects grasp at, and interested persons propagate. Pretending to be a philosophical induction, it is in reality contradicted by the most varied and massive facts of history,—facts which clearly show that the very same races, at different periods, have been the alternate subjects of drunkenness and of sobriety, and that the vice of intemperance has prevailed equally in the torrid, the temperate, and the frigid zones. The facts of which we shall now give specimens, —selected from regions, epochs, and conditions most widely severed,—also show, that (*apart from abstinence*) no

variations of social life, no diversities of civilization, no forms or development of religious faith, have ever secured an *exemption* from the wide-spread curse of drinking,—a malady and a vice which has penetrated equally the hut, the mansion, and the palace, the wigwam of the Western savage, the tent of the Tartar, and the home of the European, —desecrated and defiled equally the pagodas of Paganism, the tabernacles of Israel, and the shrines of Christendom.

§ 2. It is a curious and instructive fact, that we are indebted to our knowledge of the earliest intemperance of the world, not so much to records of the vice itself (beyond passing allusions) as to the literary and ecclesiastical memorials of the *barriers* set up against its inroads and inflictions. Amongst the few fragments of historical books and antique literature relating to the 'world's gray fathers,' several striking notices of *intemperance* and its *remedy* have been preserved to us.

A page of MEGASTHENES'S *History of India*, cited by Strabo, shows that the highest, most religious, and cultured *castes* of Hindostan were then, and from time immemorial had been, abstainers:—"The Brachmans, the Germanas, and the Hylobious (or physicians), all abstained from wine."

The fifth and last of the 'Pentalogue of Buddha' (B.C. 560) runs thus: "Obey the law, and *walk steadily* in the path of purity, and [to do this] drink not liquors that *intoxicate* and *disturb the reason.*"

A celebrated work by Porphyry contains a page of a lost work by CHÆREMON, librarian in one of the sacred temples in Egypt, which has a very instructive passage, enouncing a doctrine both substantially and verbally identical with that of the book of Proverbs (xxxiii. 30, 31). He says of the priests,—"Some of them [the higher] *did not drink wine at all*, and others [inferior] drank very little of it, *on account of its being injurious to the nerves, oppressive to the head, an impediment to invention, and an incentive to lust.*"—PLUTARCH

informs us, that even the priests of inferior deities "were strictly prohibited its use during their most solemn purifications"; that "wine was wholly forbidden to the kings," who were also high-priests; and that Psametik, 600 B.C., was the first of the regal line who drank it.

§ 3. The Hieratic Papyri (*Anastasi*, No. 4), Letter xi., contains a very singular and instructive passage, written nearly 4000 years ago by an Egyptian priest and tutor, *Amen-em-an*, to his young pupil, *Penta-our*, who afterwards, becoming steady and reclaimed, rose to the dignity of court-poet to one of the Pharaohs:—"It has been told me that thou hast forsaken books, and devoted thyself to sensuality; that thou goest from tavern to tavern, smelling of beer at eventide.* If beer gets into a man, it overcomes his mind; thou art like an oar started from its place; like a house without food, with shaky walls. If thou wieldest the rod of office, men run away from thee. Thou knowest that *wine is an abomination;* thou hast taken an oath (or *pledge*) concerning strong drink, that thou wouldst not put such [liquor] into thee. Hast thou forgotten thy oath?"

Shortly comes another letter from this Egyptian bishop, resuming the allusion to the temperance pledge:—

"I have heard it said, thou goest after pleasure. Turn not thy face from my advice! or dost thou really give thy heart to all the words of the votaries of indulgence? Thy limbs are alive, then, but thy heart is asleep. *I, thy superior, forbid thee to go to the taverns.*† Thou art degraded like the beasts! But *we see many like thee*,—haters

* There was a sort of Burton-upon-Trent even then. In a letter following the one just cited, we find these passages: "The way up to Dja is covered with palms, yielding nothing fit to eat save their dates, not yet ripe. I shall walk like one strong in bone, traversing the marshes on foot. Then let the barrels be opened, which are full of *Beer* (*hek* or *henk*) of *Kati*."—Or was this *Gath* of the Philistines, and the liquor palm-wine?

† See Heath's *Exod. Papyri*, pl. cxi. § 3.

of books; they honour not God. God regards not the breakers of *pledges*—the illiterate. When young as thou, I passed *my* time under discipline; it tamed my members. When three months had ended, I was dedicated to the house of God. I became one of the first in all kinds of *learning*." *

In contrast to the ancient Egyptians, the modern Copts are a *sober* people, whatever the explanation may be. Probably, however, the cause is the long-continued exclusion of *intoxicating* wine by their Mohamedan masters. There was no *fashion* of drinking to corrupt, no *traffic* to tempt them.

§ 4. Persia was, no doubt, the primitive seat of the Aryan, or European and Hindoo races. One of its ancient religions regarded wine as an instrument of the evil power. When history opens it up to us, the people were very temperate. In the words of Herodotus, "strangers to the taste of wine, they drank water only." On this regimen, Cyrus conquered the East; with a departure from it, began the decline of his great empire. It is singular that the deviation commenced with medical delusion. According to ANQUETIL, in the reign of "Jemsheed, a supposed cure performed on a lady of the court rendered the use of wine common. Until then it had been considered only as a remedy." † Thus, by a fallacy of appetite, common in our day, what was adapted to disease came to be consumed daily in health.

* How wonderful to see the present in the past! It is the old, old story! Man and drink! drink and man! evermore the same in their mutual relations; yet each generation as stupid as the one that went before, always renewing the lesson, but never coming to a *conviction* of the truth! The Egyptian priest says, "wine is an abomination"; and he commands that a moral person should *abstain* from it, and not even go to the *tavern* where it is sold and drunk. Solomon and the apostles use exactly similar language; but modern critics, looking at it through modern tastes and customs, actually transform their words into an apology for sipping 'wine' and sitting at feasts!

† *Universal History*, vol. i. p. 300.

On this change of manners and morals, Professor RAWLINSON says :—

"The Persians, even of the better sort, were in the earlier times noted for their temperance and sobriety. Their ordinary food was wheaten bread, barley cakes, and meat simply roasted or boiled, which they seasoned with salt and with bruised cress-seed,—a substitute for mustard. *The sole drink in which they indulged was water.* Moreover, it was their habit to take one meal only each day. The poorer kind of people were contented with even a simpler diet, supporting themselves, to a great extent, on the natural products of the soil, as dates, figs, wild pears, acorns, and the fruit of the terebinth tree. But these abstemious habits were soon laid aside, and replaced by luxury and self-indulgence, when the success of their arms had put it in their power to have the full and free gratification of all their desires and propensities. . . Instead of water, wine became the usual beverage ; each man prided himself on the quantity he could drink ; and the natural result followed,—that most banquets terminated in general intoxication. *Drunkenness even came to be a sort of institution.* Once a year, at the feast of Mithras, the King of Persia, according to Durus, was *bound* to be drunk.* A general practice arose of deliberating on all important affairs under the influence of wine, so that in every household, when a family crisis impended, intoxication was a duty."

§ 5. The Arabs, like the Jews, were at one time addicted to shameful excess in drinking. Mohamed found them so besotted that they worshipt stocks and stones. The ancient Arabian story of *Antar* is full of illustrations of intemperance in wine. Indeed, it was owing to a perception of the enormous evils of strong drink, as WARNERIUS observes, that "the more devout pagan Arabs totally abstained from wine *long before the birth of Mohamed.*" That great lawgiver, in words almost parallel with the injunction of the apostles, gave forth a law, which (notwithstanding the evasions of the *un*faithful, and the temptations of circumstance) has more affected for good the millions of the Eastern populations,—Tatars, Turks, Persians, Hindoos, Arabs, Egyp-

* *Ancient Monarchies*, vol. iv. Amongst the later Jews, at the Feast of Lots, a similar practice prevailed. The Rabbins held that they were 'bound to be drunk.' The connexion is historical.

tians, and Moors,—than any other social or political institution which was ever set up amongst them:—

"O true believers, surely *wine* and lots are an abomination, A SNARE OF SATAN, therefore avoid them. SATAN *seeketh to* sow dissension and hatred by *means of wine* and lots; will ye not, therefore, *abstain* from them?" (The KORAN v. 7.)

Can we resist the belief that Mohamed, in his intercourse with the monks and Eremites of the desert, had heard or seen the following?—

"And they *becoming sober again*, out of the SNARE OF THE DEVIL, who are taken captive at his will." (2 TIM. ii. 26.)

"*Drink not*, be watchful, for THE DEVIL walketh about *seeking* whom he may *drink-down*." (1 PET. v. 8.)

§ 6. The Nabathæans are named by Diodorus, of Sicily, B.C. 60.* They lived in Central Arabia, and their vow closely resembled that of the Rechabites, who were probably a portion of the aboriginal tribe. Mohamed, however, plainly distinguished between the native or inspissated juice and the fermented product. The *Koran* says: "Of the fruit of the grape ye obtain an INEBRIATING liquor, and also *good nourishment*." Doubtless the Nabathæans and the Pythagoreans and Persian magi, after the captivity, had great influence in modifying opinion and practice in the region of Palestine. The Apocrypha, the Pseudo-Philon, and secular history, indeed, make certain the fact of this influence amongst the pre-Christian Jews and the early Christians,—so much so, that unless we read the New Testament in the light of this fact, many of its allusions, even its words, will fail to yield up the truth to us which was patent to the minds of those to whom the original was addressed.

Intoxicating liquor was a mocker of old, as it is now. PLINY (A.D. 40) has shown how the Roman world in his day was related to wine: "The *fascination* of wine being

* He says: "They live under the open heaven, and call the desert their country. A law forbids them to drink wine and to build houses."

so great, *that the* MULTITUDE *can see no other object worth living for.*" * So much for 'wine countries' being universally 'sober'!

§ 7. Greece and Syria seem to have been equally affected. THEODORET (A.D. 172) remarks of Tatian, that "he abhors the use of wine."

St AUGUSTINE reproaches "the Manichees with being so perverse that while they refuse wine (*vinum*), and call it the gall of the prince of darkness (*fel principiis tenebrarum*), they nevertheless eat of grapes" and "drink *vinum coctum.*"

EPIPHANIUS (A.D. 390), Bishop of Salamis, says of the *Encratites*,† "They did not use wine at all, saying, it was of the devil; and that drinking and using it was sinful." This was evidently said of *intoxicating* wine, not of the natural juice of the grape, which they are foolishly charged with inconsistently sucking.

PHOTIUS (A.D. 860) observes of the Severians, "They were averse to wine *as the cause of drunkenness.*" His 'Bibliotheca' contains extracts from many ancient writers, but in fact, he had lost the key in his zeal against heresy. The spirit of controversy led to the doctrine being repudiated *in toto* by the triumphant party; and thus the association of a practical truth with real or supposed errors, was, for want of discrimination, the unhappy cause of great subsequent corruption of life in the Church. The dark ages set in, followed by the sceptical; and it is only in our own day that men are rising above the mists, and looking once more at the original and abiding *facts.*

The most remarkable of all the religious communities of antiquity were the ESSENES and THERAPEUTÆ, with their kindred associates. We are indebted for certain knowledge of the first to the Jewish historian, writing in the first century of our era. Their tenets and practices, in many curious

* *Nat. Hist.* lib. xiv. cap. 22.

† This is the New Testament word for 'temperance,' thus applied by the ancients to the *abstainers*. Surely they understood their own language?

particulars, bore so great a resemblance to those of the early Christians, that many learned writers have contended that they were Christians, protecting themselves from persecution, and probable extinction, under the veil of a secret order. JOSEPHUS thus describes them: "The Essenes are Jews by nation, and a Society of men friendly to each other beyond what is to be found among any other people. They have an aversion to sensuous pleasure in the same manner as to that which is truly evil. Temperance (*teen enkrateian*), and to keep their passions in subjection, they esteem a virtue of the first order. *They are long-livers*, so that many of them arrive to the age of a hundred years; which is to be ascribed to their simple and plain diet, and the *temperance* and *good order* observed in all things" (*Wars*, ii. 8). To the Nazarites in the first instance, and to the Essenes in the second, Palestine was indebted for its comparative freedom from intoxication.

§ 8. Behind these facts concerning Ancient Teetotalism, there rests a deep, dark shadow, lit up anon with a lurid glare, the evidence of a still more ancient Intemperance. Far as we go back,—beyond the verge of history into the dim twilight of tradition,—we still find the traces of that ruin and wretchedness which ever follow in the track of strong-drink. The precautions and protests of prudent and holy men,—the prohibitions of the All-wise, the associations of mankind upon the basis of a common bond of union, a protective pledge and badge of brotherhood,—point to a *terrible background* of antecedent mischief and misery,—to a long experience of sorrowing hearts, of broken hopes, of shattered character, and of blighted homes! WHEN SHALL THE CUP OF INSTRUCTION BE FULL?

§ 9. Nor is modern history less significant and conclusive than ancient. If Oriental nations and tribes have been and are cursed by drink,—Kalmuck, Mongol, and Chinese, Hindoo, Persian, Arab and Copt, Syrian and Jew,—so have all the peoples of Europe, Greek or Roman, from the

southern Sclavonian to the Hibernian Kelt, from the Muscovite and the Lapp * to the Scandinavian tribes of many lands and names, Norwegian or Swede, Dane, Norman, Anglo-Saxon, or Anglo-American. In this experiment races may mingle, climates may change, social conditions may be revolutionized, but the old *nexus* remains,—drink, drunkenness, and riot,—drink and degradation,—drink and sensuality,—drink and disease, madness, crime. Italy with its happy climate, Norway with its comfortable homes, France with its wine, Bavaria with its beer, Prussia, Belgium, and Switzerland, with their education, Ireland with its poverty, England with its wealth, Scotland with its whisky and religion, the American States with their schools and freedom, are, one and all, examples of the inefficacy of

* In LAPLAND, within a generation, a great reform has been wrought out. In many parts no drink is to be had, and for hundreds of miles no liquor is sold. In Lulea, and other model towns, there is no traffic in strong-drink, and so 2000 or 3000 people live, from year to year, in peace and health : no magistrate or policeman, no pauper or criminal, no doctor or coroner, no fires or insurance office—because no drunkard-maker. In some parts of NORWAY, also, a great reform has been wrought during the last thirty years by the joint operation of Suasion and Law. The Rev. W. ORTON bears the following testimony, in the 'General Baptist Magazine' (1883):—"A visitor (to Norway) cannot fail to observe the Pavilions. These are erected in thoroughfares and open spaces for the sale of *un*intoxicating drinks. They are elegant little structures, octagonal in shape, and gaily painted so as to attract passers by. In each is a person neatly dressed as a waiter ; and here, without delay, and at a trifling cost, the thirsty can be supplied with refreshing beverages in which lurks no hidden danger. *The rulers are in advance of our own in discouraging habits of intemperance.* The inns are fewer, and are intended to be houses of refreshment rather than drinking saloons. The sale of spirits in such houses is *forbidden*, and even the light beer is sold only at certain specified hours, unless supplied with other things more substantial. The shops where spirits are sold are under strict supervision, and are found only in the larger towns, so that at least *one* of the temptations to drunkenness is taken out of the way. *It is sad, however, to know that, in spite of such restrictions, there are many cases of intemperance.* It is rumoured that there are numerous evasions of these wholesome laws ; and it was for us painful to see one handsome young woman who was unable to preserve her equilibrium, and also a cabman driving in a manner which no man in his sober senses would ever do. Still, the *aim* of the Statesmen to check the terrible evil is praiseworthy, and deserves the attention of statesmen nearer home."

all these conditions even to arrest the growth of intemperance, much less to suppress and extinguish the vice.

§ 10. A passage or two from Schlosser's 'History of the Nineteenth Century,' may be instructive. In PRUSSIA, "The Council of Education, according to Busching, who was a member, used every possible means to prevent non-commissioned officers *addicted to brandy*, or incapable invalids, from being appointed teachers. . . The king (Frederic II.) insisted that his invalids should be provided for. . . What, however, is more melancholy than all, is, that in order to support a military school for nobles, he suffered recourse to be had to *lotteries*, which, as is well known, *are as ruinous to the morals of the poorest classes of the people* as brandy-drinking." Prussia, notwithstanding her education, is a striking example of the essential *tendency* of alcoholic liquors to create an ever-increasing demand for themselves, and thus to perpetuate the evils of intemperance. Thirty-one years ago the following facts were stated at a public conference, by Dr WALD, of Königsberg, and twenty-seven years ago this writer published them in the Alliance 'Argument for Prohibition':—

"The Zollverein consumed 122 millions of dollars' worth of alcoholic liquors. Berlin in 1844, compared with 1745, *had one church less and* 1500 *taverns more.* Out of 60 children under 6, in the Orphan Asylum, 40 had been taught to sip drams, and 9 had a depraved desire for them. In the vale of Barmen,—renowned for its *religious character* or profession,—with a population of 80,000, not less than 13,000 were habitual dram-drinkers. In the conscription of that year (1852) for a district of Western Prussia, out of 174 young men, only 4 were admissible, the rest being physically incapacitated by dram-drinking. From year to year, prisons and lunatic asylums became more crowded, while thousands became permanently mad through *delirium tremens* (of which 100 persons annually die in the hospitals of Berlin alone). *Drinking, by promoting domestic misery and discord, occasions nine-tenths of the increasing divorces of the country.* Finally, one-half of the entire corn and potatoes grown in the north of Germany are converted into spirits, the use of which has increased ninefold since 1817." *

* See Report of Bremen Conference. Hertz, Berlin, 1852.

By the year 1876, Germany was consuming, *besides its wine*, 20 gallons of beer, and $2\frac{1}{3}$ gallons of *Branntwein* (spirits), per head. MALTÈ-BRUN, the geographer (edition of 1827), had spoken of the Northern Germans as "being robust, frugal, and *intelligent*," as "deprived of beer and spirits,"—"while the Southern Germans, accustomed to *wine*, are given to drunkenness and superstition." *Within one generation, then, the government temptations had altered the very character of the people.* Lippich calculates, from the mortality returns in Laibach, Austria, that 120 of the whole population perished annually from excess, and that a fourth of all the adults who died there might have been saved by abstinence. The conclusion is irresistible, that Germany has not discovered the cure for drinking.*

§ 11. Statesmen like the Right Honorable JOHN BRIGHT, ought to have known these facts, and hundreds like them, easily accessible in the literature of Temperance. Yet in this year of grace 1883, in a speech at Birmingham assuming to teach the Temperance party the philosophy of its own movement, we find public *Education*—a mere generalization for instruction of any or every kind—given forth as the cure for drunkenness, and the authority of 'a Saxon friend' given as the *proof!!!*† The *Times* correspondent (Sept.,

* The correspondent of the *Daily News*, under date of Jan. 20, 1871, writing from Berlin, but of Spandau, says:—"We meet *drunken boys* talking big about their soon going off to the war; we find *the dram-shops* filled at a quite unusual hour." The *Daily News* correspondent with the SAXON army writes:—"I am sorry to say drunkenness is on the increase in the German army besieging Paris. In the active campaign preceding the siege you would hardly ever see a man drunk; *now, hiccoughing gentlemen making a staggering exit from the shop tenanted by a marketander*, are far from uncommon."

ERCKMANN-CHATRIAN, in the 'Blockade of Phalsburg,' speak of "Old drunkards elbowing their way to the bar"; and add, "men can always find money for brandy and tobacco, when they have none to buy bread."

† "The facile commonplace that the true remedy for drunkenness is Education, does not receive much support from the figures which the

1883), writing from Geneva, thus disposes of the case :— "I suspect Mr Bright's Saxon friend drew too flattering a picture of his own country. I have lived in SAXONY, and know something of the habits of the people. If there is not much *open* drunkenness among the Saxons, it is because they are *well seasoned*, and there can be no question that *they drink a great deal more than is good for them. The quantity of beer they get through is astounding*, and when they take spirits, they naturally take them raw. Educated people are naturally less prone to over-indulgence in drink than the non-educated; but over-indulgence is a relative term, and the idea that habitual drinking can be anything but beneficial, *has hardly, as yet, dawned on the Continental mind.* In France women give wine to their children; in Germany they give them beer. It would require a *special* education to convince these women that they are wrong, and there are no teetotal societies to give the education."

Count MOLTKE, as appears from the *Deutsche Rundschau* (*German Sentinel*), is the leader of a new movement against drunkenness—a movement which has dispelled the proverbial indifference of Germans to such questions, and enlisted the sympathy and aroused the enthusiasm of all religious parties. The point reached at present is not a very advanced one, but it is at least a *beginning.* It is, first, that "something

Times publishes from its Geneva correspondent. A few months ago this correspondent showed that Switzerland was—with the possible exception of Belgium—the most drunken country in Europe, and now he reminds us of the undoubted fact that Switzerland is also one of the best educated countries in Europe. Of all the cantons Geneva is probably the most highly educated, and Genevan recruits almost invariably head the lists in the literary examinations for admission into the Federal army. Geneva is *also* 'the most drinking, if not the most drunken, of the twenty-two cantons.' The cause of this state of things was shown very clearly by the same writer last December, when his argument had the remarkable effect of leading the *Times* into an unqualified approval of Local Option; and subsequent inquiries have only confirmed the correspondent in his conviction that 'the habit of drinking *tends* to increase in proportion to the facilities for its indulgence.'"—*Pall Mall Gazette* (Sept. 1883)

must be done"; and, second, that amongst the somethings many of "the taverns must be converted into coffee shops." Well, this shows at least that a glimpse of the truth is breaking into the dense mind of German reformers; for the first is a confession of the failure of free-trade and licence, with education and land reform, for eighty years; and the second is a confession that coffee-houses, along with drinking-shops, have failed; and hence substitution (*i.e.* suppression) is now to be tried. The writer in the *Rundschau* says: "Whatever plan may be adopted, something must be done, and it must be something different from the former agitation, which knew only one narrow method for the removal of the evil, namely, to persuade each person individually to abstain totally from the use of strong drinks." One might have imagined this to be plain enough. It is the doctrine of the Alliance, that while conviction may apply to the reasonable, only prohibition can meet the case of the vicious, the ignorant, and the weak. Law is only required for such—not for wise men. But the *Pall Mall Gazette* totally misreads this, not seeing that the emphasis of the sentence rests upon the word 'persuade,' and prints the following fallacy:—"The temperance reformers of Germany, in short, have arrived in their own fashion at *the truth which our temperance men are gradually discovering for themselves* by the lessons of a bitter experience. The mere propaganda of total abstinence has failed, and is certain to fail, *as long as the causes which render it easy to drink and difficult to abstain from drinking*, flourish untouched on every side." How 'failed,' even as a propaganda? Fifty years of teetotal teaching, and five millions of disciples out of a mass of dense ignorance, is a triumph which no religious or philosophical sect can parallel in this country. The fact, however, is, the Germans are just beginning to discover the truth of the old Alliance doctrine, that occasional talk on the one side, and perpetual temptation on the other, is sure to end in the success of the latter.

The doctrine which has failed is the doctrine so long preached by the *Pall Mall Gazette* and other political and moral essayists—that of the *sufficiency* of education or moral suasion. The true temperance doctrine is, that ideas and institutions, light and motives, must be made to run on the same lines, and not to counteract each other as they now do.

Thirty years ago our great papers and politicians were for ever pointing to Germany, the country of light wines and lager beer, as the paradise of sobriety. How different is the story of to-day!

"The chief reason," says the *Sentinel*, "why former attempts to interest the Germans in a temperance movement have been such entire failures is, that while in other countries the same cause was in the hands of well-organised associations, and those countries enjoyed peace and political stability, Germany was swayed to and fro by the waves of war and revolution. Every attempt at systematic operations was baffled by the uncertainty of those troubled times, and the deeply-rooted evil could not be combated successfully." *This is not the failure of the truth, but the failure of men owing to circumstances.* It is the evil of a state of civil war. In the slave war of America, temperance teaching went to the wall. The greater agitation destroyed the lesser. Men are, as a mass, too small, too crude, to entertain two great agitations at the same time. The 'failure' is not due to want of adaptation in temperance principles, *but to want of heart and brain in mankind.* All causes, therefore, have had their rise, their reaction, their neglect, or their temporary oblivion. Truth sometimes may be neglected, or even crushed out, for a time. History is full of examples. Our hopes rest upon the belief that it will, nevertheless, rise again, in happier circumstances, and so make wiser times. If the Germans would not, thirty years ago, listen to Dr Egeling and Pastor Bötcher, we rejoice that they are now listening to General Moltke.

§ 12. SWITZERLAND, the poetic land of liberty, has not learned to free herself from the vile slavery of the pot. Thirty years ago, ignorant people pointed us to her as an example. The *Times* now exhibits her as a warning. Its Geneva correspondent gives these facts :—

According to the OFFICIAL REPORT for 1881–2, Berne (with a population of 530,000) possesses 670 distilleries, of which 360 conduct their operations with the aid of steam ; the others use fire only. The quantity of spirits produced by these distilleries in that year was 2,695,016 litres [a litre is 1¾ pints]. The number of distilleries for the production of potable spirits has increased by 268 in ten years. Five of them alone produce yearly 1,600,000 litres of pure spirits, which, mixed with an equal quantity of water, give 3,200,000 litres of *eau de vie*. The other distilleries, 666 in number, employ 1332 operatives, while the five larger, owing to superior appliances, employ only 50. The smaller concerns, moreover, produce spirits of an inferior quality, abounding in fusel oil and other impurities, and the *facilities for drinking* allowed to the workpeople give rise to the worst forms of intemperance. The report is very emphatic in its condemnation of the evils produced by spirit-drinking. *It is leading to their moral and physical degeneracy ;* it produces the most deplorable effects on family life, and has caused the ruin of thousands of citizens. The cantonal Legislature have lately raised the licence for distilling from a minimum of 200 francs to a minimum of 300 a year. The spirits imported last year from other parts of Switzerland, and from abroad, were 967,000 litres. After deducting the alcohol taken for manufacturing purposes, the amount left for ordinary consumption reached a total of 4,737,000 litres, equal to 8·93 per head of population, or 13·85 (two and a half gallons) for *each adult*, including women. The consumption of 1882 exceeded that of 1881 by half a litre per head. There was besides a heavy consumption of wine, beer, and cider. Berne is not the only Swiss canton in which the habit of spirit drinking is on the increase. It is increasing enormously in Geneva. *The consumption of wine, beer, and cider is slightly decreasing.* In 1860 these were at the rate of 241 litres, in 1880 at the rate of 233 litres (52 gallons) *per head of population*. But the slight falling off is far more than made up by the increased drinking of spirits. Education has far less influence on the drinking habits of a population than some people suppose. Switzerland is one of the best educated countries in Europe, and Geneva the best educated and most intelligent canton in Switzerland.

§ 13. "In 1775," says Schlosser, "Gustavus had recourse

to the Russian principle respecting the distillation of spirits, and introduced it into SWEDEN. This new privilege proved ruinous to the country, because *the income of the monarch increased just in proportion as the morality, health, and prosperity of the people declined.* The ruin and corruption of a nation, which had been for ages distinguished for the vigour and simplicity of the people, were effected by *converting the corn necessary for their subsistence*, and which was even partly imported, *into liquid poison*, and that too, to increase the revenues of the crown" (iv. p. 370).*

From 1785 to 1825, the population increased 20 per cent., but the consumption of brandy 400 per cent., *notwithstanding the education.* A verse from an old Swedish ballad witnesses to the social besotment which ensued:—

> All our daily labour done, set the cans a-clinking;
> Fill and swill, 'till morning sun calls us from our drinking.

Now Sweden has a full and active machinery for instruction; yet, excluding offences against the forest laws, there was, in 1830, one criminal to 320 of the population; and one crime in 11 was *committed in drink.*

Mr SCOTT, in his 'Travels' shows that neither education nor land-owning will of themselves prevent the growth of drinking:—"The Swedish clergy are highly educated and intelligent (p. 303). A great variety of educational establish-

* Of late years, the old bad policy has been discarded, especially in NORWAY, in consequence of the earnest agitation of the temperance question; and now the corn grown is found to be, not only adequate to the subsistence of the people, but affords a large surplus for *exportation.* The authoress of 'My Norske Note-Book' (1860), says:—"Except in the towns, no one can get a licence for selling spirits. At one of the stations we wished to buy a little brandy, our solitary bottle having been broken the second day of our carioling, but the master of the house said he was not allowed to sell us any, but would give it to us with pleasure. For their own *private* use, the bonders [farmers] procure it from the towns, but the peasantry are, perforce, obliged to go without. I dare say this rule is *sometimes* infringed; *still*, THE DIFFERENCE IT HAS MADE AMONG THE PEASANTRY IS VERY GREAT, *for whereas drunkenness used to be the national vice, we have not as yet seen one tipsy person out of the towns.*"

ments exist, both private and public. The order of the peasants (yeomen) number 2,500,000, and own *double the property* of all other classes put together."—(pp. 322-3). Hence "it is well that we should guard ourselves against undue and extravagant expectations of the amount of good to be derived from school-instruction. *Centuries of education will not remove the evils of bad and mischievous customs and laws*, which form, in fact, an indirect education of another kind, often more powerful and lasting in its influence than any series of lessons taught within the walls of a schoolroom." *

§ 14. While we write, the Scottish papers (Sept., 1883), contain the following testimony :—"The Rev. ROBERT HOWIE, of Govan, just returned from Sweden, says he was greatly astonished to find that drunkenness was so prevalent there. In Gothenburg, and other towns, he *had seen more drunkenness in a day than could be seen in Glasgow in a week.* In some places the Sunday-night drinking was fearful." †

* *Westminster Review*, vol. xxxiv. p. 69.

† The world has been stunned with the wonders of the Gothenburg system—got up for the benefit of the Big-brewers, who never cry out 'Failure.' We cut this out of the columns of the *Shipping World* :—"Mr Gainsford Bruce and a party of friends have been enjoying a run up the Baltic in Mr Bruce's yacht, *Coventina*. The handiest man on board was Nap the boatswain. He was one of those useful sailors who 'could turn his hand to anything,' and was always ready and pleasant withal. Consequently, when he asked leave to go ashore, it was generally granted. He would go ashore in the evening charged with admonitions to return early ; and he did return early, in the grey light and quiet hours that wait upon the coming sun, and always in a strange boat, and very drunk. Finally, the *Coventina* was headed for the chief city of south-western Sweden. Mr Bruce would study the 'Gothenburg System.' When the yacht was made fast, Nap applied for the customary leave to go ashore. But the sailing-master, in view of past irregularities, declined. 'You must see Mr Bruce,' he said. Hat in hand, and primed with reasons, Nap approached the owner. 'Certainly, Nap ; certainly ! You can go ashore,' said Mr Bruce. 'The very man to test the system,' thought he, smiling, as Nap disappeared. With the early *twilight* Nap reappeared on board, sober as a judge. 'You are back early, Nap,' said Mr Bruce. 'Yes, sir ; oh, yes, sir. A very poor sort of place this, sir !' The system had stood the test." (They would not let him have brandy without a meal.)

§ 15. In the middle-ages intemperance prevailed greatly in FRANCE, especially in Burgundy, long ere spirits were known. In 1282, a General Council of the Church *interdicted priests altogether* from entering into taverns, except on necessity while journeying. SMILES, in his 'Huguenots,' notices that "a reformation of manners" occurred at Meaux, A.D. 1530, and that "blasphemy, *drunkenness*, and disorder disappeared."

The philosopher and statistician, Mons. QUETELET, in his great work on human development,* explodes the fallacy that France is a temperate country. "Of 1129 murders committed during the space of four years, 446 have been in consequence of quarrels and contentions in taverns." It is true that in large districts, and chiefly the most ignorant, there is little drunkenness and crime (a fact to which Quetelet refers); but that is owing to the fact of *the extreme rarity of wine-shops, and to the extreme poverty of the people.* In the rich and manufacturing parts, intemperance and its resulting evils abound. Dr MOREL, of the St Yon Asylum, says, in his work 'On the Degeneracy of the Human Race,' that "there is always a hopeless number of paralytic and other insane persons in our hospitals, whose disease is due to no other cause than the abuse of alcoholic liquors. In 1,000 patients, of whom I have made special note, at least 200 owed their mental disorder to *no other cause*" (p. 109). Many more, therefore, would be indirectly affected or aggravated by drink.† M. BEHIC, in his 'Report on Insanity,' says, "Of 8,797 male, and 7,069 female

* 'Sur l'Homme et le Développement de ses Facultés' liv. iii. c. 3. (Bruxelles, 1829). France, in proportion to population, has double the *suicides* of England.

† In the Charenton Asylum (Paris), out of 256 persons insane from physical causes (1826–28), *sixty-four* (*one-fourth*) are set down to the *abus du vin*, including *twelve* females. Of the whole number of insane cases, *one-fifth* are ascribed to *excess* in *wine*. How many indirectly to the *use*, it is impossible to affirm. Before the Wine Bill was passed, the writer informed Mr. Gladstone of these facts—but he obstinately followed the theory which has proved fatal to thousands of our women.

lunatics, 34 per cent. of the men, and 6 of the women, were made insane by intemperance. This is the most potent and frequent cause." French journals note, that years of plenty in the wine-districts are years of disorder and crime for the country at large. The 'Annals of Hygiene,' for 1863, observe that, "in wine-growing countries, *delirium tremens* and alcoholism are most frequent" (xxvii. p. 203). The plain fact is, that, though partly owing to the temperament of the people, and partly to the better arrangements of the police, outrageous and besotted drunkenness may be less frequent, or less apparent, yet the serious and essential evils are as great there as in any other country. *Sensuality pervades their life, crime is very prevalent, suicides are in excess, population is arrested, and extreme longevity is rarer than in almost any other land.* In France everybody drinks, young and old, male and female, and we find one centenarian amongst 360,000 persons; in the United States of America, one in every 9,000. Sixteen years ago, Dr Bell estimated the whole of the alcohol drank in France in the shape of spirit, wine, and cider, as equal to four gallons of proof spirit per head *annually*, for all ages, men, women, and infants. It is certainly not less now. Statistics obtained by the late Mr E. C. DELAVAN, from the French Government, in 1867, enable us to say that the production of wine in 1865 was rated at 1,089,000,000 gallons, and of distilled spirits and other drinks, 427,746,000. Of this enormous quantity, of which only a small proportion is exported, 77,000,000 gallons of wine are consumed in Paris alone, which is 42 gallons per head yearly! * The *cost* of all this to the retail consumer, after deducting one-third for drinks exported, cannot be less than *one billion* of dollars,—one thousand million of dollars spent in what is not food,

* A. HUSSON, of the Hotel de Ville, in his 'Consommations de Paris' (1856), states that previous to 1830, each Parisian (including babes) took 9 litres (quarts) of *brandy* per head annually; now 14 litres (or 3½ gallons).

but which vitiates the morals, poisons the brain, and destroys the happiness of the people! In France, in 1856, there were 360,000 drink-shops, besides inns, cafés etc. Over all France, one drunkery to 100 persons of all ages. De WATTEVILLE, the economist, puts drinking *third* in order among the fifteen direct causes of pauperism. To this we have to add nearly five millions of pounds of tobacco; in smoking which, the late emperor and empress set the fashion! With such habits, temptations, and examples, can we wonder that every third birth in Paris is illegitimate, and that there are 60,000 criminals permanently residing in the prisons of the Seine? Can we wonder at the awful collapse which came upon both government and nation? One who, living, defended the beer-shop and sensualizing beer at home, thus discourses of its counterpart abroad :—

"*The wine-shops are the* COLLEGES *and* CHAPELS *of the poor in France.* History, morals, politics, jurisprudence, and literature *in iniquitous forms*, are all taught in these colleges and chapels, where professors of evil continually deliver these lessons, and where hymns are sung nightly to the demon of demoralization. In these haunts of the poor, theft is taught as the morality of property; falsehood as the morality of speech; and assassination as the justice of the people. It is in the *wine-shop* the cabman is taught to think it heroic to shoot the middle-class man who disputes his fare. It is in the wine-shop the workman is taught to admire the man who stabs his faithless mistress. It is in the wine-shop the doom is pronounced of the employer who lowers the pay of the employed. *The wine-shops breed*—in a physical atmosphere of malaria, and a moral pestilence of envy and vengeance—*the men of crime and revolution. Hunger is proverbially a bad counsellor, but drink is a worse.*"—(Dickens' 'Household Words').

Mr HOPE, in his 'Brittany and the Bible,' observes that "the Breton peasant, after his work is done, seeks distraction at the auberge, *found at every corner*, and there spends what he has, and incapacitates himself from getting more. As a consequence (of dirt and drink), scrofula and fever abound, and deaths are numerous."

§ 16. Dr JOHN BELL, of Philadelphia, testifies to the same effect in his Report to the American Medical Association, 1869:—"Foreign countries are cited to show the temperance of the inhabitants where wine is largely made and consumed; and of these France is spoken of with most emphasis. A careful inquiry into the subject has not by any means justified such a favorable view. Your reporter, who spent a year in Paris, had an opportunity, *while attending in the hospitals of that city*, to learn something of the habits of the lower and poorer classes who do not come under the notice of travellers. Statistical returns show that the people, not only of Paris, but of other great towns of France, furnish a large quota of victims to alcohol, and the evils of intemperance are deplored by not a few of the medical men and publicists of that country. The subject subsequently engaged his attention, and he would refer to a small volume of his ('On Regimen and Longevity') for documentary and other proofs that wine countries, taking France as their representative, have little cause for self-congratulation, on the score of exemption from drunkenness. What is the experience of those persons who mix with the people in their fêtes—who look into their *cabarets*, or small wine and brandy-shops—who watch the crowds returning into Paris of a Sunday evening from outside the barriers, where they get wine cheaper than in the city—who visit their hospitals to note the causes of disease and of surgical injuries, and to make a record of their insane and its causes—who read the newspapers, and learn in them the origin of quarrels and duels between soldiers at a *cabaret*, and a disobedience of men to officers?*

* The *Pall Mall Gazette*, Oct. 17th, '68, has the following, suggesting, Who shall protect us from our protectors?—"An account appears in yesterday's *Journal des Débats* of the proceedings before the *court-martial* in the case of the voltigeur of the guard accused of wounding a civilian with his sabre. At the trial the prisoner explained himself. 'You know, mon colonel, it was the emperor's fête day, and *we had been drinking his health*. I remember that, about eight o'clock, I had

VILLERMÉ, high authority on all statistical and benevolent questions, said years ago, that *drunkenness is the greatest curse of the laboring classes in France.* Wine, especially the common country wine, does not stimulate them enough; *it only serves to give them an appetite for something stronger,* which they find in their own brandy. The successive stages of intemperance are so well described by VILLERMÉ, that one might suppose he had drawn the picture from what transpires so commonly in our own country. 'The workmen drink spirituous liquors at first, without pleasure, and merely through imitation; soon to indifference succeeds an agreeable sensation; *then an insensible desire is felt, and a passion continually augmenting.*'"

§ 17. Even in benighted France, however, there is here

just come out of a *tavern* on the roadside, when I met with another voltigeur, with whom I began to converse. We were going towards the railway when a man called out to us, 'Walk a little faster, or you will lose the train.' I was *offended* at being spoken to in this manner. *The wine got into my head, and I don't know what took place afterwards.*' 'I can tell you,' said the president. 'There are some fine gentlemen, you exclaimed, who do not know how to speak to me civilly. I will speak to them with my Charlemagne.' Complainant seems to have been of a ridiculously mild disposition. 'I received the first blow,' he said, 'on the head, the second pierced me in the thigh. I had a narrow escape, but I was able to begin work again in a few days. What particularly annoyed me,' he added, 'me and all my party, was to miss the fireworks. For the rest I have no ill-will against this soldier. What he did to me he might have done *to any one else.* I say, then, forgive him, *for he did not know what he was doing.*'

Le Droit publishes a report of another court-martial. A grenadier, meeting a printer in the street, rushed upon him without any assignable motive, gave him a deep cut with his sabre on the right side, and then ran down the street brandishing his weapon, and exclaiming, 'Here! sentinel. The people have risen! Cross bayonets! Fire! I have killed one of them,' until passing before the Ministry of Marine, he was arrested by the guard. The court deliberated for a quarter of an hour, and then by a majority of four votes to three, *acquitted* the prisoner. *Le Courrier du Bas Rhin* (Strasburg), mentions that on Sunday last *a drunken soldier* of the 18th Regiment of the line wounded a civilian with a sword bayonet. 'The wound,' says *Le Courrier,* 'is, fortunately, not severe; but the fact, nevertheless, is *one more to add to those so frequently recorded in the journals,* by which the impropriety of allowing soldiers to *carry arms* when not on duty, is plainly shown.' Why no take away the *drink* which excites to the violence?

and there a temperance oasis,—a green spot in the waste. In the quaint little city of VILLÈNEUVETTE, there is only one café and one hotel, both closed at nine o'clock. There pauperism, beggary, and illegitimacy are all but unknown; and the people live long and happily. At ST AUBIN D'ECRONVILLE, in Normandy, is an establishment for the production of those beautiful anatomical models which have made M. Anzoux so well known. He educates boys to this artistic work, and has generally about 70 persons in his employment. Both smoking and drinking are forbidden. The *ouvriers* of St Aubin never enter a wine shop, nor waste a sou in smoking. Their hands are always steady, their heads always clear. The consequence is, they economize and put money in the bank. What was formerly a beggarly, dirty village, is now a thriving and beautiful little town.

§ 18. RUSSIA is another example of national intemperance, both south and north, east and west. Climate and race make little difference when *circumstances* favour the existence of the vice. The Venetian ambassador BARBARO, in his 'Travels in 1436, into Tanna [Asof] and Muscovy,' observes that, "about twenty-five years ago (1411), the Grand Duke, on finding that his subjects were much addicted to drinking, *which made them neglect their affairs*, gave orders that no more beer or mead should be made; *by which means he obliged them to live sober and regular lives.* Besides this, he did many other things for the advantage of his dominion." He was followed, however, by less wise rulers—in fact, by Grand Dunces on this point, and for several generations a current of corruption has set in, which is likely to end in bringing the empire to decay and extinction. *Liberty has been extended it is true, but license has counteracted its legitimate fruits.* Since the abolition of serfdom, drunkenness has become at once more common and more dangerous. The Government had long made a point of raising a large revenue from corn-brandy,

not so much by heavy duties as by small licenses for distilling. The consequences were deplored by the late czar, ALEXANDER, but his contemplated reforms were overruled. This nation once more illustrates the impossibility of all attempts to be *great and strong*, while natural, moral, and physical laws are violated. The following frightful facts were revealed in 1869:—

"A population of 80,000,000 (including Asiatic Russia) can furnish a contingent of 800,000 men without serious inconvenience. But will the men thus furnished be fit for active service? This question has just been answered by the Medical Commission of Experts appointed by the Czar to examine into the sanitary condition of the people. The statistics establish, that out of the 49,000,000 of the Working class, fully 50 per cent. of the males are incapacitated for military service *by physical weakness and disease;* that the total number of *able-bodied men* in Russia in Europe, with a population of 60,000,000, barely equals the aggregate produced by the 38,000,000 of France; that in Central Russia, certain contagious maladies are so widely diffused (no fewer than 100,000 persons being infected with them in the Government of Poltava alone) as almost to assume the proportions of an epidemic plague. Nor is this all. The report goes on to state that *the weakness in productive ages is such*, that whereas in Great Britain the proportion of persons alive between 15 and 60 is 548 (and in Belgium 518) out of 1000; in Russia the proportion is only 265. The statistics of the average duration of life are still more significant. The most reliable estimates give to every inhabitant of Western Europe an average of 40 years, but in European Russia such a length of life is *exceptional!* In the extreme north, as well as in the provinces on the western frontier, the average duration of life does not exceed 27 years, and is even placed lower by some authorities. In the agricultural districts of the Volga basin, and the south-eastern provinces, where the circumstances of life are highly unfavorable to health, the average falls as low as 20 years; while in the Governments of Perm, Viatka, and Orenburg, it is only 15. The statistics of the conscription of 1868, show that, out of the total number of men sent up to the various recruiting centres for the annual contingent of 84,000, no fewer than 44,000 were rejected for *disease* and other *physical defects*, not inclusive of short stature."

In § 13 we drew attention to an important statement of the historian SCHLOSSER, which has reference to some

terrible facts that are even to-day bearing fruit in 'Jew-baiting!' Here is seen a terrible but inevitable Nemesis. The Government encouraged drinking to degrade the people, it *persecuted* Temperance men and *suppressed* Temperance societies; the tax-collectors and the priesthood encouraged drinking as aids to superstition and tyranny; and so having sown to the flesh, they deservedly reap corruption together.

N. G., in the *Pall Mall Gazette* (Sept. 4th, 1883) writes:—"The following facts, gained from personal experience during a year and a half spent in Hungary and the neighbouring countries may help to justify to a certain extent the conduct of the Magyar peasantry. Throughout *the whole of Hungary hardly a public-house or village inn can be found which is not owned by a Jew.* The Hungarian lower classes, like the English, are unfortunately addicted to drinking; and *it is by skilfully taking advantage of this vice that the Jews make their fortunes, and at the same time raise such ill-feeling against themselves.* This is how the matter works. A peasant enters a public-house in the evening, intending to spend the few kreutzers he may have in his pocket on drink. As soon as these are spent he will very likely get up to go—I have been a witness to this scene more than once myself—but this does not suit the landlord's purpose, who will say to him, 'Stay a little longer, and I will chalk what you drink down.' The peasant—already, perhaps, a little excited—cannot resist the temptation, and before he has left that evening the commencement of a long score is already made. The next time, he finds it so pleasant and simple to drink without paying that he allows his score still further to be increased. This goes on till the peasant is in debt for a considerable sum. *Then the Jew turns round, and his former civility changes into menaces.* Finally he consents to allow the matter to stand over on the peasant giving security on his land for principal and interest of the debt. A fresh score is run up, the interest is not paid, and at last the Jew seizes

the peasant's land; *for in Hungary, it must be remembered, every peasant owns a piece of land.*" *

The celebrated Polish patriot, RUFIN PIOTROWSKI, in his 'Escape from Siberia,' shows that the Lords of the soil in Podolia, *purposely set traps for the people*, and literally cremate all patriotic aspirations and possibilities with burning-spirit. He gives this example. "He (the Landowner) summoned the landlord (publican), and represented that some of his village customers did not drink so much as they ought;—some might be allowed to run in debt, with instructions how to extort the last farthing from the poor wretches. *The same kind of speculation prevails through great part of Poland*, at the moral and material cost of the ignorant peasantry. This infamous policy of Landholders, may readily account for *the indifference shown by the people* to the Polish rebellion of 1830. Such a policy not only demoralizes its victims, but scarcely less degrades the very men who profit by it." He adds an example of the working of the system:—"A number of people were drinking (corn) brandy in the *vendeghaz* (Inn); and *not a few women* as well as men were already (at sunset) intoxicated. I felt intensely disgusted, for among the crowd there were pretty

* The same *suspicion of similar motives* in our Rulers is creeping into the minds of our Workers. The *Pall Mall Gazette* (Sept. 1883) says: "There seems to have been a pretty severe skirmish at the *Trades' Union Congress* over a passage in the report of the Parliamentary Committee in which it was stated that the 'Liberty and Property Defence League' obtained petitions in opposition to the Employers' Liability Act Amendment Bill. The discussion was remarkable for provoking a vehement explosion on the part of Mr Simmons, of the Kent and Sussex Labourers' Union. 'Who would have imagined,' he said, 'that the bill to prevent wages being paid in public-houses would have met with the violent opposition of this body? While efforts were made in all directions to prevent drunkenness, this association for the defence of liberty, forsooth, would have Working men still dragged to the public-house to receive their wages. The liberty these wealthy leaguers desired *was the liberty to keep working people in the slavery of ignorance, low wages, and long hours.*' Strong language, no doubt; but the League has itself to thank if it excites bitter feelings among the workmen."

delicate girls and young lads, with the unmistakable signs of demoralization on their faces. While wondering *why* this village should be especially distinguished by vice, a well-dressed man entered the room, with a pipe—the *proprietor* of the village" (p. 47).

In a large number of instances, the Jews are the publicans as well as the money lenders, and the poor downtrodden people, tempted to their ruin, turn upon their oppressors; and hence the wild rioting and destruction of life and property of which we read, and the Nihilistic horror beneath, generated in the foul womb of the Traffic.

§ 19. The taverns are as numerous in St Petersburg as anywhere, and are nicknamed 'National Banks,' for the double reason, that they yield a revenue to the nation, and absorb the money of their customers. To put an end to the gigantic evils of the system in the capital, the Government has recently decreed:—1. That the *price* of corn brandy shall be trebled, by increase of duty. 2. That no tavern shall exist in any *main thoroughfare*, to tempt the people passing. 3. That every tavern shall be treated as an *inn*, and pay the customary licence fee, about £70. 4. That no tavern shall be open *within eighty yards of any of the government offices*, which *swarm* in the metropolis; so that this provision is a good stroke of prohibition. It is one virtue of despotic governments, that they are thus *able* to treat vicious 'vested interests' with contempt.*

§ 20. In EUROPEAN TURKEY, amongst another race of people, and in a beautiful climate, we have an example which should be instructive to America, especially to the patrons and producers of Catawba wine.

Mr SCHAUFFLER, the American Missionary at Constantinople, thus wrote in 1827:—

* Again, after another Emperor has gone, the Russians are seriously consulting as to what shall be done. The *best* thing yet done in some provinces and districts, is the applying the *permissive* Local Option powers which they possess, and banishing the traffic altogether. Happy results follow everywhere.

"The prevalence of drunkenness upon *pure wine* has been on the increase for some ten years past. *Before*, it was *checked* by the high price of wine. It is a matter of regret that the poor German farmers [settled in Moldavia] should have entered upon a field of industry [wine-growing], promising in pecuniary respects, but so ruinous in its moral bearings.* The number of *wine houses and cellars has been on a most alarming increase* since wine has become indigenous. It has often been said that pure wine did not produce that *artificial appetite* for more. This is certainly incorrect."

Of course it is, for alike in America, Normandy, and England, experience proves that cider (or apple-wine) is simply a stepping-stone to stronger drinks—not a preventative, but a provocative. It is no better farther south. In the 'Report of the American Syrian Missions for 1869,' the Rev. H. H. JESSUP, says:—"This part of Lebanon is famous for its vineyards and wine, and the *people are more given to excessive drinking than those of any district I have known.* If they will not give up this habit I shall have little hope. The great besetting sin of the village is wine-drinking. In every house are several *huge earthen jars* filled with wine, and they drink it daily. Several men of the village have become drunkards. At every meal wine was brought, and almost forced upon us, but we refused to touch it. [Would the Saviour, had He been there, have touched it?] We read to them Prov. xx. 1; xxiii. 29, 30; Isa. xxxviii. 1–8; and Hab. ii. 15. They admitted that their village had a bad reputation for drunkenness. The *women* seemed delighted at the idea of giving up wine-drinking."

§ 21. Nor is fair ITALY exempt from the curse. From PEALE'S 'Notes on Italy' (Philadelphia, 1829), we cite the

* In the autumn of 1869, we spent six weeks in *California*, where wine-growing is rapidly extending, ending as everywhere in brandy-distilling, drunkenness, and demoralization, and that to an extent which must eventually defeat the aims of a civilized community.

following :—"The *Romans* are certainly a sober people, but the lower classes often indulge to excess. At a late hour, in many streets, may be heard the noise of Bacchanalian merriment, proceeding from some deep cavernous chamber. On holidays, the *wine-shops* are frequented by groups of men and women, who exhibit around the door a noisy and licentious crowd. But wine is not always deemed sufficient, *and those who are disposed to take a walk about sunrise*, may every day see persons with little baskets of *aqua vitæ*, which is swallowed by artificers between their beds and their workshops. Dr PUCINOTTI (even before 1830) attributed the severity of the Roman fevers in many cases to the general use of bark, *spirits, and other stimulants*, used as preventives; and relates the case of an old man who had come from the Romagna every second year, to labour during the harvest in the Campagna of Rome, *who never had the fever*, and his beverage, in the morning and during the day, was *cold water with a little lemon juice.* This practice his father had adopted before him, with the same success; but his two sons, who would use brandy, and even mix with it gunpowder and cayenne, both fell victims to the fever."

In SPAIN, we have a mild climate which conserves temperance, and also a race who are indebted to the teetotal example set by the Moors (or Arabians) during the time of their conquest and occupation of Granada. Another circumstance, also, greatly favours the temperance of the people, their long use of *chocolate* as a beverage, which by its saccharine matter, its spice, and its *coco*-principle, tends to antagonise the consumption of alcohol. Nevertheless, in late years, and during the political troubles, outbreaks due to intemperance have been seen; and it is beyond denial that the use of both strong-wines and *aguardiente*, or brandy, has been largely on the increase. In Leucadio Doblado's *Letters from Spain* (London: 1822)—the Rev. Blanco White was the English name—we find the following :—"The

inhabitants of the Sierra de Ronda are fond of spirits, and *many exceptions* to the general abstemiousness of the Spaniards are found among them" (p. 181). "An Andalusian proverb desires you to 'Kill your man and fly to *Olbera*.' A law-officer of the first rank was shot dead by an unknown hand. He had offended the chief of a party who was known to have despatched another man in a similar way. He was, in earlier life, renowned for his forwardness in the *savage rioting* which to this day forms the chief amusement of the youth of this town. The fact is, that *the constant use of spirits* keeps many of them in a state of habitual intoxication. One cannot cross the threshold of a house without being presented with a glass of brandy" (p. 184). "A young gentleman, the *gracioso* of the upper ranks—a character which must unite that of first bully to support it—had taken us under his protection. His only faults were, *drinking* like a fish [but not the same element], and being as quarrelsome as a bull-dog" (p. 187). "At *break of day* (introduced to one Ribera in bed), he sat up, and handed to me a *tumbler of brandy*, just filled from the ever-present green jar within reach" (p. 191).

§ 22. GREAT BRITAIN, however, perhaps provides more varied illustrations of the whole subject of intemperance and its remedy than any other single country, owing to the diversity of its laws, institutions, and peoples.

In SCOTLAND, with a lowland Saxon and a highland Celtic population, was seen the prevalence of drinking in all ages, from the most barbarous to the most refined,—drinking in peace and in war, in castle, cot, and bothie,—drinking amongst the pious and profane, with highland cateran and chief, with town bailie or lowland laird, and amongst the learned and polished circles of the modern Athens. *No place clean.* It was the frightful results (as seen in pauperism, impiety, disease, madness, and crime) which, a few years back, led to the enactment of a measure for abolishing the selling of drink at toll-bars and in con-

fectioners' and grocers' shops, and for the closing of dram-shops and public-houses on the Sabbath,—a measure which has effected, according to the verdict of the Royal Commission, a vast benefit to the country, and in conjunction with higher duties upon whisky, sensibly arrested in Scotland the growth of drunkenness, pauperism, and crime. Notwithstanding the occasional failure of Town-councils to do their duty, and see the law *enforced* by their police, it is a measure which evinces the power of repression in a very striking way. *Before* it passed, the prison at Edinburgh was about to be enlarged at great expense; *after* its enactment, a large number of cells were found to be unoccupied. If one day's suppression of the traffic can do so much, what might not seven days' suppression accomplish!

In the early part of 1871, the police in Glasgow broke into a *shebeen* (unlicensed house), and about 34 persons found there, simply drinking, were fined £1 each, and the free publican, concealed in a cupboard in company with a whisky jug, was fined £100. The reporter shows the superiority of *secret* and *illegal* drinking over that which is licensed, by adding, "beyond the fact of drinking, *no other impropriety was visible.*"

§ 23. IRELAND, again, has a peculiar people and a strange history. Her Celtic and impressionable race has at times been sober, and at others dissipated and intemperate to an excess, but during the lifetime of her great apostle of Temperance she rose to a height of enthusiasm and sublime self-abnegation which attracted the attention and won the sympathy of the whole civilized world. At one time, we ourselves saw his secretary enrolling members amongst the *sixth million* of disciples. For want of light, however, there was one oversight: *they neglected to prevent the future inroads of the traffic by erecting a legal bulwark* while the irresistible inspiration was upon the nation. Failing this, however, the cruel vested interests revived, the temptations returned, the enthusiasm waned, the disciples

fell away, and now the monument to Father MATHEW, in the city of Cork, is desecrated by a perfect circle of whisky-dens, where the people drink to their own degradation, and defile the precincts of a statue which should be sacred to purity and temperance. All the bad laws and influences that made Ireland a by-word and a reproach to England, have been aggravated by drink. Much of her agrarian outrages, and terrible assassinations, could not have existed save for that. Her poverty has been transmuted into pauperism and famine by the same vile agent; her industry has been paralyzed, her intellect besotted, her morals corrupted. A leaf or two from her history will at once demonstrate the curse of drinking and the blessings of temperance.* In Ireland, failure of crops has several times proved a blessing, by leading to the suppression of distilling. *The natural loss has suspended the self-inflicted curse;* the gain has been the lessened evil. For example, in 1757–8, 1760–1, the average balance of *loss* between corn imported and corn exported was £78,282. But in 1759, when, owing to a bad harvest, the distilleries were stopped, there was a balance of *profit* of £4,584. "The salutary effects of which," says a contemporary observer, "*were the restoring new vigour to our languishing manufactures*, and a visible reformation in the morals of the people." † In 1808–9, 1812–13, again, for parts of those years distillation was prohibited. Of oats, the grain mainly used by the distillers, the total quantity exported in 1808–11–12–15 is given from the averages of the Customs returns, with the quantity of corn spirits *paying duty*:—

* See, for further illustrations, Dr Lees's Prize *Argument*, and *Sequel* (One hundred objections answered).

† Earnest Addresses to the People against Drinking Spirituous Liquors, by W. HENRY, D.D., F.R.S. Dublin, 1761.

Oats in barrels.	Value.	Spirits in Gallons.	
4,299,567	£4,080,806	9,647,091	*Years of Dearth and Prohibition.*
3,033,831	2,267,225	22,419,197	*Years of Plenty and Distillation.*
1,265,736	£1,813,591	*Gain in four years*, BY BAD HARVESTS.	

Thus, even in years of dearth, the prohibition of distilling increased the oats exported nearly *two millions of pounds* in value; so that, making allowance for the parts of years during which the distilleries were in operation, *the capital of the country was increased by half a million annually, with a positive gain in all social and moral aspects besides.* Mr Sergeant Lloyd, before the Lords' Committee on the state of Ireland in 1825, assigned "the easy access to spirits" as the chief predisposing cause of the peasant disturbances in the county of Limerick.

Under the prohibition from June to December, 1808, and from March to December, 1809, whisky rose from 8*s.* to 18*s.* the gallon, and *at once* sobriety and order supplanted riot and debauchery. In 1810, when the prohibition ceased, "*the commitments increased nearly fourfold*"; and the Lord Mayor of Dublin directed public attention to its cause. So, again, when the distilleries were stopped from February, 1812, to September, 1813, *crime also stopped;* and when they revived to their work of destruction, crime revived with them.

§ 24. Another illustration is derived from a comparison of the years of Father MATHEW'S great success with *ordinary* years of intemperance. His triumphs were from the year 1839 up to the culminating era of 1845, when the movement began to decline (in part owing to emigration, in part to the natural subsidence of *all* mere enthusiasms), but in

1847–8–9, to the desolation of the famine and the exodus. Lord MORPETH declared in the Commons that "the heaviest offences, such as homicides, outrages upon the person, assault with intent to murder, aggravated assaults, cutting and maiming," had been greatly diminished. Take convictions for *offences against the person*, as those most likely to arise from excitement, and to be least liable to fluctuation from ordinary social influences, of course excluding the famine years, as subject to a disturbing influence.

Six *ordinary drinking years*, during which, exclusive of *much* illicit whisky, 70,913,546 gallons of British spirits paid duty.*		Six *less intemperate years*, during which, with *little* illicit distillation, 42,506,190 gallons of spirits paid duty.†	
1834...5,902 1835...5,832 1836...6,099 1837...2,631 1838...2,710 1839...3,156	Total crime of the first class. 26,330	1840...2,584 1841...2,324 1842...2,128 1843...2,172 1844...2,093 1845...1,869	Total crime of the first class. .....13,170 A reduction of one-half.

Take, now, two quinquennial periods, and see what they establish in regard to 'Convictions at Quarter Sessions and Assize,' compared with the years *remarkable for diminished consumption of whisky*.

* Taken from the returns of the Inland Revenue Office. See 'Report on Public Houses,' 1853, p. 656. At the beginning of this period, 1,296 persons were confined in prison for illicit distilling; in 1840, only 175, and in 1841 only 171.

† In several counties during this period, there happened the unprecedented circumstance of the *presentation of white gloves* to the Judges, the symbol of a clear calendar. How the Ruling Classes took this matter is curiously revealed in the interesting 'Memorials of Charlotte Williams Wynne,' a lady of the Court (Longman & Co., 1877):—"June, 1843. Ireland is indeed in an alarming state, and Father Mathew has much increased the danger. It is a very different thing to have to deal with well-organized bodies of men who are all sober, from what it was when they were all drunk." The Phœnix Park tragedy may put a different aspect upon affairs to-day.

	Spirits charged duty.	Serious Crime.	Executions.
Ordinary drinking years, 1835–39	59,770,892	64,520	59
Partially temperate, 1840–44	33,766,525	47,027	21
Difference	26,004,367	17,493	38

The prison, compared with the revenue returns, show that a legal *check* to drinking is also a check to crime.

	Duty.	Gals. Spirits.	Cases of Imprisonment.
1854	3*s.* 4*d.*, and 4*s.*	8,440,734	73,733
1855	Duty, 4*s.*, 6*s.*, and 6*s.* 2*d.*	6,228,856	54,431
		2,211,878	Decrease 19,302

TO LICENSE DRINK-SELLING, *therefore*, IS TO LICENSE FELONY AND BREED CRIME. So true is the saying of the jurist Mittermaier, that "all his investigations led him to the same sad truth, that *Society prepares the crime.*"

§ 25. ENGLAND, again, with her mingled races of British and Saxon, Dane, Norman, and Fleming, with her gentry habituated to wine, her city populations to gin, her shop-keepers to brandy, her southern and western peasantry to cider, and the bulk of her laborers to ale and beer,—has earned for her citizens the unenviable notoriety of being 'drunken Englishmen.' Not that they are in reality greater drinkers than the Dutch, the Germans, the Russians, or the French, but they display less reticence and self-control in their indulgence. The *manifestation* of their propensities is different. The whole history of this country is a comment upon the maxim, that *as are the facilities for the*

*sale and purchase of strong drink, so is the drunkenness, pauperism, and crime of the people.** The evil of drinking is all-pervading; it finds its way into Church and State, aristocracy and democracy; the seats of learning, and the homes of ignorance. In 1867 the expenditure on liquor for Great Britain was as follows:—

Home-made spirits charged duty (retail at 20*s.* per gal.)	£22,516,336
Foreign and colonial spirits (at 27*s.* per gallon)... ...	7,978,885
Malt-liquors (2 bushels malt per barrel of 36 gal., at 48*s.*)	60,261,393
Wines (chiefly the *stronger*), at 15*s.* per gallon	9,995,937
Cider and perry, home-made fruit wines, black beer, etc.	507,449
	£101,260,000

Contrast this expenditure with that of the year 1882, and what can be the rational inference?

Home-made spirits (20*s.* per gal.)	£28,554,264
Foreign and colonial (at 24*s.* per gal.)	9,950,425
Malt-liquors (2 bushels malt per barrel, at 1*s.* 6*d.* per gal.)	73,258,516
Wines, at 18*s.* per gal.	12,988,154
Cider and perry, home-made wines, etc., 2*s.*	1,500,000
	£127,251,359

The average drink-bill for 1871–1882, is £126,500,000 sterling—a pernicious average expenditure *for each non-teetotal home* of £28. In short, a sum equal to the rent of all our farms, and the cost of all our bread, has been spent yearly, for ten years past, upon *drink!*

§ 26. The measures of Mr Gladstone—the giving of wine licenses to grocers and confectioners—remain to be considered. The following figures show their results, and

* See Dr Lees's *Condensed Argument* for the Legislative Prohibition of the Liquor Traffic,—a volume of 160 pages, founded on the larger Essay to which the prize of one hundred guineas was awarded. We do not mean the mere *number*, but also size, distance, and opportunity. Farmers on market-day may be tempted by the drink in a country town, but then they are *away* the rest of the week.

also refute the fallacy, that a *training* in the use of diluted tipple will lead to a lessened consumption of the more *concentrated*:—

Gallons of WINES *consumed in year ending March 31st, 1870.*

Containing less than 25° proof spirit . . .	4,505,361
Containing 26° and less than 42° proof spirit . .	10,015,062

Gallons of SPIRITS *consumed in the Kingdom.*

In 1861	24,891,862
In 1869	30,114,624

When drink was sold only in grog-shops, no decent woman would buy; but when it was temptingly exhibited, gorgeously labelled, and persistently advertised by the 'Family Grocer,' and the 'Fair Confectioner'—what wonder if the mother, daughter, or servant, fell into the nets and snares which the statesman spread? Laws, like perdition, may be paved with good intentions!

Women apprehended for Drunkenness.	1861	1870
1. Manchester and Salford . . .	666	3,073
2. Bristol	184	346
3. Birmingham	320	571
4. Liverpool	4,272	8,944

The *total* drunkenness has also increased in all these places far beyond the ratio of the increase of population: notwithstanding the introduction of various panaceas and counteractives, besides the once lauded *cure-alls* of 'water fountains,' now generally out of order. For example, in Birmingham they had established three free Museums of Art, several free Public Newsrooms, six Free Libraries, and three Free Parks and Recreation Grounds. In the *first* named city apprehensions increased from 2,834 to 12,694; in the *second*, from 560 to 1,042; in the *third*, from 1,186 to 2,244; in the *fourth*, from 9,832 to 21,113.

§ 27. Of the vast sum spent upon drink, probably the *Working-classes* contribute about *two-thirds*, or, in round numbers, £70,000,000, which equals the entire government

expenditure of the country for Imperial purposes! It is a self-imposed taxation very lamentable, and leads, in the loss of time and health—the true capital of the worker—in deteriorated labour, in pauperism, disease, and crime, to a second loss, which cannot be estimated at much less than the first. The *channels* and *agents* for this wasteful expenditure are a demoralizing body of men called PUBLICANS,—many of them, however, the mere agents of Big-Brewers bloated with wealth, who make sickening pretensions to piety and philanthropy, while they fatten on the miseries of the poor,—men who unblushingly avow that their politics are those of the *trade*, first and last, and who are everywhere, as a body, found ranged against such ameliorating agencies as schools, free libraries, and temperance societies, but in favour of sack-races and horse-races, betting, prize-fights, and cock-fights, whose literature from *Bell's Life* down to *The Licensed Victualler's Guardian*, is that of low slang and 'lower life.' These men are licensed by the law to carry on their debasing and deadly trade!—wearing, in fact, the badge and livery of the State, as servants from year to year—"John Bull's Ticket of Leave men"—*licensed* to do—WHAT THEY DO. They are always on the increase, and bring after them a proportionate increase of paupers, criminals, and police.

DRINK LICENCES FOR ENGLAND AND WALES.

	1860-1.	1866-7.	1881-2.
Publicans	67,145	70,457	74,417
Beer-sellers only . . .	43,986	53,971	56,777
Wine-dealers	1,467	4,448	7,376
Total RETAILERS . .	112,598	128,876	138,570
Occasional Licences .	. . . .	. . . .	30,834
WHOLESALE dealers .	3,055	6,241	20,601

An addition in twenty-one years of 77,453 licences to debauch and degrade our people: an increase of the temptations to drinking of one half beyond the increase of population. No wonder that moral suasion gets on so badly. The inference is irresistible, that as the *temptations* gradually increase, drinking as gradually and certainly extends, notwithstanding the unparalleled physical, social, and religious influences, which during the past half century have been *counteracting* the tendency of the system.*

In 1857, each person in England averaged a consumption of nearly *two gallons of pure alcohol*, but in 1866, of $2\frac{1}{5}$. In 1857, each person in Scotland consumed on the average $1\frac{1}{5}$, but in 1866, nearly $1\frac{1}{2}$ gallon. In 1857, each person in Ireland had an average of three-fourths of a gallon, but in 1866, above four-fifths. In what direction, since that time, has there been any serious lessening of the consumption amongst those who drink?†

§ 28. Pauperism has consequently grown, until we have had a million of paupers sustained out of the public taxes. Mr GODSCHALL, in his 'General Plan of Parochial and Provincial Police' (Lond. 1787), inveighed against "the swarm of alehouses that infest all our towns and deprave and impoverish the labouring poor": yet, after 83 years

* In WALES, the temperance and religious elements have prospered, and the proportion of drunkeries to population is greatly less than in other parts of the kingdom. The consequence is, that crime, especially serious crime, is far rarer. In his charge to the Grand Jury, at Denbigh (1868), Lord Chief Justice BOVIL said: "I have travelled thus far through *North Wales*, and have been able to congratulate all the grand juries I have met. At one place there was not a bill found for trial, and no cause on the list. In other places there were but few persons for trial, whose cases required little consideration." In Caernarvonshire there is one public house to 188 people, and only one criminal to 2,452 inhabitants; in Anglesey, one public house to 216 persons, and only one criminal to 3,900 inhabitants; yet *both* counties are low in education. But in Glamorgan (South Wales), though education is above the average, *with one drunkery to* 120 *persons*, there is *three* and *four* times the proportion of crime—or *one criminal to* 909 of the population.

† In the calculation, *four millions* of Teetotalers must be excluded.

of tampering, the *Daily News*, Nov. 18, 1870, had to confess the failure of treating effects while feeding causes:—"The problem of Pauperism presents a difficulty which social-reformers are constantly called upon to face, and it cannot be said that we have yet managed to improve very much upon the wisdom of our ancestors in that particular." That there shall be in England above one million of paupers receiving relief from the public funds, and another on the verge of pauperism, living on charity, is surely not a necessity of civilization! It is, however, true that about every fifth person is either a loafer, soldier, beggar, pauper, prostitute, lunatic, or criminal, or a publican who creates them, or a policeman who catches them, or a judge who tries and condemns them, or a gaoler who imprisons them, or an undertaker who shall bury them! *What an enormous burden upon the industry of the sober and honest toilers!* On what pretence of 'liberty' or 'right' are these burdens and dangers imposed?

§ 29. The third line in the preceding table is very instructive: that which shows how the *wine licences*, chiefly granted to confectioners, grocers, and eating-house keepers, had quadrupled in a few years.* Mr Gladstone perversely adopted the theory that the love of heavy-wet and potent-drams was to be eradicated by favoring a taste for 'light wines'; and so, in spite of temperance protests, he obstinately persisted in his demoralizing plan. The results have been disastrous in the extreme. Young people, servants, and married women, who could not be seen in a dram-shop, have been tempted to drink the new and fashionable liquor, falsely branded as 'innocent.' *It has done its work, and*

* An action brought into the Court of Common Pleas, in November, 1868, for the recovery of a wine bill, elicited the fact, that at a banquet held in the preceding August, at the New Market, King's Cross, London, over which the Common Sergeant of the city presided, 521 bottles of wine were drunk by the 180 guests,—*i.e.* THREE BOTTLES EACH! The wine bills of Aristocratic Clubs show that the proportion of drinking in the City is not greater than theirs.

*created, in ten thousand instances, an appetite for stronger stimulants.** In 1868 there was a great scandal—one of many—created by the fall of a distinguished and aristocratic clergyman; whereupon the newspapers, which support the *causes*, give a homily upon the *effects!* Notably so, the London *Daily Telegraph*,—a bitter opponent of abstinence and prohibition. We cite its exact words:—

"Drink may doubtless sap a man's brain, weaken his powers, and even convert, as if by a harlequin's wand, a gentleman into a blackguard. The tale does but once more point the moral, that he who *begins* to yield can never know whither the terrible habit may carry him. So stern and so steady is the march of its evil influence, that insensibly a man dwindles down into the shadow of himself, and can never win back the strength and the courage he has lost. 'No one drinks now-a-days!' says Mrs Grundy. Well, people no longer get drunk in the middle of the day, or reel into a theatre in the state which was common during the old days of the legitimate drama; but *the doctors tell us*, and the doctors ought to know, *that within the last few years there has been a fresh outbreak of the drinking mania*, not amongst the frequenters of the public house, *but in good society—in the home.*† We cannot flatter ourselves that the report is exaggerated. Such propensities commonly seize upon society by fits and starts; and just now the unhappy suspicion again prevails, that ladies themselves occasionally take rather more than is good for them, under the pretence of 'supporting the system.' It seems but too true that *a dark shadow is cast on many homes by the fatal habit of secret intemperance*, and that, in not a few cases, the victims of the degrading vice have the excuse neither of ignorance nor of poverty."

But what excuse, we ask, have the legislators, who *create* the temptations; and, at the bidding of brewers, prevent the people from putting an end to the system? Is it not

* The *Saturday Review*, Jan. 21, 1871, in an article on 'Drawing-room Alcoholism,' lifts up the curtain which hides our fashionable life, and reveals a terrible chamber of domestic horrors. Who is *responsible?* Our so-called Statesmen!

† What is the cause? An imbecile brain, the nerve capital having been exhausted by the drinking of two or three generations. 'Our sons *inherit* us.'

immoral to postpone the *virtue* of the public to the *vested* interests of the publican?

§ 30. The moral work of England is set at nought, and its legitimate fruits blighted, by the pest of the traffic. The seminaries of Satan far outnumber the schools of Christ. Take, for example, the Sunday-school system, and follow the pupils into life.

The Rev. J. KINGSMILL, in his official report on the Pentonville Penitentiary, 1849, says: "Of 1,000 convicts, 757 had been scholars in the different day schools, high and low, in the country; *and nearly half of that number, on an average, five years*" (p. 14).

Well-regulated minds are at the foundation of a nation's order, economy, and peace, but co-extensive with the increase of the traffic has been that of idiotcy and insanity amongst the people. 70,000 persons are now in the various lunatic asylums of England and Scotland, operating as a dead weight to civilization, and *indicating a still larger number of persons, who, owing to moderate perversion, are either vicious, extravagant, or unreliable, the centres of domestic unhappiness, and the sources of social danger.* Lippich found, that of forty children, born of drunken parents, *only six* were in possession of vigorous health, while *two-thirds* of that offspring were nipped wholly in the bud. When the muscular and vascular system is so palpably shrivelled, what must be the injury to the delicate and susceptible nervous system and the brain?

During the twenty years from 1860 to 1880, two million and a half of criminals had been in the prisons, and let loose again. "We are now," says *The Times*, "in the unwonted case of having among us many thousands, tainted, stigmatized, corrupted by crime, its slovenly habits and horrid associations. We are surrounded by men, forming no inconsiderable per-centage of the population, asking for work or for charity,—conspiring against our property, and, if need be, our lives; spreading the contagion and art of

crime, waking while we sleep; combining, while we act each only for self; and forming an *imperium in imperio*, that may lead in time to the most disastrous consequences." There is, indeed, about the drinking system, a prodigality of mischief, a seduction, virulence, and fermenting fecundity in the reproduction of vice and crime, which are without precedent or parallel.

A noble lord, some time ago, said—"The criminal is a ghastly puzzle; he is a horrid riddle. We have imprisoned him, we have transported him, we have hanged him, but he still exists." Yes; and he will *continue* to exist, just so long as these fountains are licensed, or allowed, to flood the country with their temptations to drinking.

§ 31. The lives of the people, under a just and wise government, are the true *wealth* and *strength* of the nation. *Life is labour, and labour riches.* It has been ascertained, with much approximate accuracy, from statistics of various kinds, that there are about 40,000 deaths annually in England, *directly* traceable to drinking, and the diseases and accidents it induces: and probably 80,000 more that have had more or less to do with the *use* of strong drink. It is certainly the greatest of all the causes of mortality in the Army, the heads of which, however, persist in distributing the grog rations,—a long-since demonstrated evil.

The reports of the English Registrar-General of births, marriages, and deaths, and of the London Coroners, supply examples of the deadly but untalked-of influence of alcohol in aggravating mortality, as compared with other agencies which excite universal notice, and compel to immediate legislation. What are the facts regarding *accidental* and *wilful* poisoning, which have induced the law-makers to prohibit the sale of poisons by chemists, except under the most stringent and special conditions? The signature of the buyer must be taken, the poison distinctly labelled.

	1858.	1859.	1860.		
Cases of *accidental* poisoning .	282	279	240	}	1,188
Suicide by poison * . . .	119	112	156	}	
Murder and manslaughter †					1,059
Total in three years .					2,247

These are sad, even terrible, facts existing in the centre of Christian civilization; but they are, in great part, only concomitants or consequences of another demoralizing agency—*strong drink*,—of which its last fruits of perdition are worse for the victims than for mankind at large.

§ 32. The figures next to be cited, from the returns of the same years, by no means tell the whole story, because false charity towards the dead, and *an unwillingness to hurt the feelings of relatives*, induce the medical attendant to put down the *proximate* cause of death (*congestion*, or other disease) rather than the *real* one of drink, which is the same as though, to disguise the fact of a pistol-wound or sword-thrust received in a duel, the attendant surgeon had certified that "the deceased died of a lesion and rupture of several arteries"!

	1858.	1859.	1860.		
Deaths from drink . . .	288	345	318	=	951
Deaths from delirium tremens .	424	545	457	=	1,426
Total . .	712	809	775	=	2,377

Thus the whole number of cases of poisoning by arsenic, oxalic acid, and other drugs, was *less than one half* of those arising from alcohol!—and the deaths from this last form of poisoning, *exceeded by* 130 *cases the deaths from accidental- and self-poisoning, and from murder and manslaughter put together.* Yet the whole machinery of law and police is set at work to lessen the one set of effects, while the State lends

* The papers show that suicide is often caused by drink-perversion, leading to a loss of self-control; and that poisons are both given and taken in mistake, owing to the obfuscated condition produced by drink.

† Most of these cases, again, are the direct results of drinking.

its sanction, and society its silence, to uphold the *causes* of the other.

The Seventh Annual Report of the late coroner for the Central District of Middlesex (Dr Lankester) read at an evening meeting of the British Association for the Promotion of Science, Jan. 9, 1871, and printed for circulation in their transactions, says: "Whilst thus recording my annual experience, I cannot but regret that *I have so little evidence to offer of any manifest improvement* with regard to those occurrences which, in a civilized community, may be fairly looked upon as preventible." From Table No. 1 we learn, that during the years 1868–9 some 1,320 inquests were held, an increase over the previous year of 58. The deaths from excessive drinking were as follows: In 1868—males, 222; females, 98; total, 320. In 1869—males, 221; females, 101; total, 322. Thus in two years the number of deaths, in London, from this cause alone were 642—*one half of the whole inquests!* During the last two years Dr Lankester gave a separate heading to the cases where coroners' juries returned a verdict of death from drinking,—cases formerly referred to *natural* causes. We give entire the comments of the coroner on Table 2:—

"The total deaths from excessive drinking, as recorded in the verdicts of coroners' juries, are 43 as against 31 in the previous year. *Juries are very liable to wish to conceal the vices of their neighbours*, and to draw a veil over the evidence that clearly indicates that drunkenness has been the cause of death. The vice of *drunkenness is not confined to the poor; its victims are to be found among the rich and well-to-do*, as well as amongst the poor. Nor do the inquiries in the coroner's court at all lead to the conclusion that its *cause* is *poverty*. That it is frequently found connected with poverty arises from the fact that those who indulge in it become lazy and unfit for the duties of life, and, where they have to work for a living, must necessarily become poor.

"Drunkenness is not often the immediate cause of death by itself, but it *produces effects upon the tissues of the body, which result in causes of death when persons have become sober and temperate.* The most frequent conditions that produce death in these cases, are effusions of blood and serum on the brain. A large number of *accidents* result

from drunkenness. Where the habit of drinking is not known, or no evidence is given in the court, a large number of cases of sudden death, suicide, and accidental death, may be fairly attributed to the effects of excessive drinking. The opaque condition of the membranes of the brain, the fatty degeneration of the heart, the diseased condition of the mucous membranes of the stomach, the cirrhosis of the liver, and granular disease of the kidneys, are conditions so well known as connected with the use of alcoholic beverages, that when they occur, they arouse the greatest suspicion that the person in whom they are found has indulged in drinking."

§ 33. It has been objected, that though intemperance is doubtless the cause of many premature deaths, there are *some* diseases which the free use of alcohol prevents, or holds in abeyance,—consumption, to wit. Were this so, it would be no argument for drinking; because it is better that men should pass away in the course of a natural disorder, than with impaired intellect and depraved morals. Some years ago, Dr SWETT, of New York, stated as a fact, that of 74 cases of death from aggravated intemperance, in persons found in the dead-house, there was not a single case of tuberculous lungs. It may have been so, but it proves nothing against the great mass of contrary facts. Lippich, for instance, in his researches at Laibach, shows that 11 per cent. of drunkards died of consumption. Mr Neison, the London actuary, also found that of 357 drunkards, 40—that is 11 per cent—died of phthisis.

When we recollect, then, that two-fifths of the cases of consumption perish before their twenty-fifth year, when drunkards are beginning to train, and that 11 per cent. of the population is about the proportion in which persons of *all ages* die of consumption in England—we have a clear answer to the fallacy: since, *taking equal ages*, while only 7 per cent. of adults perish of consumption, 11 per cent. of drinkers die of that disease. Mr HUYDECOPER, in his earnest address on the evils of strong drink, says:—"I have, for a continuance of seven years, frequented, as one of the town clergy, the great military hospital at the Hague;

and could I lay before you the number of those I saw expire there of *pectoral complaints* and consumption, and from whose dying lips I have heard the confession, that they saw in their sufferings the fruits of their excessive drinking, you would be astonished that so many, even in our fatherland, should thus perish in the *bloom of life*." * He further says, that of the Dutch soldiers sent on service to the East, from 70 to 75 per 100 die from drink.

§ 34. Mr NEISON, by a series of approximate calculations, reached the fact, that in England 1 in every 74 persons is a *confirmed* drunkard; and that, out of all the deaths between the three decades from 30 to 60,—which expresses the matured value of the man,—the proportions from drinking were, 1 in 21, 1 in 16, and 1 in 22. Professor HUSS, of Sweden, says that Eskilston, containing 4,000 souls, was once so addicted to drink, that of the males 1 in 30, of the females 1 in 40, annually perished. He contrasts this town with the district of Jemtland, the people being very moderate (though of the same race, and living in the same climate), where the annual mortality is but 1 in 78 of the males, 1 in 82 of the females. In the army, everywhere, the mortality is still more frightful. Dr FORREY, in his observations on the records of the medical department of the United States army, ascribed to this vice more than half the deaths.

§ 35. The growth and magnitude of the evil of drinking in Britain, may be deduced from the enormous amount of misdirected, and worse than wasted *capital*, employed in the manufacture and vending of intoxicating liquors. At the instigation of a big brewer, Professor LEVI has made an elaborate calculation, bringing up the total to £117,000,000 sterling! This, however, is based upon the fallacy of reckoning the *hotel* business as a part of the drink-traffic: and is exaggerated with a sly and sinister view to hoped-for

* Een woord van Sterken Drank. Amsterdam, 1853, p. 174.

'compensation': which again involves another fallacy, since, drunkenness suppressed, the hotel-business, and every honest branch of industry, would be vastly increased, yielding profits larger and steadier; while the horses and wagons, plant and buildings (save only *tubs* and *vats*), would be really augmented in value. But if we allow that a sum of fifty millions is absorbed in the drink-trade strictly, and that half-a-million of people are venally interested in selling liquor, no matter by what means, we cannot fail to perceive that the business is one that brings with it an awful amount of crime and corruption, of degradation, disease, and death.

§ 36. If drinking has the power to barbarize civilized communities, it can hardly help to refine and civilize barbarian tribes. Yet, if we remember rightly, a bewildered author some years ago published a large book called the 'Fallacies of Teetotalism,' in which the contention was that alcohol was an essential element, and causal factor, of civilization! Never before, we presume, out of an asylum for lunatics, were Bottle and Barrel elevated to such a dignity! Unfortunately, the facts are all against this crazy theory. Livingstone, Stanley, and other travellers, show beyond denial, that the vice of drinking degrades even the Savage, and in some instances extinguishes him. The Maori of New Zealand, and the Indians of North America, are illustrations very familiar to us all. Here is a passage from Dr SCHWEINFURTH, the German traveller:—"All the NUBIANS who settle here, would abandon themselves very much to the use of brandy, *if it could be more readily procured.* Their fanaticism, however, is irreproachable; they rigorously follow the prescription of their law, and *most scrupulously observe the Fast of Ramadan.* . . Together with the fresh relays arrived rows of spirit-flasks in their original packing (mostly made at Breslau), which are stored away in their magazines. These find their way from Alexandria and Kartoom to this remote corner of traffic.

The agents drink their spirits neat, and cannot get them strong enough to please them; everybody else dilutes it with two-thirds water, or mixes it with his merissa. What was most revolting to me about their intoxication was, that they *always preferred the early hours of the morning* for their indulgence,* and for the rest of the day became *incapable of standing upright.* After they were tipsy they were just as pugnacious as Europeans, and the excitability of the south would break out, *so that manslaughter and death* were not of unfrequent occurrence" (*Heart of Africa*, vol. i. p. 239). Are these the legitimate and most hopeful beginnings of civilization?

§ 37. This history in broad outline, could be filled up in detail, but it would be simply a repetition of the same facts, varied in their accidents and colouring by circumstance, but illustrating still the same laws. This should be needless to reflecting minds, for when we once know, by pathological experiment, that the relation of any substance to the living organism is that which we designate as poisonous or disturbing, why should we require an ever-multiplying collection of similar facts to prove that poison and organic disturbance tend to chronic disease, and that disease tends to death? If we establish by the experience of any one village, town, county, or state, that drinking alcoholics promotes disease, idleness, and crime, and that the liquor traffic encourages and tempts to drinking, what is the need of going into another set of villages, towns, counties, or states to establish the same fact over again? Is not doing that, or disputing that, equivalent indeed to the absurd supposition that men and their relations are different in similar circumstances? Does anybody, however, really believe that either man or alcohol can undergo any change of essential relation with time or place? Does any one ever dream that cholera poison in Asia will

* Isaiah speaks of those "that *rise early in the morning* to follow strong drink."

produce a different kind of effect from the cholera poison in England? And so, when we observe the singular industry of medical men displayed by inquiries into the action of alcohol amidst the complications and obscurities of disease, and the curious *quasi* apologies which some of them conjure up in favour of its 'possible' uses, we cannot help suspecting a characteristic want of 'lucidity' in their thinking. Is there, at bottom, the belief that law is not inflexible, and causation not unchangeable? It would seem to be so, since a vast mass of mankind still go on drinking in 'moderation,' and licensing the sale of drink, expecting that a stop will come to the effects, though the past history of the world has never given us even a single example. 'Cause and effect' imply inseparable union and sequence; just as do the words 'Father and Son.' All our evils, as all our blessings, come upon us in that way, and in no other. We reap as we sow. Is it not quite certain, then, that unless *drinking* and *licence* be stopped, the kind of sad effects which have flowed for centuries in the past, must continue to desolate and degrade our people in the centuries to come? Is it not clear as the day—without putting ourselves to the trouble of gathering statistics of the amount of sunshine on every particular farm in the course of a summer—that, as is the sum of the sunlight in any season (other things being the same), so will be the fruit of harvest? In like manner, must it not be necessarily true, that in exact proportion to the amount of Alcohol and Tobacco consumed by the nation every year, will be the *degrees of disturbance* in body, brain, and mind? And in what way can this disturbance be measured but by its manifold fruits of idleness and dissipation, of indisposition to thinking and passion for excitement, of susceptibility to madness and tendency to murder—in short, of debility, disease, and death?

§ 38. Even the friends of Temperance do not yet clearly comprehend *the law of light* by which Legislation and

Remedial treatment must be directed in order to be successful. Dr ALBERT DAY, of Boston, U.S., says :—

"One of the chief *predisposing causes* of inebriety is CIVILIZATION, entailing, as it does, in its modern development, so great an expenditure of nerve-force. Atmospheric influence is another undoubted exciting cause of this affection, a paroxysm, for example, being caused by exposure to sea air or easterly winds. It has been said that there is an *inborn element* in the nature of man which develops inebriety. Could we trace the cause of this, we should find that the *whole* [American] *race* is tainted with this disease, coming down to us through the ages, in obedience to the laws of heredity. Our fathers, from earliest history, were addicted to drunkenness."

The important truth in this statement is, that excessive expenditure of *nervous power* in one generation—and all *continuous* unnatural expenditure comes to be excessive—entails a less vitative constitution on our posterity. We cannot transmit what we do not possess. The disease is a *negation*—want of life, in which the subject of the want *seeks life*, '*more* life,' by recourse to the first stimulus at hand which will make him *feel* 'alive,' or the first narcotic that will make him *not feel* his defect of life. It is this double feeling—the desire for 'life,' the disgust of 'lowness'—which constitutes the mental disease, and it is surely created by one generation and inherited by another. It is not an 'inborn element,' but a generated defect in the parent, and an inherited *defect* in the child. As to 'civilization,' that is a mere word—a collective-abstraction, perfectly meaningless, and therefore partially misleading. It is *something* in a state of 'civilization' that must be the actual agency out of which the tendency to *inebriety* comes. What is that but the *action* of the drink? It is another thing altogether to ascertain what is the *cause* (or what are the conditions) which induce people to *take* the drink. That will be discussed in our chapter on the Philosophy of the Remedy.

Looking back at this mere sketch of the History of drinking amongst the nations of the world, it is no high coloured rhetoric to affirm that of all the curses that ever

visited this globe, Drink and Drinking are the most deadly. Fever and plague may ravage us, but they do not tarry; famine may come, but it is followed by plenty; while drink, worse than pestilence, sits and broods amongst us perennially, engendering a horrible offspring of sensuality and sin. Intemperance, in truth, is an *invited* visitor, the provision for whose banquet is made under sanction of Church and State,—for whose elements the authority of Holy Writ is blasphemously pleaded by the deluded victims, and whose distribution is made *legal* by the crooked and corrupting policy of legislators.

VII.

NATIONAL INTEMPERANCE AND REMEDY.

§ 1. In modern times, the United States of North America have the unquestioned honour of originating the first *systematic* and *organized* plan for the suppression of national Intemperance. Here, as in the motherland, it had been considered, by legislators and moralists alike, that the licence and supervision of the drink-traffic, the punishment of drunkards, and the fining of transgressing publicans, were all that could be done to repress intemperance, beyond the appeals of the moralist and the preacher.

The people of the Western Republic, however, untrammelled by the conservative and conventional habits of the old country,—unburdened by the dead-weight of enormous pecuniary interests,—unvitiated as yet by the despotism of fashion and the reign of an 'upper ten thousand,'—uncorrupted by the love of pleasure, by the influx of wealth and luxury, of war and speculation, of party politics and place-hunting (which are more recent developments)—were not disposed to accept the great curse as a thing of fate, absolutely necessary and inevitable. On the contrary, as a practical people, engaged in hewing out a new form of society and civilization, they set themselves to ascertain the *reason* of things being as they were, and *then straightway* began the work of reform. There *were*, of course, great difficulties in the road,—of interest, prejudice, appetite, and even fashion,—but these were neither so inveterate nor so

vast as in Great Britain, where a new truth has to fight its way over strongly entrenched interests, and the social *débris* of a thousand years. Besides, what were difficulties to the genius of a people who had just emerged, not only safely but triumphantly, from a long and terrible conflict for political independence, and had become a nation of sturdy republicans in spite of English king and oligarchy? So the notion of a needed reform, *of a work to be done*, having once been fairly injected into the minds of the people, they pursued, and are still pursuing it, and, it is to be hoped, with something of the steady, invincible zeal of their puritan forefathers. The occasions, rise, and advance, of this remarkable movement we have now succinctly to record. The enterprise has had its six stages, and is destined to its seventh, ere it reach the culminating point which shall usher in the crowning epoch of civilization.

1. A confused perception of the EVIL.
2. Attempts at *regulating* the machinery of mischief.
3. The Era of vague *Temperance.*
4. That of *Abstinence*, or Neephalism.
5. The *No-licence* agitation.
6. The break-up of party-bonds and the epoch of *Prohibitive State Law.*
7. Absolute and universal prohibition of the manufacture and sale by the *National Will.* This is now known as the 'Constitutional Amendment' agitation, which has already triumphed in several States.

We propose to give an outline of the American agitation, and of similar attempts elsewhere, in the hope of our people learning how better to deal with the evil.

FIRST STAGE.

§ 2. There was the period of chaos, when darkness brooded over the elements of social life in the United States. The freedom which the people exercised, at a period of great political and warlike excitement; the abundance of

their means; the cheapness of liquor, with an almost open traffic and other facilities for its purchase,—had produced their inevitable fruits. Notwithstanding national education and religious teaching for two centuries, the country was over-run with intemperance, the cities were flooded with disorder, the poorhouses filled with paupers, the jails crowded with criminals,—army, navy, and populace alike cursed with rum. Yet from the earliest period of the history of the States, the sale of liquor had been looked upon with suspicion, and some of the worst forms of it *prohibited.*

In the town records of East Hampton, Long Island, for 1651, is an order of a Town's meeting, "That *no man shall sell any liquor but such as are deputed thereto by the town;* and such men shall not let youths, and such as are under other men's management, remain drinking at unseasonable hours; and such persons shall not have *above half a pint* at a time among four men." In 1655, the authorities "ordered, for the prevention of drunkenness among the Indians, by selling Strong Water, *First*, That no man shall carry any to them to sell, nor send them any, nor employ any to sell for them; nor sell them any liquor *in the town* for the present drinking, above two drams at one time; and to sell to no Indians but such as are sent by the Sachem, and shall bring a written ticket from him, *which shall be given him by the town*, and he shall not have above a quart at a time."

BANCROFT, under the date of 1676, has a summary of a new constitution for *Virginia*, in place of the tyrannical one of the aristocratic-proprietary.

"*The sale of wines and ardent spirits was absolutely prohibited (if not in Jamestown, yet otherwise) throughout the whole country.*"

Hening, ii. 361: "*Ordinances to sell and utter man's meate, horse meate, beer, and cyder, but no other strong drink.*"

The 'History of Portland,' Maine, records that, "In Sept., 1681, Rd Seacomb was licensed to keep an ordinary

in Falmouth. The order of the court is as follows:—'In answer to the desire of the selectmen of Casco, in Mr Seacomb's behalf for licence to keep an ordinary there, the court, considering the necessity thereto, do *grant a liberty and licence to be granted* unto said Seacomb to keep a public house of entertainment for said town *for the year ensuing;* he providing for it as the place requires by suitable accommodation for strangers or others, of *drink*, victuals, and *keeping good order and rule by his retailing strong drinks*, to the performance thereof William Rogers with said Seacomb, stand equally bound in a bond of 20*s.*' In May, 1682, *he was fined* 50*s. for selling liquors to the Indians.*

§ 3. From the 'Acts and Laws' of His Majesty's Province of Massachusetts Bay in New England (Boston, 1742).

Acts passed November, 1693, *to February*, 1694.

"Act for *the better rule and Government of the Indians.* Penalty for selling them strong drink, 'by whatsoever name called,' trucked or delivered, 40*s.*, or two months' imprisonment. Save 'for relieving any Indian (*bona fide*) in any sudden exigent or sickness, not to exceed one or two drams; or by prescription of some physician.' *To the intent that murders and outrages may be prevented.* Strong drink *found* with Indians, to be seized."

Acts passed June, 1692.

Ch. vi. Provides, "*None to sell* strong drink publicly or privately without licence." Penalty, 40*s.* '*Licences to be renewed yearly.*' 'Games forbidden.' Penalty, 40*s.* "Penalty for refusing to give evidence against persons selling without licence, 40*s.*"

Acts passed May, 1694, *to February*, 1695.

Ch. ii. An Act for the more effectual suppressing of drunkards.

"Whereas divers persons that obtain licence for the retailing of *wine and strong liquors out of doors only*, do notwithstanding give entertainment to persons to sit drinking and tippling there; and others who have no licence, are yet so hardy as to run upon the law in adventuring to sell without; tending to the great increase of drunkenness and other debaucheries. Officers to *inspect* public-houses, and to *present* such as sell without" (licence). Licence *forfeited* upon third conviction. Neglecting to pay, to be set in the *cage* or *stocks.* "Selectmen to cause reputed drunkards *to be posted up.*"

Acts passed May, 1695, *to November following*:—

Ch. x. "Persons unable to pay the fine, *to be whipt, power to seize* drink found in unlicensed houses"; and to forfeit, if more than reasonable for *family use!*

1698. *William III.* (10th year).

Ch. viii. Penalty for entertaining *servants* or *negroes*. "No *inhabitant* to continue in public-houses above *one hour*, to sit drinking." Penalty, 10*s*. on publican, 3*s*. 4*d*. on drinker, or stocks for four hours. *Certificate* for one *year*; no *person to tipple after* 9 *of the clock in the night time. Tything men* to inspect, and be annually appointed.

1711. *Anne.* An act against Intemperance, Immorality, and Profaneness, and for Reformation of Manners.

"For reclaiming the *over great number* of licensed houses, many of which are chiefly used for revelling and tippling, and become *Nurseries of Intemperance and Debauchery*, indulged by the masters and keepers of the same, *for the sake of gain.*"

"List of names (of licensed persons) to be transmitted to the selectmen, *and none to be renewed who have not kept good order.*"

1720. *George I. Taverner to forfeit debts for victuals or drink for more than* 10*s*.

1726. Taverners not to give entertainments to *hawkers*, *pedlars*, and *petty capmen* [chapmen], on penalty of 20*s*.

In 1784, the Senate and House of Representatives passed an act containing all the chief clauses of the preceding laws:—

1. Licences to be renewed *yearly*.
2. No person to be licensed without a certificate from the selectmen.
3. No licence to a person *presented* for violation of conditions.
4. Penalty for gambling, or keeping *implements* of gambling.
5. For dancing, or revelry.
6. For suffering persons to drink to excess.
7. Not to license more persons *than necessary for the public good.*
8. Names of common drunkards to be *posted up* in the taverns, etc.
9. Selectmen to forbid licensed persons to sell spirituous liquors to *excessive drinkers*, and mis-spenders of time.

Here we see that *licence*, under the most favorable circumstances, and at that time in the most highly educated and religious community in the world, had its full and protracted trial; we have now to trace its utter failure.

§ 4. The business of making and distilling spirit commenced in Boston in the year 1700, when West India molasses were converted into New England rum. In 1794, the distillation of *whisky* from rye commenced in Western Pennsylvania.

The same story is to be told of the States of New York and Pennsylvania. *A popular superstition aggravated the evil of social temptation.* In 1805, the *Evening Fireside*, published in Philadelphia, contained a series of papers on this topic, by JOHN WATSON, which were republished in 1810, in two volumes, entitled—'Observations on the Customary use of Distilled Spirituous Liquors, particularly Addressed to the Inhabitants of Pennsylvania, and also to the People of the United States generally.'

1700. In the autumn, fever and ague prevailed. "Nurses and attendants were recommended to use drams, either raw or sweetened, or mixed with bitters, as antidotes against offensive and infectious smells." Once admitted as medicine, the use established itself as a *custom.* It became a symbol of hospitality, indispensable at weddings and 'vendues' (sales). "And as it had been customary in the parent country to give hot spiced wine, or ale and cakes, at *funerals*, so (here) hot rum and water, sweetened with sugar, became the substitute" (p. 7). "Actual drunkards and sots were alone considered as transgressors, *and every inferior degree* was deemed only as the *necessary* use!" Legislation was then tried.

1710. "No public-house to be kept except the publican be first recommended by the Quarter Sessions to the governor *for his licence.*"

1721. Minors and servants protected against publicans. A meeting was called in the city to take into consideration "the *prevention* of the sale of spirituous liquors." Beer was proposed as a substitute!

1723. Bill introduced in the House of Assembly for the *encouragement* of *distilleries.* Governor refused consent.

1737. An eccentric, illiterate, but earnest 'sailor' BENJAMIN LAY, having seen the horrid effects of rum in Barbadoes, publishes a pamphlet against it, as a thing tending "to destroy the people and ruin the country."

1744. Grand jury present the enormous *increase* of public-houses as '*a great nuisance.*' *

1750. The large quantities of liquors distributed at vendues *became so manifest an evil in its consequences*, that petitions were presented to the legislature, and an act was passed *to prohibit* the giving of spirits, under a penalty of £4 for the first offence, and for the second and every subsequent offence, £5. In one instance, twenty gallons of rum were drunk when less than £200 worth of goods were sold. The sellers *evaded* the law by adjourning the vendue, and drinking the rum afterwards.

1756. Duty laid on imported liquors; and in 1772 extended to home-made.

1760. Religious societies began to protest against drink at funerals. The 'Friends' abolished the practice soon. Clergymen refused to officiate where introduced.

1777. For some time, the still-houses, selling in small quantities as well as large, had been regarded as consummate curses. The clergy had denounced "*the cursed cup of perdition*—those maddening draughts of spirituous liquors so *cheaply* procured from our Island Colonies." † They argued against the waste of grain in distillation, and at length, the troops being in want of food, *the legislature put a stop to distillation altogether.*

§ 5. In 1778, a tract of twelve pages appeared at Philadelphia, entitled, 'Remarks on the Nature and Bad Effects of

* *The curse had come home.* In 1762, besides Wharton's great still-house, there were six others in full blast. In 1810, Pennsylvania had 3,334 (distilling six and a half million gallons) out of 14,191 in the States (distilling twenty-three millions). In 1826, the amount had reached sixty millions!—destroying twenty million bushels of bread stuffs.

† Watson's *Annals of Philadelphia*, i. p. 463.

Spirituous Liquors, collected by ANTHONY BENEZET,' which gave the opinions of Dr George Cheyne, and other English physicians. After detailing the evils of "these *infernal* spirits," he asks—"How much, then, is it the bounden duty of those who have it in their power to *withhold* this destructive Man-bane, either as parents, masters, or RULERS OF THE PEOPLE committed to their trust?"

As the mantle of good illiterate Benjamin Lay fell on pious Anthony Benezet, so, in turn, his mantle descended upon that good physician and patriot, BENJAMIN RUSH, who has been rightly called 'The Morning Star' of the Temperance Reformation.

WATSON puts the case thus, in reply to 'the deleterious reasoning with which self-interest endeavours to defend itself.'

"If all the *effects* that had arisen from the use of a single hogshead of spirits *could be brought to pass in review*, the spectacle would be sufficient to settle the point of right or wrong" (p. 29).

"The *most powerful obstacle* to the progress of this good work [of reform] is the *contiguity* of a certain description of stores and taverns, called *dram-shops*. The quantity of liquor drunk by those who have a propensity for it, *will always bear some proportion to the facility of getting it*. This fact is sufficiently proved by daily experience."

Shortly before the declaration of Independence (July 4, 1776), the evil of *distillation* attracted the notice of the patriots. At their first Congress in Philadelphia, February 27, 1777, the following resolution appears to have passed unanimously:—

"*Resolved*, that it be recommended to the *several legislatures* in the United States, immediately to pass laws the most effectual for putting an *immediate stop* to the pernicious practice of *distilling grain*, by which the most extensive evils are likely to be derived, if not quickly prevented."

Dr BENJ. FRANKLIN, Dr RUSH, and other signers of the Declaration of Independence, were members of this congress. In March, 1788, an act passed the Legislature of New York

State, entitled "An act to lay a duty on strong liquors, and *for the better regulation of inns and taverns.*" It provided that Commissioners of Excise should *not grant permits* * to any person to sell strong drink and spirituous liquors for the purpose of keeping a tavern, unless it should appear to them that such inn or tavern was *necessary* for the accommodation of travellers, and that the person applying for the permit was of *good character;* and that no person should sell strong drink, or spirituous liquors *to be drunk in his house, without first entering into a recognizance not to keep a disorderly house,* —and that if any person shall be convicted of any offence against this act, it should be lawful for the Court of General Sessions to suppress his permit.† *Clearly the old laws acknowledge that the sale of liquor, without a special permit from the State, is a social offence.*

§ 6. About this time Rhyme was called to the aid ot reason in promoting the new movement, from which such vast and unforeseen results were to flow. PHILIP FRENEAU, 'the poet of the Revolution,' was perhaps also the first poet of the social Reformation.‡ His life is interesting, and his poems doubtless did much to inspire his countrymen in their patriotic struggle for independence. He was of Huguenot descent, and born in New York City, January 2, 1752. Died in Monmouth County, New Jersey, December 18, 1832. He graduated at Princeton College in 1771. Very early in life he manifested a talent for versification.

* Here was a Permissive Bill in principle, and as the next note shows, another Permissive Act was passed for *another* body to *stop* the 'permission' to grant!

† A similar act was passed *April 7th*, 1801, which *prohibited the sale of spirituous liquors by retail, or to be drunk in the house of the seller*, and restrained and limited the power of the Commissioners of Excise *in granting* licences; and contained a further provision, that all offences against any of its provisions shall be deemed *misdemeanors*, punishable by fine and imprisonment. This act was embodied in the New York Revised Laws of 1813.

‡ *Vide* his 'Revolutionary Poems' with memoir and notes by E. A. Duychink (New York, 1865).

During the War for Independence he was in the West Indies, and while on a voyage in 1780, was captured by a British cruiser. After his release he wrote the following :—

THE [TERRA COTTA] JUG OF RUM.

WITHIN these earthen walls confined
The ruin lurks of human kind ;
More mischiefs here united dwell,
And more diseases haunt this cell,
Than ever plagued the Egyptian flocks,
Or ever cursed Pandora's box.
Within these prison walls repose
The seeds of many a bloody nose,
The chattering tongue, the horrid oath,
The fist for fighting nothing loath,
The nose with diamonds glowing red,
The bloated eye, the broken head !
For ever fastened be this door !
Confined within, a thousand more
Destructive fiends of hateful shape
Even now are planning an escape.
Here, only by a cork controlled
And slender walls of earthen mould,
In all their pomp of death, reside—
Revenge that ne'er was satisfied—
The tree that bears the deadly fruit
Of maiming, murder, and dispute ;
Assault, that innocence assails,
The images of gloomy jails,
The giddy thought on mischief bent,—
The evening hour in folly spent—
All these within this jug appear,
And—Jack the hangman in the rear !
Thrice happy he who, early taught
By nature, ne'er this *poison* sought ;
He, with the purling stream content,
The beverage quaffs that nature meant.
In reason's scale his actions weighed,
His spirits want no foreign aid ;
Long life is his in vigour passed,
Existence welcome to the last—
A spring that never yet grew stale,—
Such virtue lies in *Adam's ale !*

The Republic having proclaimed its Independence, the Churches naturally followed, and the Methodists of America, at a Conference in Baltimore, in the year 1784, organized themselves as 'The Methodist Episcopal Church.' They adopted Wesley's practical Rules, including the one concerning dram-drinking, making Abstinence an *organic law* of the Church. As far back as May, 1743, Wesley had called upon his disciples to "*evidence* their desire for salvation by avoiding evil of every kind—such as drunkenness, *buying or selling liquors, or drinking them*, unless in cases of extreme necessity." (See Works, iii. p. 282, and elsewhere.) The year before 64 persons in Newcastle had been expelled the Society, 17 for inebriety, and two for selling drams. On Christmas Day, 1744, Mr Wesley drew up some additional directions, of which the second was in these words:—"To taste no spirituous liquors; no dram of any kind, unless prescribed by a physician." And it may be noted, that Crowther, in his 'Portraiture of Methodism,' records that "Dr Fothergill himself said, he *had made many drunkards*, having advised persons in certain complaints to drink a little spirit and water: but what they used at first as medicine, they continued to use from contracted taste." The American Methodists in 1780 had also adopted a rule against the wickedness and waste of distilling grain.

The re-organized body adopted the old rule in these words:—"May our ministers, or travelling preachers drink spirituous liquors? *Ans.* By no means, unless it be *medicinally.*" This led afterwards to evasions, and to discussions, and we find the following concerning the Conference of 1788, recorded in the 'Life of the Rev. Jesse Lee':—

"During the session, the celebrated Dr Rush visited it, and delivered an animated address on the use of ardent spirits, *taking the broad ground so strongly occupied by the Conference*, and since so signally taken and maintained by the Temperance Reformation, that TOTAL ABSTINENCE IS NO LESS THE DEMAND OF OUR NATURE THAN IT IS THE

RULE OF OUR SAFETY. It had the effect of producing fear where great caution had long existed" (p. 211).

§ 7. The year 1789, we believe, is marked by the formation of the *first* Temperance Society of modern times. The *Federal Herald* for July 13, 1789, printed at Lansingburgh, New York State, notices the fact in these words :—

"Upwards of 200 of the most respectable farmers of the "county of Litchfield, Connecticut, have formed an *associa-* "*tion* to discourage the use of spirituous liquors, and have "determined not to use any kind of distilled liquors in doing "their farming work the ensuing season" (Vol. iii. No. 74).

About the year 1790, there was published in Philadelphia, a thin volume of 'Sermons on Intemperance,' apparently written by a physician,—we believe, Dr RUSH,—which seems to have attracted attention, and eventually to have led to a remarkable and most influential proceeding on the part of the medical profession of that city.

DELETERIOUS EFFECTS OF DISTILLED SPIRITS ON THE SYSTEM.

Communicated to the Senate, December 29th, 1790.

To the Senate and House of Representatives of the United States, the memorial of THE COLLEGE OF PHYSICIANS in the city of Philadelphia, respectfully showeth :—

That they have seen with great pleasure the operation of the National Government, which has established order in our country.

They rejoice to find, among the powers which belong to this government, that of restraining by certain duties the consumption of distilled spirits in our country.

It belongs more peculiarly to men of other professions to enumerate the pernicious effects of these liquors upon morals and manners. Your memorialists will only remark, that a great portion of the most obstinate, painful, and mortal disorders which afflict the human body are produced by distilled spirits ; and they are not only destructive to health and life, but they impair the faculties of the mind, and thereby tend equally to dishonour our character as a nation, and degrade our species as intelligent beings.

Your memorialists have no doubt that the rumour of a plague, or any other pestilential disorder, which might sweep away thousands of their fellow-citizens, would produce the most vigorous and effective measures in our government to prevent or subdue it.

Your memorialists can see no just cause why the more certain and extensive ravages of distilled spirits upon life should not be guarded against, with corresponding vigilance and exertion, by the present rulers of the United States.

Your memorialists beg leave to add further, that the *habitual use of distilled spirits, in any case whatever, is wholly unnecessary;* that they neither fortify the body against the morbid effects of heat or cold, nor render labour more easy or more productive; and that there are many articles of diet and drink, which are not only safe and perfectly salutary, but preferable to distilled spirits for the above-mentioned purposes.

Your memorialists have beheld with regret the feeble influence of reason and religion in restraining the evils which they have enumerated. They centre their hopes, therefore, of an effectual remedy for them in the wisdom and power of the legislature of the United States; and in behalf of the interests of humanity, to which their profession is closely allied, they thus publicly entreat the Congress, by their obligations to protect the lives of their constituents, and by their regard to the character of our nation and to the rank of our species in the scale of being, to impose such heavy duties upon all distilled spirits as shall be effectual to restrain their intemperate use in our country. Signed, by order of the College, JOHN REDMAN, *President.*

Attest, SAMUEL POWELL GRIFFITHS, *Secretary.*

§ 8. At last the enemy was fairly unmasked, and assailed in the stronghold of popular prejudice, by that very agency most likely to be successful. The ice once broken, Dr RUSH cast aside all reticence, and in 1794 issued his 'Medical Inquiries into the Effects of Ardent Spirits upon the Human Body and Mind,' and announced the doctrine of *abstinence*, which ultimately became the basis of a radical reformation. After combating the errors of popular opinion, and enumerating some of the chief diseases engendered by the *use* of ardent spirits, he says: "It would take a volume to describe *how much* other disorders, natural to the human body, are increased and complicated by them. *Every species of inflammatory and putrid fever is rendered more frequent and more dangerous by the use of spirituous liquor.*" He thus struck boldly at the double superstition,—the virtue of alcohol as diet, and its prophylactic power as medicine. These papers excited inquiry, gradually attracted the atten-

tion of reflecting men in his own profession, and, finally, of the reading public.* (In 1805, he reproduced these views in a popular pamphlet which had a wide circulation.)

In 1797, the Quarterly Episcopal Methodist Conference of Virginia passed unanimously the following resolution :—

"*Resolved*, That we, the members of this Conference, do "pledge our honour, as well as our word, as Christians, not "only to abandon *entirely* the use of ardent spirits ourselves, "except as a medicine, but also to use our influence to "induce others to do the same."

§ 9. The question was now fairly before both the church and people. Sermons and pamphlets began to issue from the press and to stir up the earnest Christians and Patriots of the young Republic.† A popular clergy took the lead. In 1811 we find the Rev. STEPHEN BADGER, of Natick, preaching from Ephes. v. 18, a sermon full of wise sayings :—

"Let it be your prayer to be filled with the *good spirit* which the Gospel breathes, to abound in those fruits which are produced by the Divine Spirit, for *in these there is no danger of excess:* the influence of this spirit will enable you to restrain your animal propensities, and to keep them in

* Hope, too, in the shape of prohibition, at last came to the drunkard. The following was advertised in the papers of the day. We may hear in it the heart-voices of thousands of victims, crying to Society, as all men cry to God : *Deliver us from evil!*

"Whereas, the subscriber, through the pernicious habit of drinking, has greatly hurt himself in purse and person, and rendered himself odious to all his acquaintance; and finding there is no possibility of breaking off from the said practice *but through the impossibility to find the liquor, he therefore begs and prays that no person will sell him for money, or on trust, any sort of spirituous liquors*, as he will not in future pay for it, but will prosecute any one for an action of damage against the temporal and eternal interests of the public's humble, serious, and sober servant,

"JAMES CHALMERS.

"NASSAU, *June 28th*, 1795. Witness, WILLIAM ANDREWS."

† In the 1871 edition of this *Text-Book* we gave a fuller account of the American and English Reformation than we shall give in this edition : reserving the material, gathered with much care, for a fuller history in subsequent volumes.

proper subjection to the higher power of reason, and to the precepts of God's word." He asserts that the text does not *require* total abstinence; but "guards against using them *to such a degree* as to injure health, impair strength, and *in any measure* indispose and unfit us for the conscientious discharge of the duties of life and religion. Let us remember that the exact boundaries between sobriety and intemperance *are so imperceptible*, like the shades in a picture or the colours of a rainbow, that it is difficult precisely to determine where the one ends and the other begins; and that therefore, it will be the *wisest* and the *safest* to keep at a distance from the utmost limits. 'Who hath woe? They that go to *seek* mixed-wine.' The same is true of *any other* mixed liquors of an *intoxicating quality*" (p. 22).

WATSON, the historian of Philadelphia, records that "about the year 1805, a number of persons interested in the paper manufacture *associated themselves together* for the purpose of improving their art, and ameliorating the condition of *worthy unfortunate journeymen* and their families. The latter object naturally led to a consideration of the *causes of misery and poverty* among those people; and it was soon *discovered* that objects of charity which had not become so by the excessive use of strong drink *were so rare*, that this humane part of the institution would remain *a dead letter*, or be so seldom exercised that its usefulness could never be realized." With one heart and voice, therefore, this company agreed to put forth every possible effort "to *restrain* and *prohibit* the use of ardent spirits in their respective mills."

§ 10. The *second* modern Temperance Society was instituted in Moreau, Saratoga Co., N.Y., on the 13th of April, 1808, under the appellation of 'The Union Temperance Society of Moreau and Northumberland.' Dr BILLY J. CLARK was the originator of this *social union* for suppressing the tyranny of *social custom*. The effort, however, remained local, though indicating the wholesome fermentation going

on in the public mind. Mr HOWELL GARDNER, in the New York *Observer* (March 9, 1841), states that he and a few other friends organized, on the principle of abstinence from spirits, the Society of *Greenfield*, Saratoga Co., N.Y., on the third Wdenesday in April, 1809; that in 1814 they republished a pamphlet advocating that principle; that in 1815 he built the dwelling-house in which he resides, by special contract that no ardent spirits should be furnished to the men; and that he has worked his farm on that principle since 1808.

We thus see that philanthropists, senators, and the better part of the people, had become aware of the danger which threatened the commonwealth; and they asked themselves the question, If this agent of disease, this physical, moral, and social pestilence goes on unchecked, what will be the end? At last, the essential evil of the *drink* was perceived, and the 'throne of iniquity'—the legalized machinery for disseminating the evil—rose dimly before the sight. They had before blamed the dram-*shop* rather than the *dram;* now, the more fundamental truth was being enforced, that it was *the dram that characterized the shop*, and gave to it its *peculiarity* of seduction and sequence; while the correlated truth also emerged, that the licensed Liquor Shop was the agent of Temptation,—that THE LAW was at once the hand that planted the powder and fired the train.

THE SECOND STAGE.

§ 11. Out of these workings of thought the second epoch had come,—that of *systematic regulation.* New social truths rose into distincter view. The truth had been partly perceived, indeed, long before. In 1657, the town of Northampton, Massachusetts, voted to devise means to prevent the excess in liquors and cider from coming to the town; and when the first barrel of rum arrived at Norwalk, Connecticut, the selectmen declared, "It will corrupt our morals and be our undoing." In 1725 the proprietors of

the iron works near Philadelphia petitioned the Assembly to pass a law "to prevent any person from retailing liquors near their works." But it was at last generally seen *that the licensed drink-house is a licensed snare;* and that the proposition, "the more grog-shops, the more drunkenness, pauperism, and crime," expressed a connection as certain as any other social law. In 1818–19, the authorities of New York largely reduced the number of *retail* grog-shops. In 1820, the report of the Society for the Prevention of Pauperism in New York cites this testimony of the Mayor: "The effect is very obvious; drunken people are much seldomer seen in our streets. It has had a very important influence on the morals of the community, and lessened the number of crimes. Crimes have numerically decreased, and comparatively have very greatly diminished. This *great benefit to the community* is chiefly to be imputed to THE SUPPRESSION OF SO MANY OF THESE POISON-SHOPS, where a man might buy rum enough to make himself beastly drunk for *six cents.*" But such a mode of action depended upon the varying whim, moral tone, and circumstances of various districts, and was itself so partial that it could not permanently stem the demoralizing stream which swelled up and swept on, carrying upon its fiery bosom the wrecks of home, health, and social prosperity. It was officially stated, "that *three-fourths* of the assaults and batteries committed in the city and county of New York, and brought before the Court of Sessions, proceed from the degrading use of ardent spirits." All this, recollect in a land of 'liberty' and 'education.' In fine, the facts proclaimed that regulation was a nullity and a failure. New York was no exceptional city at that time; it was a type of the whole country. The curse had eaten into every department of life; church and college, camp and 'change, the marine and the civil-service, were alike infected.

§ 12. The politico-economical relations of the question just before the birth of the present movement, in 1826, may

be gathered from calculations published, in 1827, by Judge CRANCH :—

UNITED STATES.—"Annual consumption of *spirits*, 72,000,000 gallons; cost to consumers, $48,000,000. The number of drunkards, 375,000; at least 100 days of their work annually lost to the State, which may be estimated at $5,000,000. 37,500 drunkards annually die, their lives abridged by ten years on the average. Loss to the State (reckoning the profit of their labour, had they been sober, at $50 a year), $13,000,000. The expenses of criminal justice amount to $7,000,000 a year. Drunkenness produces three-fourths of the criminals, hence $5,000,000 more to the debit of intemperance. Pursuing these calculations on the same principle as regards the poor, who become so through drunkenness, the loss of the labour of the criminals shut up in prison, etc., probably $100,000,000 sterling is the total loss suffered by the country in consequence of the use of strong drinks."

The population at this time did not exceed 12,000,000, and wine, cider, and beer were not included in these estimates.

§ 13. To show how education, and other social *panaceas*, have failed to meet, much less to cure, the evil, compare these facts with the condition of things *now*, after 40 years of temperance agitation, and 16 years of prohibition in several States. Though some districts possibly drink as much now as then, and others certainly consume far less, yet the national result is not satisfactory. As to the perpetual increase in the consumption of liquors in the United States, Dr EDWARD YOUNG, chief of the bureau of statistics, writes as follows :—

"WASHINGTON, *August 16th*, 1871.

The following is an estimate of the sale of liquors during the fiscal year ended June 30, 1871 :—

Whisky—60,000,000 gallons, at $6 retail	$360,000,000
Imported spirits—2,500,000 gallons, at $10 retail ...	25,000,000
Imported wine—10,700,000 gallons, at $5 retail ...	53,500,000
Ale, beer, and porter—6,500,000 barrels, at $20 retail	130,000,000
Native brandies, wines, and cordials—quantity unknown	31,500,000
	$600,000,000

There were 146,000 retailers of liquor in the United States. By including those who escaped paying licence fees, estimated at 4,000, the number is increased to 150,000, who, on an average, sold at least $4,000 worth of liquors each, making $600,000,000. These figures are sufficiently startling, and need no exaggeration.

The influx of Chinese has introduced a new luxury, viz. : Opium prepared for smoking, the importation of which for the last fiscal year was 315,121 lbs., of the value of $1,926,915."

Can we doubt, then, that education, franchises, wealth, free land, religious teaching, temperance lectures, and strict and varied *regulation* and *licence*, are *inadequate?*

The Third Stage.

§ 14. At the opening of the century, the social condition of the States was gloomy enough, but still the friends of morality and order worked on. Trumpet notes were heard over wide districts of the country, indicating the existence of a hope and a purpose, which only needed to be known in order to become mighty by association.

1811. Dr Rush presented the General Assembly of the Presbyterian Church convened in Philadelphia, with 1,000 copies of his 'Inquiries.' The synod, in consequence, passed a resolution authorizing a committee to correspond and act in concert with any persons who may *associate* for the purpose of averting "the threatening mischiefs experienced throughout our country by the excessive use of spirituous liquors," and to report. In 1812, a report was adopted, which recommended *all* ministers of the Presbyterian Church *to deliver public discourses* as often as circumstances may render it expedient, on the sin and mischief of intemperate drinking, and to "warn against all those habits which may have a *tendency to produce*" intemperance, and to circulate sermons and tracts against the *use* of ardent spirits. Here we perceive the importance of associated effort rising into view, and the *causation* of the evil beginning to be investigated. The recommendation to preach against the evil was adopted far and wide.

§ 15. A sermon on '*A Reformation of Morals Practicable and Indispensable*,' was delivered at New Haven in the evening of October 27, 1812, by LYMAN BEECHER, M.A., Pastor of the first Church in Litchfield. (Andover: Flagg and Gould, Printers, 1814. 2nd Ed., pp. 32.) The preacher says:—"Other efforts of the same kind have been crowned with success. A society was established in London, about 1697, to suppress vice by promoting the execution of the laws." He quotes the historian as to its power, at a time when "it was reckoned breeding to swear, gallantry to be lewd, good humour to be drunk, and wit to despise serious things."

"Notwithstanding a furious opposition from adversaries, and the unkind neutrality of friends, these gentlemen not only held their ground, but made advances into the territory of their enemy. The society, commencing with five or six, soon embraced numbers, and persons of eminence in every station. In imitation of this society, other societies were formed in every part of the city, and among the sober of almost every profession. *The effects of these combinations were favorable beyond the most sanguine expectations.* . . . From their vigilance and promptitude the growing vices of the day were checked, insomuch that it was soon found difficult to detect a single criminal in the streets and markets, where a little before horrid oaths, curses, and imprecations might be heard day and night. *Multitudes* of drunkards, profaners of the Lord's day, besides hundreds of disorderly houses, *were brought to justice and such open vices suppressed.* These associations soon extended to most of the principal towns and cities of the nation, to Scotland and Ireland, so that a great part of the kingdom have been awakened in some measure to a sense of duty, and *thereby a very hopeful progress is made towards a general reformation.*" (See the *Christian Observer* for the years 1810–12. The Lord Chief Justice of England commended such a society established in 1802.) "The *whole army* of conspirators against law and order must be brought out and arrayed before the public eye, and the shames, and the bondage, and the woe they are preparing for us. This exposition of public guilt and danger is the appropriate work of gospel ministers. They are *watchmen* set upon the walls of Zion, to descry and announce the approach of danger" (p. 13).

"*Our vices are digging the grave of our liberties*, and preparing to entomb our glory. We may sleep, but the work goes on."

§ 16. In 1813 we find published the '*Constitution of the Massachusetts Society for the Suppression of Intemperance*,' and Report of the Board of Counsel, prepared for the Anniversary of the Society, May 28. (Boston: printed by T. Armstrong, 50, Cornhill.) Part II. runs thus: "The object of the Society shall be to discountenance and suppress the *too free use* of ardent spirit, and its kindred vices, profaneness and gambling." The idea was not yet generally grasped, *that the operation of the drink was the cause of the too free use;* but it was beginning to be perceived. The Hon. S. Dexter was President, and Dr John Warren (whom we knew) Vice-President. Among the counsellors were John Lathrop, D.D., Samuel Worcester, D.D., Jeremiah Evarts; among the members we find the names of W. E. Channing, afterwards so celebrated; Dr Reuben D. Mussey, of Salem; John Tappan, and Dudley A. Tyng. The aim is thus stated:—"To render it *reputable* for labouring people, and those who employ labourers, to substitute for daily use, good and wholesome drinks in the place of pernicious liquors, and for all classes of people to *refrain* from the practice of offering ardent spirit to all who come into their houses; gradually, in a word, *so to gain upon public opinion and upon general habits*, as, ere long, to array them against intemperance and its kindred vices."

"Official intelligence has been given to the board of the existence, in this commonwealth, of two societies, one at Portland, the other at Saco (Maine), instituted for purposes in accordance with the design of this Institution. The society at Portland was at first designed by way of experiment for one year. During the year it operated with considerable effect; and at the close of the year, a few weeks ago, its continuance was unanimously voted. The operations of the society at Saco have been vigorous and successful. The Board has also been informed of *five or six other societies* of a similar kind, respectable in numbers and character, and of very encouraging promise" (p. 7).

§ 17. In this year Mr Evarts, as editor of *The Panoplist* (Boston), published six excellent articles on the topic of

the new reform. '*An Address to the Churches and Congregations of the Western District of Fairfield County*' (New Haven: 1813, pp. 32), chiefly written by the Rev. HEMAN HUMPHREY, contains the earliest distinct enunciation of the doctrine of abstinence from *all* intoxicants, and of the complementary remedies for intemperance.

"*The ravages of this sin are only streams—habitual drinking is the fountain:* and while the fountain remains, the hope of stopping the streams is vain—the hope of an ideal. Were the present race of drunkards annihilated from the earth, would not our *habits* make more? How long before another crop would spring up to burden our land, blast our welfare, and multiply widows and orphans among us? These ravages the world has seen—has looked on with astonishment, and despaired of a remedy. Citizen after citizen has become infected—and nothing is done. DRINKING HAS RAPIDLY INCREASED, TILL LIQUOR IS EVERYWHERE. No other people ever indulged so universally, from the highest to the lowest, in their use of ardent spirits, as the people of *this* country, *i.e.* the *free, educated,* and *religiously* disciplined citizens of New England. Dram-shops are multiplied, so that in a Christian land, these altars of Bacchus immeasurably outnumber the temples of the living God. Not only do *men* drink, but *women* also; and even *children* are early initiated into the schools of intemperance. Their natural antipathy to spirits is cheated and overcome by a plentiful admixture of sweets. Thus the barrier which nature has erected to keep them from drunkenness, a parent's hand removes."

Under Part II., rum is shown to be destitute of nourishment, debilitating in hot and dangerous in cold weather.

"Some few scattering individuals are still left that use no spirit, and they are noted in their neighborhoods *for tiring out all that labour with them.* . . . Look back to the third generation, when liquor, in the field of labour, was utterly unknown. *What was then the work of one day now requires two for its performance.* The well attested accounts of what their grandfathers did, the present generation regards as the mere fables of doting old age. Let them attempt the piece which was their grandfather's day's work. At night, while they looked round with vexation upon what was not finished, they would find whether the present generation had been made strong or weak by rum. If ardent spirits assist in study [brain work], why is it that in the Colleges of New England, ardent spirits are *totally prohibited* by a permanent law?

. . . Drinking spirit is a gradual descent, where every inch increases the declivity and quickens the progress, so that none turn again, neither take they hold on the paths of life. Look to the whole history of drinking, *and if it does not give to these conclusions the clearness and force of demonstration*, what could?"

Part III. expounds the ravages of *strong drink* (both wine and spirits) in regard to health, temper, understanding, property, and perdition. In 1810, not less than thirty-three and a half millions of gallons of distilled liquors were consumed by seven and a quarter millions of people—*or nearly four and a half gallons of spirits* (to say nothing of beer, wine, and cider) to every man, woman, and child in the nation! This distilled and burning spirit, would fill a canal ten feet wide, two feet deep, and forty-two miles long! How deeply must such a beverage have drained away the vitality, and dulled the moral sense, of the people.

Part IV. proceeds to consider "what can be done to remove the evils *already* felt; to check the torrent that is sweeping us away, and dry up the streams by which it is fed?" Here is the significant, and to us instructive fact, that instead of the secular and religious education of New England having *prevented* intemperance, it was the most highly educated States of the modern world that first perceived the *necessity* of the temperance reformation, and first established societies for the purpose of carrying it on. The following passages open out the whole question, *and for the first time in modern times*, propound the full and true remedy:—

"Before we venture to propose remedies, it seems necessary to investigate the *nature* and *causes* of the disease. Whence is it, then, that drinking has become so common?

(*a*) Multitudes learn to drink, first moderately, and then to excess, by using spirits *as a medicine*. 'I have known,' says Dr Rush, 'many men and women of excellent characters and principles *betrayed by occasional doses* of gin and brandy *into a love of those liquors*.'

(*b*) Domestic trials, hypochondriacal affections, loss of property, and

the like, produce despondency in many. Under these circumstances, not a few madly attempt to drown their sorrows in the wide, troubled sea of intoxication!

(*c*) To the unfaithfulness, timidity, and temporizing policy of *Informing Officers* and *Magistrates*, may be traced many of the evils we deplore. Had *the laws* been faithfully executed when hard drinking began its desolating career, the flood would never have risen to its present height. *It is by parleying and temporizing, that we are brought to the brink of ruin.* It is because so many of our *Sentinels* have slept at their posts, or would not maintain them, that the *enemy* has been able to break into the camp, and is carrying on the work of death in every part of it. . The informing-officer excuses himself by saying that *he* does not see the men drink; and the magistrate by saying that no *presentments* are made! Hard-drinkers walk or stagger on every side; they lie at the corners of the streets at noon-day, and nobody complains or prosecutes.

(*d*) To the great and increasing number of *taverns* and *dram-shops*, may be traced many of the evils of intemperance. *They are at once causes and effects of these mischiefs.* While they strongly indicate, they greatly increase, the disease. It cannot be *safe* to provide so many *facilities* for hard drinking. It is an undoubted fact that at least *three-fourths* of the places where liquor is sold are *fountains of corruption*, whence flow in every direction streams not to fertilize and cheer, but to curse the land with barrenness and death.

(*e*) *Dulness* is another legitimate parent of intemperance. 'An idle man's mind is the devil's workshop.'

(*f*) The *countenance* which has been incautiously given, in worthy and serious families, to a 'friendly use' of spirits, has contributed not a little to swell the tide that roars around us. 'Come,' they say, 'do taste *a little!*' Rather than be thought guilty of an unpardonable breach of politeness, *those who at first decline, in most cases finally yield.* Thus are the temperate oftentimes over-persuaded, till they come, by degrees, to love the sling, or the cordial, much too well.

(*g*) A large part of the woes and waste of intemperance may be distinctly traced to the *distilleries*, with which our whole land is burdened. . Who is so ignorant as *not* to know that wherever a *still* is set up, it soon forms around itself a kind of intoxicating atmosphere? How do the fiery streams which issue from it, like the melted lava from the flaming crater of a volcano, spread desolation and death wherever they flow! Thousands of bodies and souls are annually destroyed. What are the benefits which can compensate the *Community for such a waste of its vital strength*, and such a drawback upon its population?

The idea that our wound is incurable must not be indulged for one

moment. Unquestionably, the sober and virtuous members of the community, *have it in their power to mitigate*, if they cannot at once *cure*, the disease. The

(1) REMEDY we would suggest, particularly to those whose appetite for drink is strong and increasing, is A TOTAL ABSTINENCE FROM THE USE OF ALL INTOXICATING LIQUORS. This may be deemed a harsh remedy, but the nature of the disease absolutely requires it.

(2) Let those who are yet temperate, and desire to continue so, AVOID ALL PLACES OF TEMPTATION, such as taverns and stores where ardent spirits are kept and offered, either gratuitously or for sale.

(3) The late formation of a general SOCIETY in this State, promises to be a powerful engine to PUT DOWN DRAM-SHOPS and arrest the progress of intemperance. A few prosecutions would go far towards clearing the most thronged grog-shops, and many who are beginning to fall would be saved from utter ruin. [If the tavern be *kept* down.] To prevent the abuse of licences, it should be an invariable rule with the authority of each town, *never to renew the licence of a man who has* ONCE *been convicted* of abusing his privilege . . . No Society of the above description can go into operation without drawing upon itself the bad wishes of corrupt and dissolute men. *It is an honour to be opposed by the devil and all his adherents.*"

§ 18. From 'An Address of the Western Association of New Haven County,' published about this time, we learn that "Men of character are extensively uniting their exertions to check the growing evil. This appears by the documents published, and the measures adopted, by the General Assembly of the Presbyterian Church, the Convention of Ministers in Vermont, the General Association of Massachusetts, of New Hampshire, and of this state (Conn.). A committee has been appointed by the *Medical Convention* of Connecticut, to inquire and report on this subject. Immense evils afflict communities, *not because they are incurable, but because they are tolerated;* and great good remains often unaccomplished, merely because it is not attempted" (p. 11).

In a '*Sermon delivered before the Massachusetts Society for the Suppression of Intemperance*,' at their Annual Meeting in Boston, May 27, 1814, by John T. KIRKLAND, D.D., President of the University of Cambridge (Boston: printed by John Eliot, 1814), we find passages that almost anticipate

Prof. SEELEY'S *Ecce Homo.* What will education-mongers say to the following?

"We naturally ask, how it happens that our accumulated *moral means*, and especially Christianity, fail to do that *for us*, which a false system of religion, *or the exercise of reason*, or the power of opinion and law, *have* been able to do for the Greeks and Romans, the Asiatics generally, and the followers of the Arabian pretender? *Do we not believe our religion with that sufficient fulness of assent and power of conviction to render it effectual?* Do we misapprehend its nature and design; viewing it too much *as a theory of articles* of faith, and a grant of privileges, and too little as a code of laws and a guide to virtue? Is the *progress of intellect attended with danger to morals;* and have superior knowledge and acuteness served to furnish ingenious apologies for vice, and *helped men to a latitude of interpretation* on the subject of their duty, and resulted in imparting only sufficient light to enable them to wander out of the way?"

An '*Address delivered before the Massachusetts Society for Suppressing Intemperance*,' May 31, 1816, by Jesse APPLETON, D.D., President of Bowdoin College (Boston), says:—

"Regarding the subject merely in relation to political economy, the suppression of intemperance imperiously claims the attention of the statesman and patriot. But this diminution of wealth, vast as it really is, may be regarded, perhaps, as among the most moderate even of the political evils resulting from the vice. If we estimate this enormous sum merely as a loss, our calculation will be materially incorrect. That mass of ardent spirits, for which it is paid, *becomes a subtle and powerful agent in relaxing the morals, and prostrating the physical strength, of its consumers;* in which number are many from whom the country might expect useful labours in peace, and honorable services in war. Again, the strength of a nation does not consist merely in sinews, bones, and muscles. *The same quantity of physical power will be more or less efficient in proportion to the confidence, union, and wisdom with which it is exerted.* A small number, well united, will accomplish more than a greater number under the influence of mutual jealousy. But union and confidence can be supported on no other foundation than that of *moral principle.* This is the potent ligature by which the various parts are reduced to the most advantageous and beautiful order, and preserved in their respective places. Now, as intemperance is the voluntary subjugation of reason to appetite, it deadens moral sensibility, and obliterates all distinction between virtue and vice.

"Three ways have been specified, in which, as a nation, we are enfeebled by an intemperate use of ardent spirits: *first*, in the term of four years it produces a waste of property to the amount of *a hundred millions; secondly*, powers, whether bodily or intellectual, are enfeebled by it to such a degree as to be rendered incapable of those services and efforts which might otherwise be calculated upon with confidence; *thirdly*, by corrupting the public morals, it relaxes or dissolves the only bond which can retain in one compact, well-organized mass, the discordant materials of which society is composed. The last is probably a greater evil, even in a political point of view, than either of the preceding."

The fourth report of the Society appended to the address announces the formation of several auxiliary associations. The extract from the Portland Auxiliary shows that 7-8ths of the pauperism resulted from intemperance. "The attention of the Society is earnestly called to the multiplication and abuse of licences. The frail are tempted at every corner of the streets, *and there most effectually where the law is provided to secure them from temptation.*"

§ 19. In May, 1818, in the sixth report of the Massachusetts Society, thanks are tendered to the Rev. W. E. CHANNING (afterwards so nobly associated with the Anti-Slavery movement) for his 'Discourse on Intemperance,' now world renowned. It was not, however, published at that time. The Legislature of Vermont issued an address on the subject to the inhabitants of the State—a striking contrast to the conduct of British legislators. The inhabitants of Yarmouth, in Barnstaple County, Mass., formed a Society, and exhibited prompt and patriotic action.

"The measures of this fraternity have been peculiar and energetic, but not ill applied, in their social condition, if we may judge by the result. This section of the commonwealth, particularly, excites a deep interest, as being universally acknowledged as the nursery of some of our most active, brave, and enterprising mariners. The burdens of the late war, which fell with uncommon weight on that portion of our country, wrought the reformation, inducing many of the inhabitants *cheerfully to recur to the simple style of living for which the old colony was once remarkable.* Several towns; in town meeting assembled, passed

formal votes to *instruct their selectmen not to recommend any retailers to the Court of Sessions for licences, and but one or two in each town for Inn-holders*, and these under strict limitations.

From their report the following extracts are made with emotion:—

'Several vessels have the year past performed their voyages without any spirit; and one of said vessels, a fishing vessel, made the most successful voyage of any in this vicinity.

'We have the pleasure and pride to state that our retailers of spirituous liquors, *preferring the public good to their immediate interest*, have not only voluntarily given up the business, but joined our society, and taken an active and efficient part.'

A medical gentleman, Dr TORREY, has exerted himself in this cause, and favored us with his production, reprinted at Ballston Spain 1817. From him we quote the following opinion. 'It is an infallible axiom in the physical organization of man, that *every excitement of his vital powers, beyond the point to which his Creator has adapted them, diminishes his capacity for repeating like motions from like means.* Hence it may be safely inferred that every dram of spirituous liquors of any description is a check upon the capital stock of strength and life, and hastens the approach of the hour of dissolution, in proportion to the indulgence. Each dram increases the appetite for another; and *the necessity of an increased quantity to produce an equal effect multiplies in a progressive ratio.*"

§ 20. In 1819, *An Exposé of the Causes of Intemperate Drinking, and the Means by which it may be obviated*, written by THOMAS HERTTELL, was published by order of the New York Society for the Promotion of Internal Improvement. (New York: E. Conrad, 4, Frankfort St.) The author denies that taverns are the *sources* of the evils, but admits "the *interest* which prompts the landlords to devise a variety of expedients to lure company and induce them to drink. The *primary* CAUSE is the *fashions, habits, customs*, and *examples* of the *upper classes.* Inebriating liquors have become the medium for manifesting *friendship* and *good-will.* That is, the *vice* of intemperate-drinking is ingrafted on the *virtue* of hospitality." This is part of the truth—but the Drink-shop is also a potent *factor* in the causation. Portions of this pamphlet of 56 pages have much instruction for Britain, and indeed for all countries.

"The policy of Government is but the aggregate of the policy of those who administer it. Can any one believe that a tax imposed on houses of lewdness would operate to *discourage* them, and *lessen* their number? The language of such a measure would be this: 'The evil is admitted to exist, but the tax is the price of forgiveness and absolution.' *The influence they gain by becoming useful in point of pecuniary profit to the authority by which they are created, serves to increase their number.* The introduction of intoxicating liquors into our country, so far from being deemed a *misfortune*, has been exultingly quoted as evidence of the great *commercial prosperity* of the nation! So inconsistent are men, otherwise distinguished for their wisdom, that as philanthropists they will deplore the increase of drinking as a public calamity, and *in the next breath rejoice as patriots at the increase of the means of intemperance* as evidence of increasing national felicity! *While the cause exists*, and grog-shops continue to be licensed, *the futility of the hope to regulate them is proved by the failure of every attempt heretofore made*" (p. 16).

"By this hawking and peddling of liquor *many people are induced to drink* when they would not, or could not, go to the tavern; and tumult and confusion too frequently follow. I have taken no pains to ascertain the authority by which retailers are permitted to fix stands and booths at the park, and other places. These places not only *tempt men* to indulge, but *boys* are often seen in them following the example. It would essentially benefit the community should the *inducements to frequent taverns be lessened.* It is a little remarkable that the sagacity which prompted the interdiction of *military parades on the days of election*, did not foresee and guard against the evils consequent on locating the election polls at public-houses" (p. 39).

Britain, just sixty-four years afterwards, passes a Corrupt Practices Bill, to do this very thing, not allowing Committees even to meet there.

§ 21. The eighth Report of the Massachusetts Society (June, 1820), written by the Hon. NATHAN DANE, refutes the fallacy that education will *prevent* intemperance, or that poverty *causes* it; or that treating it at its *full* development in Inebriate asylums will stop its *perpetual* generation.

"As to the easy obtainment of the means of intemperance, it is a fact which merits serious attention, that in most parts of our country *one day's labour furnishes the means of a week's gross intemperance.* When such earnings are applied to the necessaries and comforts of life

in a prudent way, every American may truly say, we live in a happy land; but when applied to extend this vice, he must regret that a day's labour affords the means of so many days of savage intemperance. View it only in relation to mere *pecuniary* interests and equal rights among fellow-citizens; *what is produced by it but extreme injustice and a miserable waste of property that ultimately falls on the prudent and industrious?* as they, generally and almost of course, acquire and preserve property, and principally support the poor and bear the public burdens; and as the vicious and intemperate, generally and almost of course, are poor, and pay but a trifling part of the public expenses. Besides, the latter are always drawing on the *charity* of the former.

"If this, upon the whole, be a true representation of the state of things in our country, where is reason or justice, where are equal rights or correct feelings, *when the laws scarcely notice intemperance but in its last stages, and when reformation is nearly hopeless?* Can any *more effectual* means be adopted to check and restrain this vice? and must not these means be *efficient laws well executed, public opinion*, and *good examples?* Certain it is, these were the means our ancestors adopted in the days of our colonies and provinces, when there was much less intemperance than there now is. One reason, also, was public opinion; and public officers had much more influence than they now have. *Perhaps they had less fear of the influence of the vicious in popular elections.*

"Our ancestors deemed it wise, and perhaps we shall on further experience, to make *informing* the official and positive duty of certain judicious and discreet persons. When men feel impelled by duty and the positive injunctions of law, they are not so fearful of being thought forward, intrusive, or assuming; and they are much less obnoxious than mere *volunteer* informers. *Make it a man's positive duty, by law, to act in a certain manner, and public resentment will but rarely fall on him;* but if it fall anywhere, it will be on the law itself, an event that scarcely ever happens, for obvious reasons: one, that the law is THE ACT OF THE WHOLE PEOPLE, and has a solemn sanction in all respects.*

"Some may ask, What were the effects of the colony and province laws and their stricter execution? We answer, They were a stable and firm character in all affairs, civil and ecclesiastical; *temperance and frugality, among other causes, produced that substantial and elevated haracter so conspicuous in our American Revolution*—a character for

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* This would necessarily be the case in the working of Local Option by a *Permissive Act*, the preliminary measure proposed in England, and now adopted widely in America.

steady perseverance, moral intelligence, a pious trust in God, and a sense of law and liberty, happily combined, never before displayed in a great revolution.

"Numerous publications existing show how much has been done in the last seven years to excite public opinion, and how much it has been excited, against intemperance in many parts of the United States.

"Our history is one standing proof that the greater the evil, the more certain the remedy, if within the scope of human means, for reasons we rely on; *because the wide extended efforts of a great and free people are not often made to remove small evils*, but will almost invariably be made, in time, to remove very great ones, which never fail to produce a general sense of them, a common feeling, and a general desire and anxiety to be freed from them. No doubt this is a work of time, of patience, and of perseverance, WHICH EVER COMMENCES IN TRUE AND EXTENSIVE INFORMATION, IN CORRECT VIEWS OF THE MISCHIEFS to be removed."

The next extract contains a correct answer to the attempt to swell into false importance the value of the capital and labour invested in the liquor traffic; for, in fact, the bigger a bad and wasteful business is, the bigger is the evil and the loss to the nation.

"From the very great number of persons in the State licensed to sell ardent spirits in very small quantities, there result three kinds of evils. (1.) *A very great facility in buying them* in any quantities; also in obtaining them, often in exchange for the bread and scanty necessaries of a poor family. And the more *numerous* these licensed places are, *the more easily are they resorted to in all hours and in all kinds of weather*, and the more probable it is that such a wretched barter trade will be carried on. (2.) Among so many thousands of these licensed persons, there must unquestionably be some very unfit persons for their employments. (3.) These thousands of licensed persons are wholly or partially withdrawn from *productive labour*, the essential support of every people, . . *a large part of whom are made mere idlers, if nothing worse;* and a majority of them misled by the hopes of profit in buying and selling—*hopes that induce a very undue proportion of our population to decline useful employments*, to their own and the public detriment in too many cases.

"*What shall be done with the intemperates?—is a question which the wisest can hardly answer satisfactorily to themselves.* In the work of their reformation, almost every human passion or feeling seems in its turn to have had the ascendency; and no one oftener than the tender

and wounded feelings of friends, wishing to conceal their own afflictions and the disgrace of the offender. Many wise and good men have relied mainly on *laws* to produce the reformation we aim at; many on *public opinion;* others on *moral instruction;* others on *religion;* and not a few on the workings of shame and mortification; and some on exciting a sense of character: but the Board, believing it to be THE PLAN OF THIS SOCIETY TO RELY ON ALL THESE WAYS AND MEANS OF REFORM, and to make its annual publication its principal instrument, have endeavored to collect and remark upon various kinds of information, some eminent opinions, and a few of the best laws on the subject."

§ 22. An address on '*The Criminality of Intemperance,*' delivered at the eleventh anniversary of the Massachusetts Society for the Suppression of Intemperance (1823), by HENRY WARE, Jun., of Boston, has a passage worth preserving, on the hardness of feeling displayed by a corrupted community.

"It has happened amongst us, as it happens in a city where a pestilence is raging. While the deaths are few and rare, there is a prevailing alarm and sadness, but as the destroyer advances and deaths multiply, there is produced a dreadful stupidity; so that as horrors accumulate, indulgence and disorders increase also, till you cannot say whether the wide ruin of death be more terrible than the riotous unconcern of the living. So it is amongst us. *The moral pestilence, which scatters suffering worse than death, spreads itself everywhere around us, but we are unaffected by its terrific magnitude and fearful devastation.* It would be comparatively a little thing that the plague should sweep these thousands from our cities; it would be a comfort that they perished by the hand of God. But now they fall by their own hand, and rush downward of their own will to the corrupting grave. And we stand-by, unmoved! We hear with amazement and horror of those on a distant continent, who, in the infatuation of religious superstition, cast themselves on the burning piles of their husbands, or fling their bodies before the rolling car of a monster idol. But *this sadder infatuation of the multitude at home,* who are sacrificing themselves beneath the operation of a slow and brutish *poison,* hardly moves us to a momentary consideration! We might succeed in preaching up a crusade to India, while we can hardly gain a hearing for those who are perishing by our side! And it must be confessed that there are few problems of more difficult and discouraging solution than this. Zeal and enterprize have hitherto been baffled, and the most intrepid are ready to retire from the field. *Nothing has yet been found to reach*

the root of the evil. The multitude of tracts which have been sent abroad seem to have passed through the air like a thick flight of snow, which leaves no trace of its passage and disappears where it falls. Sermons have been preached; but the exhortation of the pulpit sinks into drowsy ears, and the sinner straightway forgets what manner of man he is. Even the warnings and counsels of personal friendship have been unheeded. The wife has wept, and the famished children have pleaded, and parents and brethren have entreated in vain. Associations have come forward and endeavoured to promote some concert of public opinion and some united action of public men. But most of them have shrunk back discomfited, and found themselves at a loss how to assail the thousand-headed monster.

"The Legislature has attempted to interfere. But laws are matter of derision; *they cannot be strong enough to bind where so few have courage to execute, and so many are interested to break them.* And it has come to pass, that the insulted authority of public justice looks on with silent amazement to see THE GREAT NURSERY OF WRETCHEDNESS AND CRIME rearing its front, and extending its dominion, and palsying the strength of every arm raised to overthrow it. When religion, and law, and the voice of friendship, and the united hands of associated philanthropy, have been thus exerted in vain, and more than set at defiance *by the passions of those who drink, and the interest of those who supply, and the cowardice of those who execute the law;* where, it is asked, shall be the next resort?—what remains but for us to sit down and weep over the desolation we have no means to avert? But the cause of human virtue must never be abandoned as desperate. We may never cease to *hope*, much less to LABOUR for it. Better try the most improbable means than yield the cause without trial. Better effect the most trivial good, than be content to do *nothing* because we cannot accomplish *everything*."

The next passage, written sixty years ago, shadows forth the programme of the United Kingdom Alliance for the Prohibition of the Liquor Traffic.

"Two things only appear certain. First, that a principal object must be to draw the public attention frequently and earnestly to the subject. In the second place, it seems at the same time equally clear, that *there is no man, nor body of men, who can strike at the root of the evil,* BUT THE LEGISLATURE OF THE NATION. Exhortation, tracts, preaching, and personal influence will effect but a partial and imperceptible remedy, while it remains so easy and cheap a matter to indulge this pernicious habit. It is the *facility* of obtaining spirits, it is the

suffering the temptation to lie in the path and at the door, and to be brought to the very lips of every man, wherever he goes and whatever he does, *which is the real occasion of the extensive ruin.* We may strike down a few of the leaves, and lop off here and there a little branch, but shall be unable to fell the trunk or destroy the vigour of the root. We may, perchance, draw away a few of those who have been fascinated beneath its shadow, and deter a few more from approaching within its deleterious influence; but *the tree itself we shall still behold, lifting abroad its deadly limbs, and flinging around its poisonous atmosphere*, infecting and blasting the whole moral vegetation which its breath may reach."

§ 23. In 1822, the death of a teamster, crushed to death while under the influence of liquor beneath the wheels of his wagon, and the burning to death of another man, occasioned the delivery of two discourses, we believe by Dr JUSTIN EDWARDS, which attracted much attention by the remedy proposed,—*Abstinence from the use of* ALL INTOXICATING *liquors.* This indeed ultimately led to the formation of the American Temperance Society, of which Dr Edwards was the first secretary, and who wrote those early and most able reports, the reprints of which did so much in exciting attention to the subject in Britain. In 1825, he wrote 'The Well-Conducted Farm' (which, published by the American Tract Society, had an immense circulation), exhibiting the results to the WORKMEN of an experiment made upon an extensive farm in Worcester County, Mass. "They had a better appetite for food, and were more nourished by it than before; had greater vigour of body and mind; did more labour with less fatigue; got rid of disorders they had before; saved more money; were better tempered and happier; and so more useful to themselves and others."

In 1826 the Rev. LYMAN BEECHER, D.D., preached his 'Six Sermons on Intemperance,' at Litchfield; but they had merely a local influence, until republished afterwards by the American and the English societies, when they did much to attract attention to the subject.

§ 24. At the fourteenth anniversary of the Massachusetts Society (June, 1826), GAMALIEL BRADFORD, M.D., delivered an excellent address. Amongst other things, he anticipated our Inebriate asylums :—

"Not to go over the obvious and generally admitted advantages of *Societies* in comparison with individual efforts, it is sufficient to observe that the members secure themselves, at least in a great measure, from the evil, by thus publicly pledging themselves to a particular course of conduct. *They add to the sanction of reason and conscience, that of the opinion of the world, which has too often more power than either.* The practical moralist, however, must take man as he finds him, and will act most reasonably and successfully by taking into consideration, not merely the motives by which men *ought* to be directed, but also those by which they *will* be governed.

"A confirmed drunkard is to be looked upon as an *insane* person ; for such he unquestionably is. He may have lucid intervals, in common with many other unhappy individuals of this class ; but there is no reason why he should not, on the whole, be considered and treated precisely like these. But we build public hospitals and establish private asylums for the insane, and they are confined and caused to exercise, to work, or take medicine, as the judgment of the superintendents may direct. *The same practice might be pursued with the intemperate. A hospital or asylum for this class of persons would be a noble charity.* It ought not to be a bridewell, a workhouse, or a place of punishment, for this would defeat its own object. The patients might indeed and ought to engage in some work, for the sake of exercise. But the establishment should be considered, and regulated, as a receptacle for unfortunate persons who are unable to take proper care of themselves. It is sufficient to observe that many would be willing to send a friend to be *cured* or *protected*, who would never consent to have him punished. And the public, moreover, would gradually learn to consider intemperance *as a disease.* A view which, I am persuaded, would be more effectual in the way of prevention, than that which regards it *merely* as a *fault.* Many a man will dare the *censure*, few are willing to incur the *pity*, of the world.

"It has been taken almost for granted, that a limited quantity of spirit was necessary to the laborious, and useful to the feeble, and under the form of Huxham's tincture, Stoughton's elixir and the like, *many persons and even children have learned to swallow drams without scruple*, and even with the belief of their being advantageous.

"On this point of the use and necessity of ardent spirits, I am

happy to be able to produce evidence which, while it shows the falsehood of prevailing opinions, is uncommonly free from any suspicion of partiality. I refer to the practice of the *Trainers* of Great Britain, whose business it is to prepare men for pugilistic combats.

"Physicians in their recommendations are liable to be biased by regard to the prejudices of their patients and to be deceived by their representations; while individuals are still more liable to deceive themselves concerning the effects of medicinal or dietetic courses of conduct. These trainers, on the contrary, are troubled with no scruples. They treat their subjects as they would horses, cows, or even steam engines. Tastes and feelings are nothing to them. Their sole object is to give the *machines* upon which they are operating, the greatest force and power of endurance, physical and mental, of which their constitutions are capable. They never deceive themselves with the idea that bark, cordials, or spirit can give muscular power. *Experience has taught the direct contrary*, and they rigidly interdict the use of these debilitating agents.

"But the great obstacle to any effectual suppression of intemperance is to be found in the encouragement afforded *by the Language and Customs of Society* to the limited use of ardent spirits. Notwithstanding [the fact] that the feeling of the community in general is hostile to drunkenness, we are apt to hold language in regard to the practice of drinking spirits *which is very different from what would be dictated by reason and good judgment.*

"We go still further, and encourage it by *Example;* for there are perhaps few who now hear me who do not occasionally take a glass of brandy, or some other liquor, either alone or with a friend. *But every act of this kind is injurious to Society*, since it goes, to a certain extent, to influence public opinion in favour of this practice, and it behoves every man to remember that, *in so doing, he is helping to break down the most efficient barrier against this vice.*

"*You are called on merely to withdraw your assistance from the* CAUSE *of intemperance;* not to volunteer reproof, but to refrain from encouragement. If every one now present were to cease from this moment to purchase or consume ardent spirit in any form, as an article of diet, or to offer it to his workmen or friends as a refreshment; if he were, moreover, to abstain from treating the use of it as a harmless luxury, and was careful never to sanction, by his acquiescence, any opinion advanced in its favour,—if, I repeat, every man in this assembly were to pursue such a course, if he did or said nothing more, the effect upon society would be very considerable. ALMOST EVERY ONE WILL PERCEIVE WHAT A DIFFERENT DIRECTION WOULD BE GIVEN TO HIS INFLUENCE."

The 'Report of Council' commends special appeals:—

"*General appeals are commonly disregarded; particular ones it is more difficult to resist.* If such a project should be acted upon, it would soon come to be a matter of course among Professors of Religion to abstain from all drinking as scrupulously as they abstain from profanity, lying, or gaming. The distinct object to be held up is gradually to make even the Moderate habitual use of ardent spirits *not* respectable, *not* decent. *It is to be proscribed among moral and religious people as we would proscribe swearing or lying.* Reformation must begin at the top of society, and not at the bottom."

§ 25. In January, 1827, JON. KITTREDGE, Esq., delivered '*An address upon the Effects of Ardent-spirits*,' in the Town-hall of Lyme, N.H., which led to the formation of a society. "The object," says the preface, "is not particularly to reform the intemperate, *but to prevent the growth of another race to fill their place;* and in the next generation, if possible, to render them extinct." After a vivid picture of a drunkard's manufacture, he proceeds:—

"Shops, AS NURSERIES, are established in every town and neighbourhood, and drunkards raised up by the score. They are *made;* they are formed; for no man was ever born a drunkard; and, I may say, no man was ever born with a taste for ardent-spirits. *They are not the food which nature has provided.* The infant may cry for its mother's milk, and for nourishing food, but none was ever heard to cry for ardent-spirits. The taste is created, and in some instances may be created so young, that, perhaps, many cannot remember the time when they were not fond of them. I will begin with the infant, and may say that *he is born into rum.* At his birth, according to custom, a quantity of ardent spirits are provided; they are thought to be as necessary as anything else. The father treats his friends and his household, and the mother partakes with the rest. The infant is fed with them, as if he could not know the good things he is heir-to without a taste of ardent spirits. They are kept on hand, and often given to him as medicine, especially where the parents are fond of them themselves. By this practice, even in the cradle, his disrelish for ardent spirits is done away.

"As regards *degree of intemperance*, it may be safely said, that one out of a hundred of the inhabitants of this part of the country is a common drunkard. By a common drunkard is meant one who is *habitually* intemperate, who is *often* intoxicated, and who is restrained from

ntoxication neither by principle nor shame. Of such there are from ten to twenty, and upwards, in every [country] town. There is another class which is intemperate, and many of them are *occasional* drunkards. This class is more numerous than the former, and one out of about *forty* of the inhabitants belongs to one or the other class. Is not this a horrid state of society? But any one can satisfy himself of the truth, by making the examination himself.

"If, then, ardent spirits are not necessary in sickness; if they do not prevent the effects of heat and cold; if they do not add to our strength, and enable us to perform more labour, why are they necessary? Why, people in health say, They want to drink them now and then—they do them good. *What good?* If they are well, why do they need them? For nothing but to gratify the taste, *and to produce a feeling of intoxication and derangement*, slight in its degree when moderately used, but *the character of the feeling is no less certain.* It is the same feeling that induces the drunkard to drink. One man takes a glass to do him good, to make him *feel* better; another wants two; another three; another six; and by this time he is intoxicated, and he never feels well till he is so. *He has the same feeling with the man who drinks one glass, but more of it;* and that man who in health drinks one glass to make him feel better, is just so much [on the way to] a drunkard; one sixth, if it takes six glasses to intoxicate him."

Exactly fifty-one years after we find Medical Science affirming the same proposition, as at pages 91 and 92 of this book. Thus all the great truths and groundwork of the reformation were being brought out; needing diffusion only among the people who rule society, in order to produce the appropriate changes in life and law.

§ 26. In 1827, a New England periodical contained an article on the '*Reformation in the Rhode Island Coal Company*,' by the Superintendent, Mr JOHN CLOWES, of which we give the pith. It shows the then tyranny of customs, and the vast commercial benefits of abstinence:—

"When I came to R. I., in the last part of 1826, I found that the workman who could not and did not drink his pint of whisky per day *was not allowed to work.*" Not a week passed without a general row of from twenty to thirty, engaged with various implements of labour, to the danger of their lives and the ruin of the works. "All this was the effect of the usual allowance of grog. Early in 1827 I commenced with a determination to do away with the worst of all evils, and the greatest

curse ever inflicted on a workman, that of allowing him liquor while at work, and permitting him to have it in his house. Keeping steady to this, I had the satisfaction to see my plans gradually bearing down the long cherished habit, and *a very perceptible improvement take place in every family*. And, on the first Monday in October last, every man came up to the counting-house, and *with one voice*, of their own free will, *desired me to cease giving out any more grog*. Those families who, twelve months ago, were clothed in rags, and not a week's provision beforehand, in December last were, both man, woman, and child, *well clad, with three months provision beforehand*, besides cash in hand, none having less than twenty, and some near 100 dollars; *not one on the sick list*, but every soul in excellent health." *

The Fourth Stage.

§ 27. All these various influences rapidly gathered to a head, and the era of *Temperance Organization* was fully inaugurated,—an organization destined to confer untold blessings upon mankind. On February 13, 1826, the American Temperance Society had been formed at Boston, and in March, the Executive Committee, consisting of Leonard Woods, D.D., Justin Edwards, D.D., and Messrs Tappan, Odiorne, and Wilder, issued their famous manifesto. Various papers advocated the movement. The Rev. Dr Chapin, in the *Hartford Journal* (Conn.), published thirty-three articles, full of power, showing the advantages of abstinence, and demonstrating that it was the *sole remedy* for the evil. The Rev. W. Goodell, in 1829–30, edited at Boston the *National Philanthropist*, which he consecrated to the noble cause of sobriety, until it was transferred to other editors in New York. He afterwards, in New York, edited the '*Genius of Temperance*,' from 1830 to 1833, in which he objected to the medical-use exception as pernicious. The Rev. Dr Hewit (who visited England in 1831, at the expense of Mr E. C. Delavan), was now happily associated with Justin Edwards—the first and greatest secretary the American society ever had.

* The *Unitarian*, No. 4 (Boston, 1827).

§ 28. One of the fullest and most distinct expositions of the physiological doctrine that alcohol is poison, whether in fermented or distilled liquors, appeared in a work, the title of which we give— "*Dispepsy Forestalled and Resisted;* or, Lectures on Diet, Regimen, and Employment; delivered to the students of Amherst College, spring term, 1830. By EDWARD HITCHCOCK, Professor of Chemistry and Natural History. Amherst: 1830."

In the following year a second and enlarged edition was published, with a 'Reply to the Reviewers,' especially to *The Christian Examiner.* A passage in these lectures shows how unfit even good men are to judge of the effect of proclaiming truth; how they violate duty when they timidly hold it back out of fear that it will not be acceptable! "I should consider it *extremely injudicious*, and *even Quixotic*, for any temperance society to require *total abstinence from the milder stimulants.*" Yet this very doctrine, two years later, spread like wildfire throughout Great Britain.

Professor Palfrey's 'Sermons,' and Dr Mussey's 'Address before the Medical Convention of New Hampshire' now appeared. In all these appeals, *total abstinence from ardent-spirit* was the doctrine enforced, as interest and as duty, on the ground of health, social and individual safety, and religious duty. The people accepted the teaching as a new gospel to them; its necessity was felt; and it speedily became regarded by the churches as immoral to drink spirits. For a while, the triumphs of moral-appeal were very great. The enthusiasm passed on, far and wide. Thousands of drunkards were reclaimed, and the facts concerning drink as a source of pauperism and crime, attracting the attention of several of the presidents, and of leading statesmen, led to official action in the army and navy. One-seventh of the army (6,000 in all, at that time) had deserted through drink, and one-fourth were incapable of regular duty. The soldiers, in many parts, petitioned to have the grog stopped, which proposal General Jones and other

officers supported, and on Nov. 2, 1832, General Lewis Cass issued the order from the War Department substituting sugar and coffee for grog. "Hereafter no ardent spirits will "be issued to troops of the United States. No ardent "spirits shall be introduced into any fort, camp, or garrison, "nor sold by any sutler to the troops. Nor will any permit "be granted for the purchase of ardent spirits." Shortly, a *thousand ships* went out of American ports without any grog, and this eventually conduced to its banishment from the National navy.* At a General Assembly of the Presbyterian Church, attended by above 500 ministers, it was declared that "among the means graciously blessed and owned during this year of jubilee, many of your reports specially commemorate the influence of Temperance Societies. *In various places the reformation has been a harbinger, preparing the way of the Lord.*" In the next year a Congressional Temperance Society was formed. Above 7,000 temperance societies were now in active operation, comprehending *a million and a quarter* of members, and including about 10,000 reclaimed drunkards.

§ 29. An able literary organ, *The Christian Examiner*, published at Boston, thus records the results at this time:—

"The greatest enterprise and the most hopeful omen of the age, perhaps, is the temperance reform. Here is a moral miracle,—a nation, a world, fast sinking into the gulf of sensual perdition. How stupendous, almost hopeless, must have seemed to the first reformers who stretched out their hands to stay that downward course, the work they had undertaken! But they entered upon it; they went forward; and what is the result? *Within five years the entire conscience of the world, of the Anglo-Saxon world at least, is penetrated; a new sentiment, a new fear, a new set of moral maxims is wrought into the heart of nations; millions have joined in this work,*—for we do not reckon the pledged men alone; new laws have been framed, new legal restraints devised, new domestic usages introduced; *and it may be hoped that the*

* Nothing can even *yet* be done here, because big men are interested in Army and Navy contracts. So much for too indirect *representative* government!

plague is stayed. What most strikes our attention, and fills us with astonishment, is this,—that such an impression in behalf of morality could have been made upon whole countries in so brief a space of time. It is altogether more surprising than the effect produced by the preaching of Peter the Hermit. The crusades to the Holy Land, which he recommended, were entirely in accordance with the warlike, chivalric, and superstitious spirit of the age. But here our reformers have made head *against* the settled habits, and often, too, the incensed *passions*, of the people. If *this* could be done, anything can be done. The success of the temperance cause is a signal and glorious pledge for anything reasonable and just that good men may desire to undertake."

§ 30. The event in 1830, however, which had a wide-spread influence over the States and the world, was the establishment in the capital of New York State (Albany), of a State Society, of whom the President was Chancellor Reuben H. Walworth, and the Secretary, E. C. Delavan, a citizen of wealth, and of wonderful executive-talent and persistency. He established county agencies, a staff of agents, *The American Quarterly Temperance Magazine* (1833–34), and above all, *The Temperance Recorder*, which was circulated by millions throughout the States, and by hundreds in foreign lands. Amidst opposition and untold calumny and persecution, this noble, liberal, and courageous man pursued his undaunted course to the end; and laid in literature the sure and lasting foundations of the movement.* He has had no follower in America, and no

* Here we cease to pursue the minute history of the early movement; but the facts given seemed to us worthy of being rescued from oblivion. They have been disinterred from old books and forgotten but original sources. After-events may be read in the Rev. R. Baird's *Histoire des Sociétés de Tempérance* (Paris, 1836), and the details of the Prohibition movement (from 1846 to 1857) can be found in the Prize Essay of the Author, entitled *An Argument for the Suppression of the Liquor Traffic*, chap. vii., of which some 50,000 copies have been put in circulation, and as many more of the 'Condensed Argument,' with that chapter omitted. Mr Delavan, full of years (above 77), and deeply grateful for the triumphs of the cause he had lived to see, died in 1871. He was converted to the doctrine in 1830, by Mr Kittredge's tract being placed under his plate at dinner, and by an address in Albany, given by Dr Hewit. Of the first report of the Society, Mr Delavan circulated 38,000.

imitator in Britain. Indeed, compared with him, our best men have been mere peddlers, for want of mental grasp. They have not yet learned that '*Knowledge* is power' of the only abiding sort.

By the year 1834, a large number of able and salaried agents were engaged in the agitation, while an innumerable band of voluntary missionaries went forth amongst the people, including the chief professors in the colleges, and other public institutions, during their holidays. Above 12,000 ministers of the gospel gave in their adhesion, and preached against the prevailing vice and its causes, millions of tracts were printed and distributed, both in the English and German tongues, and astonishing reforms were effected. The press, at this time, was superbly employed. The Pennsylvania Society offered a prize for the best essay upon this question: "In what case of health or sickness is the use of spirituous liquors indispensable? or can they be efficaciously substituted by other substances?" The essays of Dr R. D. Mussey, Professor of Medicine in Dartmouth College, and of Dr Lindsley, of Washington, were adjudged to be of equal merit, and $300 were awarded to each. The essays became popular, and broke the shell of a great superstition. The following works were very influential:—

My Mother's Gold Ring, and other capital tales, by Lucius Sargent, of Roxbury.

Report of Mr Chipman as to the relations of Intemperance to the inmates of Almshouses and Prisons, 1834.

Report of Mr Gerrit Smith, of Peterboro', N.Y., upon the *suppression of more than thirty drink-shops in that town*—which state continues happily to this day, as the writer has seen with his own eyes.

§ 31. The unwonted intelligence from America, naturally excited great interest amongst the philanthropists of Europe. Between 1828 and 1830,—chiefly through the earnest efforts of the Rev. G. Carr, of New Ross, the Rev. John Edgar, D.D., of Belfast, Mr John Dunlop, of Greenock, Mr W.

Collins, of Glasgow, and Dr Thomas Beaumont, surgeon, of Bradford,—this new agency of reform was introduced into various parts of Ireland, England, and Scotland. The king became the patron, bishops, lords, and admirals the presidents, of 'The British and Foreign Temperance Society.' A certain amount of good was done, especially amongst grog-drinkers of the middle class, *but few drunkards were reclaimed, and fewer still prevented from becoming drunkards.* It was soon perceived, that, owing to the fact of English drunkenness arising mainly from beer, the American pledge was deficient and nationally inapplicable, besides involving, in the permission of the use of wine, an inconsistency which destroyed the moral power of its advocates. "The rich can drink their strong wines," said the people: "why cannot the poor man enjoy his gin?" *It was felt that the pledge must be extended to every agency of enslavement, and include abstinence alike from spirits, wine, malt-liquor, and cider.* This social necessity led to inquiry into the chemistry of the question, which revealed the fact that 'Alcohol' was the real agent of mischief in all these drinks, however disguised under various mixtures, adulterations, and names. Belief in the dietetic virtues of strong drink of course stood in the way of the new doctrine and the practical reform it aimed at, which compelled its advocates to look into the statistics of vitality, as well as into chemistry. Experience rapidly accumulated, demonstrating not only the needlessness of fermented liquors, but the benefit which generally and unexpectedly followed abstinence from them; and search into the opinions of learned men who had written on this point, yielded an astonishing *consensus* of authority in favour of the views which had been erroneously supposed to be novel.* In the list of departed worthies stand prominently the names of Baynard, Cheyne, Darwin, Trotter,

* *Vide* the *Standard Temperance Library* (Douglas, 1839-41), containing valuable reprints from medical authors of the last two centuries: edited by Dr Lees.

Garnett, Jackson, and Beddoes. Basil Montague, in his collection of opinions and essays, is deserving of special record.* The moral, logical, and scientific foundation of the movement was now prepared, and the vague feelings and perceptions of the reformers were methodized and reduced to formula and shape.

§ 32. IRELAND was the first European country in which the Temperance doctrine took root, as it is the one in which its greatest, though transient, triumphs were exhibited. In 1817, one Jeffery Sedwards, a nailer of Skibbereen, Co. Cork (he died in 1861, aged 85), having probably heard of the American movement, became an abstainer.† He induced Denis Mara, carpenter, and James White, nailer (both of whom were living in 1862), to join him and nine other persons, several of whom had been heavy drinkers. At a tea-party, it was resolved "that a *Society*, to be called The Abstinence Society, be formed"; to be governed by written rules, and to assemble monthly. In 1824, the members built a meeting-house for themselves—probably the first Temperance Hall in the world. It was 50 ft. long by 20 ft. wide, and 16 ft. high; and completed in eight days. After this, the members would visit Bantry, Ross, and other towns around, proclaiming the blessings of Temperance. As many as 500 members have been known to walk in procession. This Hall, with its books and records, was destroyed by fire in 1854; but a Memorandum-book preserved by Mr Mara, shows that there was a sick and sinking fund connected with the society, and records the form of the pledge:—"*No person can take malt or spirituous liquors, or distilled waters, or anything inebriating, except prescribed by a priest or doctor.*" Peter O'Donoghue, a

* 'Some Inquiries into the Effects of Fermented Liquors: by a Water Drinker.' London, 1810.

† Or it may have originated from the knowledge of several German *prohibitory* settlements in the south of Ireland, noticed, by the way, in John Wesley's *Journal*, about the year 1772.

reclaimed tailor, emigrated, in 1818, to George's-town (a suburb of Washington), and from 1848 to 1861 regularly transmitted to Mr Sedwards £8 annually. This society was absorbed by the greater movement of Father Mathew, commenced in 1838.

In 1829, Joshua Harvey, M.D., of Dublin, requested Dr John Cheyne, Physician to the Forces in Ireland, to assist him in the formation of a Temperance Society in that city. On the 15th of August, Dr Cheyne replied in a characteristic letter, published anonymously, as 'by a Physician,' entitled 'A Statement of Certain Effects to be Apprehended from Temperance Societies.' He says:—

"The observation of twenty years in this city has convinced me that, were *ten young men*, on their twenty-first birthday, to begin to drink *one glass* [= 2 oz. alcohol] of ardent spirits, or a pint of port wine, or sherry, and were they to drink this *supposed moderate* quantity of strong liquor daily, the lives of *eight* out of the *ten* would be abridged by *twelve or fifteen years*."

The Dublin Temperance Society being formed, issued a series of admirable tracts.* The first letter of Dr Cheyne thus commences:—

"It would appear to me that those who wish to encourage temperate habits ought to aim at three things.

First. To disabuse all sorts and conditions of men with respect to the harmlessness of fermented liquors.

Second. To show the advantage, in point of economy, of laying them aside.

Thirdly. To prove that to use them for their own sake is irreconcilable with religious principle.

The benefits *supposed* to flow from their liberal use in medicine, and especially in diseases once universally, and still vulgarly, supposed to

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* 1. *A Letter on the Effects of Wine and Spirits.* By a Physician. Printed for the Dublin Temperance Society: 1829. No. 1. Price 6*d*.

2. *A Second Letter.* By the same. 1829. No. 2. Price 6*d*.

3. *Political Evils of Intemperance.* By J. H. [Joshua Harvey]. No. 3. Price 3*d*.

4. *Remarks on the Evils, Occasions, and Cures of Intemperance.* By W. U. [Rev. Dr Urwick]. No. 4. Price 4*d*.

depend on mere weakness, have *invested these agents with attributes to which they have no claim;* and hence, as we physicians no longer employ them as we were wont to do, we ought not to rest satisfied with a mere acknowledgment of error; but we ought also to make every retribution in our power for having so long upheld one of the most fatal delusions which ever took possession of the human mind.

I have been engaged upwards of thirty years in medical practice, a great part of the time extensively, and all this while I have been attentively observing men who lived in all respects alike, save in the quantity of liquors they drank; and I can conscientiously affirm, that *longevity is more resisted by excess in that respect, than by all the other hurtful influences which prematurely extinguish the lamp of life;* insomuch that, were an *allegorical personification* of the various vices by which men shorten their lives to be honestly painted, drunkenness would appear as a bloated giant, while the rest might be represented as obscene and deformed pigmies."

Dr Cheyne was far in advance of his profession in regard to the medical use of alcohol; yet, even at that very time, Mr Higginbottom, F.R.S., a surgeon, of Nottingham, was carrying on an extensive practice without alcohol.

The second letter commences with an attack upon the traffic. The enemy, he says, has "*Arsenals in most of our* "*cities*, for the manufacture and distribution of his ammuni- "tion, well garrisoned fortresses in every town and village, "and *emissaries all over the land*, who are unceasingly active "in establishing his usurpation."

§ 33. If the first two of the Dublin Tracts satisfactorily enunciate the new doctrine of the reformation, the formula and philosophy of the remedy were not less explicitly and admirably put forth in No. 4, by the late Rev. W. Urwick, D.D., a highly esteemed Congregational minister of Dublin. His tract, dated 'Nov. 9th, 1829,' dedicated to Dr Cheyne, is amongst the earliest and clearest statements of the remedy. After a graphic description of the evils, he proceeds to consider the causes, including (1) misconceptions of the nature of the liquor as good for health, and as an aid to thought or conversation, under which he asserts that after the use of wine "our modes of thinking will not

be marked by either depth or accuracy: we shall be incapable of that balancing of facts inseparable from real wisdom." (2) The desire to relieve care, or abate anxiety, by numbing the sensibilities. (3) The fashions of hospitality. (4) The gratification of appetite engendered by strong drink. (5) Evil modes of recreation associated with drinking. (6) Excesses of the table, leading to the use of alcohol as an anæsthetic to make one feel comfortable, disguising the disease by silencing the monitors of the nervous system. (7) The example of apparent impunity in a few, who serve as decoy ducks to ensnare the less strong and cautious drinkers, who perhaps have finer susceptibilities and warmer temperaments. He then proceeds, the italics being his:—

"The prescription I have to offer is simple, within the reach of all, and invariably efficacious, if it be applied. *It is the total, prompt, and persevering abstinence from* ALL *intoxicating liquors.* It has been proposed by some to change the kind, or to diminish the quantity, or to lessen the frequency of their use. But the probability, I had almost said the certainty, is, that if indulgence in them be allowed at all, *the sensation produced by them will continue*, the desire for them will be sustained, and the door yet left open by which *temptation* may return, and again lead the half-emancipated victim captive."

§ 34. It uniformly happens, with great movements in philosophy, morals, religion, politics, and even physical discoveries, that a common thought—the outgrowth of a common tendency, the ripening, as it were, of the human mind—arises and seeks expression in many places or persons at the same time. Professor RÉNAN has noted this singular fact:—

"There is no one so shut in as not to receive some influence from without. The history of the human mind is full of strange coincidences, which cause very remote portions of the human species, without communication with each other, *to arrive at the same time at almost identical ideas and imaginations.* In the thirteenth century, the Latins, the Greeks, the Syrians, the Jews, and the Mussulmans, adopted scholasticism, from York to Samarcand; in the fourteenth century, every one

in Italy, Persia, and India yielded to the taste for mystical allegory ; in the sixteenth century, art was developed in a very similar manner in Italy, at Mount Athos, and at the Court of the Great Moguls, without St Thomas, Barhebræus, and the Rabbas of Narbonne, or the Motecallémin of Bagdad, having known each other ; without Dante and Petrarch having seen any *Sofi ;* without any pupils of the schools of Perouse or of Florence having been at Delhi. We should say there are great moral influences running through the world like epidemics, without distinction of frontier and of race. The interchange of ideas in the human species does not take place only by book, or by direct instruction."

Cavendish and Priestley, Bell and Fulton, Stephenson and Hackworth, were contemporaneous, independent discoverers and inventors, not rivals or plagiarists. They exhibited the outbirths of a common impulse, of a common necessity and perception. So it was with the development of the doctrine, and the actual establishment, of temperance societies. They were 'in the air.'

The idea of temperance associations based on the abstinence pledge, arose without concert in several distinct regions about the same period. The Skibbereen movement, as well as Dr Urwick's formula, awaited expansion, organization, action—in fine, a *propaganda.* In 1830, at Dunfermline, Mr JOHN DAVIE drew up a pledge of abstinence ; and not long afterwards the idea was again expressed in Berwickshire. In January, 1832, Mr RICHMOND, surgeon, of Paisley, in conjunction with others, framed a pledge of a similar character. A little later we find an association in St John, N.B., united on the same basis. None of these, however, became the centre of the movement. Now it is of more moment to the world that it should have apostles, pioneers, and missionaries of the truths by which it is to be saved or ameliorated, than that it should give birth to men who barely perceive the thing that awaits the doing, or the truth that needs dissemination ; and they who do the work, who realize the thought, and who, by their skill, courage, combinations, and fidelity, fight and over-

come the giants, are those on whom the greatest weight of glory must eventually fall. The fire and force needful to the working of the machinery of an agitation,—that moral and social steam which men name 'enthusiasm'—had not yet been generated, though its elements were being slowly but surely collected, in a district, and amongst a class of persons, best of all suited for the work to be done. Or to change the figure for one equally apt, the torch of truth which had faintly burned in isolated places, unsustained by a free and fitting atmosphere, and therefore radiating no steady wide-spread effects, *was about to be relighted in the midst of an intense social life and activity, and to be fed and fanned into an unwonted glow by the breath of the people.* The union of true thought with fitting circumstance—the condition of all social advancement—was on the eve of being accomplished.

END OF VOL. FIRST.

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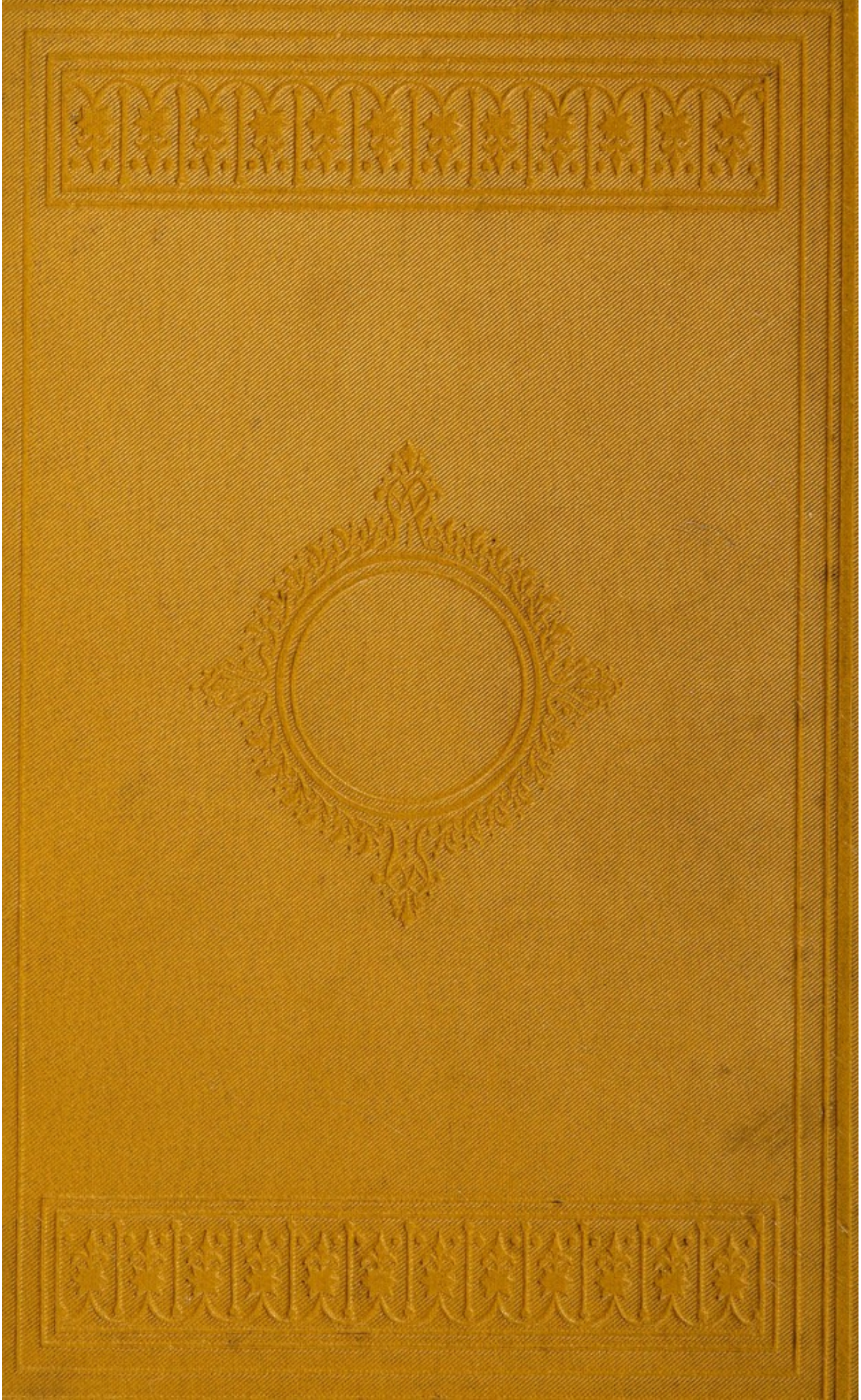
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