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To Dr B. W. Richardson, F.R.S.
with the Author's
Great regards.
March 1st. 1875

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ESSAYS

PHYSIOLOGICAL AND CRITICAL

ON THE

PRINCIPLES OF TEMPERANCE.

BY FREDERIC RICHARD LEES, PH. D.

AUTHOR OF THE ARGUMENT ON PROHIBITION (ONE HUNDRED GUINEAS PRIZE ESSAY), HONORARY MEMBER OF THE SOCIETY OF SCOTTISH ANTIQUARIES, ET CETERA.



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General Contents.

Page.

Mottos 7

I. Introduction. What Teetotalism is not: being a reply to Mr Isaac Taylor's *Epidemic Whims* ... 9

Contrast between the ancient *Ascetic* and modern *Teetotaler*, 18.

II. Biology; or the Science of Life 21

Distinctions of the Nervous System, 25. The doctrine of Correlation of Force, 28.

III. The Physiological History of Alcohol... ... 41

Chapter I.

Does physiology or experience teach that alcoholic liquors form part of the ordinary sustenance of man in health, particularly under exposure to heat or cold? 41

Conditions of health, 41—Organism of man, 42—Need of heat, 42—Building material, 43—Food of two kinds, Fuel and Nutriment, 44—Drink of one sort—Air, or an adapted atmosphere—Life, and its dependence on Oxygen, 45—Perfection of Nature, 46—Can Alcohol answer the end of Water? 47—Can alcohol be Food? 48—Liebig declares it cannot repair waste. Dr Paris and Dr Pereira on Alcohol as Fuel, 49—Conditions of combustion—Origin of Fat and Oil, 51—Heat-values of Alcohol and Food compared, 52—Uses of ternary compounds of carbon, oxygen, and hydrogen, 54—The crucial test—Alcohol impedes ventilation, 54—Dr Prout's Experiments, 55—Dr Davy's, Dr Böcker's, and Dr Hammond's, 56—Experience the final touchstone, 57—Result of trial in England, in India, in America, and in the Arctic Regions, 58—Dr Sladen, Captain Head, Dr Hooker, and W. Cobbett, 59—64.

Chapter II.

Is there any special modification of the bodily or mental condition of man, short of actual disease, in which either the occasional or the habitual use of alcoholic liquors may be considered necessary or beneficial? 65

Disease defined, 65—Dr William's test of the use of stimulants, 66—Dr James Johnson—Alcohol for nursing mothers, 97—Dr Carpenter—Peculiar constitutions—Dr Christison, 68—Alcohol tends to disease, and vitiates the blood, 69—How medicines act, 70—The case of the *Maison Centrale*, 71—Error of Carpenter.

Chapter III.

Is the employment of alcoholic liquors necessary or beneficial in the practice of medicine? If so, in what diseases, or in what form and stages of disease? 73

The dilemma; difference between necessity and utility, 73—In poison physic, in physic poison, 74—Carpenter on medical quackery, 75—Example of empiricism, and difference of doctors, 76—Injury of alcohol in Gangrene, 77—Worse than useless in Cholera, 78—Cold water Cures, 79—The *Febrifugum Magnum*, 79—Note, Testimony of Dr Armitage, 80—Müller—Dr Hope's cases of stomach disease, 81—Dr James Johnson—Professor Carpenter, 82—Condiments, 84.

Chapter IV.

What relation does alcohol sustain to the healthy system?... 85

Is alcohol food or poison? Poisons defined and classified, 85—Christison's statement of the threefold action of ardent spirit, 86—The general and remote effects of alcohol explained by Prof. Pereira, 86—Three degrees of toxic influence—Excitement—Inebriation—Apoplexy or Coma.

Chapter V.

How does the ascription of the quality of 'poison' to Alcoholic Liquors consist with the fact that many drinkers of them have attained a good old age? 88

The old-age fallacy, 88—Counteracting agencies, 89—The atheism of the objection, 91—Facts of Experience vastly in favor of Abstinence, 92—Teetotalism secures both *intensity* and *protensity* of Life, 93. Note, p. 119.

Chapter VI.

What are the effects of alcohol upon the healthy body? ... 94

Adaptation of Food to Organism, 94—The seed of all Drunkenness, 95—The fat-fallacy, 96—Course of alcohol thrö the system, 97—*Why* alcohol is a Robber, 98—Muller and Dr Paris on stimulus, 99, 100—Effects of alcohol on the blood—Professor Scholtz, 100—Healing of wounds, 101—Action on the nervous-system, 102—Contrast between a natural and non-natural stimulant, 104—Topical effects of alcohol—Action on the Saliva, 105—Case of St Martin—Ocular Demonstration, 106—Delusion of

not *feeling* mischief, 107—Dr Ogston's remarkable cases, etc. 108—Dr Beddoes, 109—*History of the Gastric Secretion*, 110—Alcohol impedes Digestion, 111—Irritates the Lungs, etc. 112—A postman's Experience, 113—Pedestrian exercise best performed without alcohol, 115—Dr Percy's experiments, 117—Effect of alcohol on the Heart, 117—A Brain-poison, 118—Divine Law fixed and inflexible, and not dependent on human opinion, 119—True temperance involves a dual test, 120.

IV. Plea for the Primitive Diet of Mankind 121

I. The Authority of Nature, 122.
II. The Analogy of Nature, 124.
III. The History of Nature, 126.
IV. The Dietetic Laws of Nature, 128.
V. The Histology and Pathology of Nature, 135.
VI. The Æconomics of Nature, 140.
VII. The Ethics of Diet, 141. Testimony of Travelers, 147.

V. On Longevity, its Laws and Conditions 150

CONTROVERSIAL APPENDIX.

I. *On the Chemistry and Physiology of Temperance.*

VI. Fallacies of Professor JOHNSTON ... ... iii.

Resumè of the Laws of Life, iii.—Alcohol, compared with oil or fat-making substances, gives out less heat, vi.—Mistake of *Blackwood* and the *Leader*, vii.

Critique on the Chemistry of Common Life ... ... viii.

A ludicrous blunder in physiology, x.—Fallacy that spirits 'supply the place' of food—Coffee *versus* Alcohol, xiii.—Alcohol retards Digestion, xiv.—Fiction relative to digestive fermentation, xvi.—Lehmann on Coffee; mistake of calling it nutritive, xvi.

How to *make* Alcohol: a discovery, lxv.

VII. DISSECTION OF THE WESTMINSTER REVIEW, etc. ...lxvii.

1. Analysis of the puffery of Mr HARRINGTON PARKER, Beer Merchant, and agent for Allsop's Pale-Ale ... ... lxvii.
2. Reply to the *Westminster Review* ... ...lxxiii.

I. Examples of the Reviewer's abuse, lxxiii.
II. Of his fabricated and imputed arguments, lxxv.
III. Of his swindling Definitions and illicit Logic, lxxx.
IV. Of his perverted Science and fraudulent Suppression, lxxxvi.
V. Of his erroneous and hypothetical Physiology, cvi.
VI. Of his suicidal admissions, cxxii.
VII. The ignored basis of Teetotalism, cxxvi.

Experience of distinguished men, in America, cxv.—Of Sir JOHN ROSS, Captain KENNEDY, SIDNEY SMITH, etc. cxxvii.—LEHMANN on the last verdict of Science, cxxix.

VIII. Exeter Hall Manifesto, by Drs Carpenter and Lees cxxxi.

Dr R. DAVIS's criticism on the Manifesto, cxxxvii.—Notes and Letter in reply, cxxxix.

IX. Professor YOUMAN'S answer to the *Westminster* ... cxl.
1st. Alcohol is *not* Food, cxl. 2nd. Alcohol *is* poison, cxlii.

X. The Logic of the *Leader*: or the Westminster article in process of hatching ... ... cxliii.

XI. The Westminster Reviewer's Response, a *verbatim* reprint from the *Leader*, with Notes ... ... cxlviii.

XII. Does Alcohol make the body warmer? ... ... clxii.
Controversy with Dr JONAH HORNER, Professor MUSPRATT, and their *aides*.

XIII. The Blunders of *Blackwood* ... ... clxxii.
Erratum. Mr P. Bayne, *not* the author of book referred to, but of *Christian Life*.

XIV. More fallacies of the Faculty. Professors Laycock and Moleschott ... ... clxii.

II. *Articles on the Wine Question, etc.*

XV. Bible Wine Question newly stated and illustrated ... xvii.

XVI. Unbelievers and the Bible ... ... xxi.

XVII. The objection from *limited*-prohibition ... ...xxiii.

XVIII. The Marriage at Cana explained from an original point of view ... ... xxvi.
Note on the Logic of the *Leader*, xxxiii.

XIX. Controversy with ZETA in the *Reasoner* ... xxxv.
Classification of *Yayin* and *Oinos*, xlii.

XX. Bible Temperance: a Letter to the Rev. JAMES GIBSON, M.A., in reply to his *Principles of Bible Temperance*. ... ... xlv.

XXI. Letter on the principles of genuine Teetotalism ... cxciii.

XXII. The Duty of Magistrates and the Policy of the Future ccxi.

Mottos.

"Wine is a Mocker—Strong-drink is raging."—*Solomon.*

"Alcohol is a very dangerous, tricksy Spirit."—*The Westminster Reviewer.*

"It is the very sophistical art of swindling (*Erschleichung*) conclusions by an incorrect application of the laws of thought, in which all Liebig's writings show him to be a master. By this he has managed to bewilder and bribe the public so often with *half truths.* It could only have been in such a deceptive way that he could persuade people of such absurdities, as that the cultivation of Beet-sugar—that blessing to Germany—was inadmissible and silly,—Coffee and Tea, those active sleep-destroying nervous drinks, were healthy articles of diet,—Tobacco, with its poisonous nicotine, the most disgusting dirtiness that ever came into the world, with which a man makes a chimney of his throat [and a dust-flue of his nose], sacrifices his teeth and his palate to filth, soot, and mould, and fills his dress, his furniture, and the atmosphere of his rooms with stinks—was advantageous, good, and decorous; and so on."

BARON VON REICHENBACH.

"The school is, above all, the place where we can guard with success the young against the sad consequences of the use of strong drinks, and the numerous evils of tobacco. It is upon the young that we can act the most powerfully, in making them regard it as a poison. Teaching them to fear alcoholic drinks and the grievous effects of the use of tobacco, is to render them an eminent service, at the same time that we contribute to the improvement of the public health."

Baron SEUTIN, M.D., Bruxelles.

"The habitual use of spirits, and of absinthe, leads the Soldier to indiscipline and to mutiny. In campaign, it is their most fatal enemy, and during the first years of the occupation of Algeria, strong liquors caused, in the ranks of our army, more ravages than the bullets of the Arabs."

Marshall BUGEAUD.

"When the brain is affected, it causes a true *mania* for wine and stimulants; when it is the stomach, it is usually a symptom of an inflammatory or otherwise morbid condition of the stomach, very common in drunkards, and also common in cases of indigestion in delicate women. *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. It is in this way that many persons of position and education have become irrecoverable sots.

"I am glad for one to have the opportunity of gratefully acknowledging my own obligations (in this respect) to what may be termed *teetotal science.* 'Abstinence Societies have explained the *rationale* of intemperance in its compound character as a disease and a sin'—(I quote and adopt the words of an eloquent advocate of the cause, the late Mr Kettle)—and in doing that, have laid the foundation for a solid reform in morals generally, for they thereby established a great moral principle.

"The promoters believed that if the true action of alcoholic drinks was fully *comprehended* by the people, the *use* of them would cease as matter of course. Much may be done thrö the convictions, *but nothing is more certain than that men may know the right and yet the wrong pursue.*

"*A pledge is a bond of union, as the expression of a creed,—that is its main use.* Doubtless the desire to be consistent often counterbalances desire to drink,—*then also it is useful.* And in those cases in which the mere taste or smell of the liquor is an irresistible temptation, *a pledge of rigid abstinence is necessary, and cannot fail to be useful.*"

Professor LAYCOCK, M.D.

"For one restraint, Lords of the world besides."

MILTON.

INTRODUCTION.

What Teetotalism is not.

Mr Isaac Taylor, the author of the *Natural History of Enthusiasm*, when recently lecturing to the young men of Manchester, chose for his topic, the whimsical one of 'Epidemic Whims.' For him, undoubtedly, there is a *titular* fitness in the selection, and, as we shall presently show, the *treatment*, tho sadly serious, was substantially in keeping with the theme. The triad of Modern 'Whims' chiefly dwelt upon were—*Vegetarianism*, *Teetotalism*, and *Maine-law-ism*. The writer may presume to affirm, that he knows as well as any man living, the principles, motives, and history of all three; and comparing the truth *as it is*, with the truth as Mr Taylor has *represented* it, he can only hope that the author of the Natural History of *Enthusiasm*, knew very much more about that subject than the triad of *isms* whose genealogy he now professes to trace. If not—his celebrated book is rather suited for the lining of young men's trunks than of their heads.

Mr Taylor, who plumed himself on his *own* frankness of assault, will not be offended at *our* curt out-spokenness of defence. The rebuke of ignorance has *no right* to be offended with the rebuke of knowlege. But, however that may be, we commence with the unqualified, clear assertion, that, from beginning to end, *his representations are sheer, downright misrepresentations*: not even parodies of parallels, they are in every particular *contrasts* to the truth of fact. Mr Taylor has never referred to a single authority in support of his statements; and the accredited literature and manuals of these movements are in flat contradiction to his serious and unjustifiable imputations,—as we shall presently show.

This, however, is not Mr Taylor's first offence. Turning back many years, we find the *germ* of his recent outbreak in his 'Lectures on Spiritual Christianity.' It was not surprizing that a mere Book-man should, at a distance, so misapprehend the movement of the men of Preston; but what was an excusable error in 1841, becomes a grave offence in 1856. We cannot *now* submit to have the calumny revived and circulated—at least without protest and contradiction. Mr Taylor, we know, has not been in Rip Van Winkle's somnolent condition during this interval of fifteen years; and he was *bound* either to have sought for information, or to have kept silence. "He who judgeth a cause before he *readeth* of it, to him it is folly and shame." Nevertheless, we quite believe in Mr Taylor's sincerity. Perhaps the old prejudice has become so stereotyped with age, that he has mistaken a modern movement, based altogether upon modern, practical, and common-sense motives—for one of those Ancient Heresies of which he wrote so much—and so fast—that their very phantoms haunt him yet, mingling confusedly with the work of every-day-life!

In his third lecture on Christianity, he says that, "it rejects any "interested concession to virtue implying disaffection to virtue's self, "and commands every man to be religiously *virtuous*, not factitiously

"*abstinent.* Not only is a conventional, arbitrary morality *incomplete*; "it is unlawful—it is prohibited—it is an insult, at once to the law "and to mercy."

If Mr Taylor can for a moment descend from this high-flying spiritualism, we might ask him to expound the famous texts of Paul:—"All things are lawful, but all things are *not expedient*." "If eating flesh or drinking wine, or anything, cause my brother to offend, then will I not eat meat, or drink wine, while the world shall stand." Should he begin by explaining this and the other—then, *we too*, claim the benefit of the explanation—or would know the reason why? If he concludes by qualifying the declaration of Paul, then *we* demand also that the qualification be extended to us—since our *practice* is the same. If Paul's abstinence was not 'factitious,' why should ours be so? If his self-denial illustrated Christianity, why should ours be an insult to it? Does the mercy of Heaven *bind* us to brew beer or broach burgundy?

Mr Taylor then proceeds to affirm that the first characteristic of Christianity is this:—"That it attaches a sovereign importance to "TRUTH, as furnishing the only solid support for the motives of self-"government, purity, and charity" (p. 128).

In the preceding page, he says:—"As we challenge entire indepen-"dence, and disdain every ambiguity, we cannot do less than plainly "express the opinion that the benevolent, and *no doubt greatly success-"ful endeavors* now making to repress the use of intoxicating liquors—"*involving pleas and pretexts which common-sense resents*, might well "bear to be seriously re-considered."

Now what has Mr Taylor done toward this reconsideration? His *opinion*—his fears and fancies rather—have been dormant for fifteen years. Common sense has not, practically at least, resented, but sustained and made national and world-moving, the great enterprize of Temperance Societies. Had he *then* brought out his *evidence*, his lecture on 'Epidemic Whims' would have been as unimportant as it is really uncalled-for. Does he suppose that the men of Manchester advocate *Teetotalism* and *Prohibition* as Falsities?—or that they will accept his 'assurance' that they *are* so? He speaks against 'Popery,' but virtually assumes that we should regard his *dicta* as final! He has in this country a fair field and *much favor*—he has the power to challenge an open encounter—why, then, have not the forces of Error been routed by the phalanges of Truth? For the thousandth time we say—it is not *opinion*, drivel, declamation, prophecy, that we want—but EVIDENCE. Give us that—show that our faith, our fanaticism, our whim—is not Truth, and we will gladly spare you—and ourselves—the wearisome retailing of the sequences. It is a truism that 'mistake brings mischief'—but *hitherto* we have seen only the good of our doctrine; when the evil begins to come, we may grow doubtful—but in the meanwhile we believe that, in this matter, *we* are wise and our critic otherwise.

We, too, attach a sovereign importance to truth: but what is truth? Mr Taylor, like Pilate, doesn't stop to listen—the Teetotaler, like Daniel, *tries* both sides of the question. We, too, believe that truth is the only solid basis of a permanent reform; and therefore do *not* divorce expediency from truth. We, too, have self-government, puri-

ty, and charity for our *aims*, and believe truth to be the guide thereto. If you would not be burnt or defiled, handle not *fire* and *pitch*. If you would not be deceived, trust not that which is deceptive. If you would not be excited, avoid the excitant. "Wine *is* a mocker—strong-drink *is* raging"—and, notwithstanding Mr Taylor's denial, "he who is deceived thereby is *not* wise." If this *be* truth—then, *acted upon*, and only then, it will secure our own safety and purity, and that of our neighbor. Abstract truth will do nothing: it is the guide of the actor, but only the *action* can realize the result.

If, on the other hand, this be *not* truth,—if we are bodily better with strong-drink than without it,—if it has no *tendency* to seduce and deceive, by disturbing and altering our physical system,—if our brethren are not weak, and can safely follow our example,—if men are really better, purer, wiser, for drinking it,—then Teetotalism *is* a great mistake, without any solid basis, and the sooner it is abandoned, of course the better. There is much virtue—but also much feebleness—in an IF. Youth and senility are apt to be alarmed at *ifs* and *buts*—for our part, however, being neither in our nonage nor our dotage, we can simply smile at the Epidemic of the Nursery.

The whole of this controversy may be put into a nutshell, when we have any mind to deal with possessed of *directness* of insight, and at the same time free from polemic mystification and verbal jugglery.

1. Are we under some *moral obligation* to drink either pale ale or pale sherry? If not, we may please ourselves and abstain, without any insult to heaven.

2. Are we bound by *physical-law* to drink port or porter, for the benefit of our health?—that is, is it necessary to life? Who, in the face of millions that abstain, and enjoy better health than before, will answer 'yes'?

3. Are we placing ourselves and others out of the way of a temptation, when we resist appetite and refuse to sanction customs 'more honored in the breach than the observance'? If so, we are not only 'abstaining from the appearance of evil,' but its reality, and strengthening our *moral will* in learning to say No: which is '*self*-government' of the highest kind.

If *so* much is granted—all is granted: for the rest follows as a matter of course—and Mr Taylor is acute enough to know it. Now we ask him distinctly to point out the pleas and pretexts here which common-sense resents and Christianity discards? He may begin to speak of *other* doctrines that we hold—to which we respond: They are 'inferences' from these premisses, legitimate or otherwise—but we must have the *logical foundation* first laid down. Is THAT false? If so, where and why? If true—then we need not fear any conclusion fairly drawn from it.

Those premisses, however, are simply a statement of the fact, that NO EVIL, BUT MUCH GOOD, ADHERES TO ABSTINENCE; which, being interpreted or reversed, since abstinence is a mere negation, is equivalent to predicating that MUCH EVIL, AND LITTLE GOOD, ADHERES TO DRINKING. *Why* this is so, is not now the question—but if this be the fact, it is quite clear that even to a man laboring under a chronic and stationary whim, it would seem whimsical in the extreme to al-

lege that Virtue, Christianity, and the Bible *inculcated the reverse!* It is precisely because Mr Taylor *feels* this, that he carefully shuns all special and tangible arguments—his *abstractions* would look ridiculous when placed side-by-side with the concrete—his *generalities* vanish into pointless truism at the first touch of reality—and his terrible imputations crystalize into opaque prejudices in the presence of the living Truth.

The Manchester-Young-Men's-Lecture, as was to be expected, treated the same topics in a more vivacious, *ad captandum* style, under the head of Dietary and Reformatory whims. Mr Taylor defined a *whim* as "a notion, or course of conduct founded thereupon, which, "while it embraced a truth, nearly smothered it with absurdities and "specious-jargon." How serviceable a few distinctions would have been here! But alas! our literary Thrasher did not condescend also to *winnow* the Epidemic whims, and exhibit which was the pint of wheat and which the peck of chaff! We suspect very strongly, moreover, that the chaff was with the chaffer; and we do not see that it had even speciousness to recommend it. According to the reporter, "*he had no mercy* for the dupes of dietary whims," who seem to have been identified with the Lovers of Antibilious Pills. He asserts that '*every* creature' is good eating—a pleasing discovery to those who have been the dupes of an old prejudice against the kitchen rabbits that cry mew. He gives, too, some very novel-readings to divers texts of Scripture.

"*Let no man judge you in meats and drinks*"—he reads—"Let no men (as *we* do) judge *of* meats and drinks"!

As to meat suspected to have been offered to Idols, "*Eat, asking no questions for conscience's sake*"—he reads—"Eat everything, from lion to lamb, from vermin to veal, from tiger to turtle, asking no question for your *stomach's* sake"!!

From "*Every creature of God is good*"—he infers—EVERY LIVING THING is good—'*made*,' says he, 'to be *quartered*, cooked, and eaten'!!!

The 104th Psalm which explains the 'food' which God 'brings out of the earth' for the use of men, as *vegetal* productions (wine, oil, and bread), ne so liberally enlarges into *whatever comes out of dead beasts and brute matter*, as to include arsenic and alcohol, opium and tobacco, quicksilver and sea-weed, clay and custard, pork and porter, cabbage and castor oil, beef and bread, and even *beetle*,—in short, to use his own words with a negative, the psalm was "a charter of life" which announces that "there is nothing on earth that might NOT be safely swallowed—unless it be Antibilious pills"!!!!

Even this does not cap the climax: by-and-bye, Mr Taylor out-sartors himself. He says that "the *import* of the language in which this "ancient delusion expresses itself, is just this:—

"*The constitution of the world is not good, but evil, altogether evil.*
"*Hold back, therefore, from the creature, and use none of those things.*
"*Temperance is a delusion,—spurn, then, the proffered gifts of God—*
"*wrap yourself in your lofty pride—starve, blaspheme, and die!*

"This, we are bold to say, is the FAIRLY INTERPRETED LANGUAGE "of those who labor to put abstinence in the place of temperance, and "who say to me, *It is vain for you to attempt to keep the law of God.*"

Now what can we say to interpretations, which even Bedlam never surpassed in extravagance? Charity itself compels us to this assertion, since if it is not 'Midwinter Madness,' it is something very much worse than any mental 'delusion' to which Mr Taylor can be subject—it is a *perversion* and an outrage.

WHERE do teetotalers, or vegetarians, assert that the constitution of the world is evil at all, or evil only? On the contrary, they actually deduce their doctrine from natural-law.

How do they contrive to live—and as their Assurance Societies show, live healthier and longer than their neighbors—if they use NONE of God's creatures?

WHERE is the evidence that they 'starve,' or even eat less than their drinking-friends? Do they really live or *look* worse? Has Mr Taylor, we wonder, never heard of a Vegetarian *banquet*? The real and best dietetic gifts of God are gratefully accepted by us—are preferred to the artificial and inferior articles of human device;—and teetotalers as little 'blaspheme' as starve or prematurely die.

WHO has ever said that we cannot keep the dietetic law of nature? Why *preach* it, if we believe that we cannot *practice* it?

WHERE do we put 'abstinence' in the place of 'temperance'? We acknowlege the latter to denote the larger-virtue; but it is childishness or senility which would *exclude* the less from the greater. 'Mutton' is not verbally the same in comprehension—it is larger—than 'Chop'—but nevertheless 'chop' is mutton, in 'the nature of things.' So abstinence from *bad* things (as opium, arsenic, alcohol, or tobacco) is *part* of that COURSE OF CONDUCT dictated by genuine Temperance. The reason which objects to an unfitting *quantity*, equally objects to an unfitting *quality*: and the pretentious critics who overlook this, are the reverse of philosophers—notwithstanding the grandiloquence of their style, or the grundyism of society. For our part, we do not care to conceal the profoundness of our scorn, indignation, and disgust at the repetition, year after year, of these stale, stupid, and exploded fallacies.

Mr Taylor *knows* that both Vegetarians and Teetotalers base their doctrines upon natural law—as interpreted by Experience and Science: for he attempts to answer their appeal by one of the most despicable *parodies* which the whole history of polemics can furnish. He says:—

"They refer to Professor So and So's last work—proving that cere-
"als have a poisonous basis; that muscular-fibre contains only five
"per cent of nutritious aliment, whereas soup made from potato par-
"ings has 95 per cent of *solid* nutritive matter."

We do not know whether or no any of Mr Taylor's hearers were verdant enough to laugh at this unrelieved balderdash—*we* should have experienced a very different feeling at so pitiable an exhibition of imbecility—or worse. Mr Taylor scouts 'Science' and despises 'Experience.' Living in the fifth heaven of dogmatic and egoistic Spiritualism, he declaims, like many before him, against that which he does not understand. They who *do* understand organic chemistry and physiology, speak very differently of the relations of those sciences to Temperance. On the 22nd of the same month of December, 1856, in which Mr Taylor delivered his whimsical diatribe, the cele-

brated author of the Hand-Book of Organic Chemistry, Professor GREGORY, M.D., of Edinburgh, in an address to the students connected with the University Temperance Society, made this emphatic declaration :—

"*The argument from science was entirely in favor of the Temperance* "*movement;* because, while on the one hand, they had the mere pos- "sibility that alcohol *might not* be injurious in CERTAIN CONCEIVABLE, "BUT RARE CIRCUMSTANCES; on the other hand, in these circum- "stances, even when they *did* occur, *alcohol was not the best agent, and* "*they could always supply its place by other and better materials,* which "were entirely free from its injurious qualities." *

Mr Taylor ranks the advocacy of a law for Prohibiting the Liquor Traffic, amongst "*ill-considered* schemes of popular agitation: laws which abrogate virtue by substituting *compulsory-abstinence.*"

He has so little, or so ill-considered the question, as not to know the difference between a public-business and private-life: does not, in fact, know what a Maine Law proposes, and what it does *not* propose to do. We know of nobody that aims at 'compulsory abstinence,' either from dominoes or drink; but we do know of laws that refuse to license or tolerate the *trade* in gaming and the *traffic* in gin. We quite agree that it *is* a 'duty to look well to our remedies': will Mr Taylor answer our reasons? The Alliance Prize Essay waits his refutation. The great cause of crime is drinking; the causes of that are false notions and bad customs: and *our* philosophy is to remove the causes that the effect may cease. Mr Taylor thinks all this very ill-considered: but what does it matter what Mr Taylor considers? He has some scheme or other—we can't understand precisely what—which will "forward the object with more success, and with less *ambiguity* in the result." As to that, we are sceptical of his theory—and quite satisfied with the success of prohibition. Parishes without drunkards, and counties without criminals, are *very* satisfactory FACTS. Besides, we have a higher authority than all the Book-men in the world: we have the Bible. When the Almighty designed to secure *his* work of the Tabernacle from being interfered with by the Intemperance of the Priests, *he prohibited them from drinking the drink while employed in his service.* (Lev. x.) There was neither ambiguity in the process nor dubiety in the result. Whose lofty pride rejects *this* Divine example?

If Mr Taylor affirms that something *contrary* was afterwards taught, or exemplified, we meet his affirmation with an unambiguous denial—and challenge him to the proof. Prohibition was wise then, and it will remain so for ever—notwithstanding the effete criticism which can only justify the drinking of that wine which is a 'mocker,' by 'pleas and pretexts' that equally apologize for polygamy and oppres-

* This testimony is all the more valuable, because, two years before, Dr Gregory ventured a *contrary* opinion. When criticising that Work, † we predicted that a little more consideration would enable the professor to go *all the way* with us, which he has now done.

† See *Works of Dr Lees.* Vol. i. p. clxxx.

sion, and which, therefore, both common-sense and humanity indignantly reject and resent.

Mr Taylor, indeed, does not *participate* in the sin of wresting scripture to the sanction of those evils. In the maturity of his intellect, when he delivered the lectures first referred to, he said "the lawful-"ness of Polygamy would *properly* be determined, not by searching "for enactments, but by considering" the thing in its *actual relations* to woman as a living soul and co-mate of man. Yet when *we* consider the absolute *relations* of strong-drink—when *we* would look at the truth of facts—Mr Taylor, in his later age, remits us back to the ambiguity of *texts*—with his own rare and risible readings to make them pertinent!

Of Slavery he said—"Neither Christ nor his apostles explicitly for-"bad it. But they have done more—they have challenged the slave "as *man*, and have taught him that his soul can neither be bought nor "sold. Only leave this doctrine to take its effect, and it will, in its "season, emancipate his body. Christianity and Slavery work from "antagonist principles—the one is fatal to the other. The absence of "express prohibitions, *and the apparent sanction of an implicit appro-"val*, give the bolder relief to the doctrine we are illustrating. Not-"withstanding its having given its influence more explicitly to "strengthen the principle of patient endurance in the slave, than to "inculcate upon the master the *duty* of releasing his bondmen—its "force of love, as it slowly developes itself, must *at length* expel it "from the bosom of civilization—and leave it, seen and confessed, a "sheer-curse—a *nuisance insufferable, to be* SWEPT AWAY [by legal or "moral suasion?] at whatever risk."

What does this amount to? That Man-thinking will cease to be Brute or Brute-maker: and that those who *harden themselves* against the law of humanity and justice will be treated as out-laws. Mr Taylor *mis*directs the *letter* of scripture against the conclusions to which free-thought has brought the teetotaler, as to the properties of alcoholic-drink—its antagonism to health, and purity, and morals—and the awful uncleanness and insufferable nuisance of the Traffic in rum and ruin—but he *ignores* all appeal of the same kind on other subjects to which free-thought has brought himself! Nay he says, of

"Many instances in which the *patrons of prescriptive evils run to the "scriptures* to find either precedent or absence of formal prohibitions, "they totally misunderstand the Christian system."

How melancholy to see a man who has outlived his sounder thought, actually quoting scripture to uphold that system, one and indivisible, which is the fountain of three-fourths of all that most pollutes and blights the nation!

In this connection we are reminded of another fallacy of the lecturer. He passes slyly from the ambiguity of Biblical interpretation to the undisputed morality of the golden rule. For example—

"*Christianity* has amply proved itself favorable to political as well "as religious liberty."

What part of Christianity has done this? Its *texts*—or the SPIRIT that over-powers all texts? Mr Taylor has himself answered. History shows that some texts have been used to *favor* war, and others to

justify despotism. "The powers that be are ordained of God"—never *did* favor political liberty: nor the fact of the sending back the slave to his master, personal freedom. Mr Taylor winks at certain texts—instead of fairly grappling them, as *we* do—and falls back upon humanity and reason, and *general* notions of Christianity.

Carolina confutes Mr Taylor. That true work of genius, *Dred*, shows Christianity going on with the *increase* of slavery, and with less and less sentiment *against* it—(THERE, where it is, we mean,—not in the North, where it is not.) Mr Taylor alleges that *our* system "draws upon itself the ridicule of *dispassionate* men" (drunken *Punch* and Mr *Dickens*, to wit!)—"and fails to enlist in its service those whose aid would be most efficacious."

This might do for an assembly of not young Ladies, but men of the world know better. The *Frank Russells* can tell the secret. Reverend Drs *Cushings* and *Packthreads* are common to all causes, all churches, and all countries. Teetotalism is an *unpalatable* doctrine—opposed to a great many things—to which none but the most decided, the boldest, or the most conscientious, would *dare* to be opposed. * Convention of itself is stronger than conscience, with most men—whether in the church or out. Hence men in America abuse and vilify Abolitionism, as the same *types* of men here abuse and pervert Prohibitionism: the *apology* is one thing, the inward *motive* quite another.

One sentence uttered by Mr Taylor is at once so gross an appeal to prejudice, and so utter a perversion of truth, that it demands the severest condemnation:—

"Let AMERICA keep her *cherished institutions*, and we will keep "ours, which we like better." [Drinking?]

North and *South* are here wilfully fused together—to create a repellant feeling! The Country where *we* first planted the plague spot, is to be taunted in this unjust style—tho the North has long since *cast off the curse* which Britain introduced. Mr Taylor thus encourages the North in her struggle, by heaping additional difficulties in her path! As well might he charge upon the Italian patriots the deeds of her priestly tyrants—as well confound the oppressed classes of all countries with the oppressors,—as thus amalgamate the feeling of the North and the South! † Now what is the fact? The Maine-Law party

* Passing events illustrate this subject. Says the India correspondent of the *Morning Star*, of Jan. 17, 1857, "the Protestant missionaries laboring in Bengal have recently been very actively engaged in exposing the treatment of the ryots by the zemindars and indigo planters of the interior, and they have so far done well; but *I am perplexed by their silence regarding the opium monopoly*, and the system by which it is carried out. Do they *abstain from assailing it, and from pleading the cause of those whom it curses and crushes, because it is a Government monopoly*, and because the espousal of the claims of the friendless cultivators would render them objects of suspicion and dislike? If it be so, are they prepared to reconcile their conduct with the injunction laid upon them, to be *no respectors of persons?*"

† The *Times'* correspondent referring to the Revolutionary Anti-slavery Convention sitting at Worcester, Massachusetts, in January 1857, thus writes: "The North and South, they say, being *as different* as the most distinct nations, ought to separate, and both sections go the way their respective sys- [illegible] them.

is *emphatically* also the Anti-slavery party—the pro-Slavery is also the pro-Rum party. But even granting that *all* America had faults in common—and cherished them—does Mr Taylor believe in the imbecile prejudice of the old sceptical query—"Can anything good come out of Nazareth?"

Some minor fallacies we must pass over with a rapid pen—for the topic is becoming tiresome. Mr Taylor betakes himself to vaticination:

"This expedient is sure to be followed by a *dire reaction*."

To which we answer, it is a principle as much as an expedient—and the history of all that belongs to man, is the history of action and reaction. Christianity had its reaction, its corruption, its revival—its corruption again—its revival once more. Freedom has alternately triumphed and declined: so has civilization: for a good principle has to work with unstable human instruments. The cause of Temperance has revived as often as any other—and, with Truth in general, it will have some-day its immortal resurrection. We are, therefore, prepared for ups and downs, successes and reverses—in this battle of truth. Mr Taylor gets rid of the *fact* of success, by a prophecy of future failure. Hear how he now *accounts* for that success!

"When an *atom* of Truth is diligently applied by zeal, the results "*are* surprizing."

Surprizing explanation! An *atom* of Truth—that is, an indivisible, invisible, infinitesimal portion of truth—used by the architect Zeal, is sufficient to build-up a TEMPLE OF SUCCESS! The author of the 'Restoration of Belief' is here borrowing a worn-out argument of Scepticism, frequently urged to explain on NATURAL principles the marvelous success of early Christianity! Once more, hear Mr Taylor.

"It is a discouraging thought that an enterprize of such magnitude, "should have drawn around itself (?) so much that is unsound in fact "—*false in philosophy—extravagant and absurd in language*, and lies "subject to the FIXED [very fixed!] disapproval of those who have "followed with care the history of those ancient mistakes, which, ON "PRINCIPLES OF THE VERY SAME ORDER, beguiled the early christians. "We are invited and urged to build our Reformatory system on the "basis of that *oriental doctrine* which, spurning moral restraint, and "holding in contempt genuine religious motives, *put in the place* vows, "pledges, and foolish expedients. ... It must go to the work of *revis-*"*ing* itself."

Mr Taylor mistakes. It must go to the work of *exposing* those who revile it and misrepresent it: as he does. When he has become sufficiently unprejudiced to learn *what it is*—he will then be more competent to propose its revision. It is based upon principles of a *very different order* from the doctrines of oriental Dualism. This we have shown, years ago, in our *History of Ancient Teetotalism*, in our lectures on the Old and New Testament, and in the article on the Marriage at Cana. * Our lecturer has BUT ONE ITEM to show in common: we have fifty to show in *antagonism*. But if one swallow doesn't make a summer, still less does one article make a *system* of life and principles. The fundamental principle of Manicheism was the *Duality* of Nature:

* See *Works of Dr Lees*. Vol. ii. and iii.

whereas we assert the *unity* and the goodness of Nature. Moreover, a prodigious *historical* oversight is committed by Mr Taylor in amalgamating all the ancient Abstainers into *one* class. They differed immensely in their lives, their motives, and their doctrines: a fact which shivers to pieces his imposing impositions. The Nazarite, whose pledge was from God, and who was at once "pure as snow and ruddy as rubies," was equally obnoxious to this contradictory, and extravagant charge of Atheism and Dualism. So was Samson, and the Priests, and the Rechabites, and John the Baptist; and, if Ecclesiastical history can be trusted, Bishop Timotheus and several of the Evangelists.

The asserted identity between Modern-abstinence and (Mr Taylor's) Ancient-asceticism, can be established only by two methods of proof. It must be shown—either one or both—

That the *practices* are the same: and that the *reasons* for it are identical. If neither the facts nor the philosophy of the systems are kindred—then either Mr Taylor is the victim of a prejudice, or teetotalism is the subject of a perversion. We will found our comparison on facts furnished in Mr Taylor's 'Ancient Christianity.'

The Ascetics sometimes *starved*, and frequently *fasted*: the Teetotalers *never* do either one or the other—if they can help it.

The Ascetics hated fair linen and cleanliness—the Teetotalers are great supporters of washing-houses, baths, and hydropathy.

The Ascetics thought it very *meritorious* to drink fetid water—the Teetotalers are very particular in respect to the purity and softness of their beverage, and think it exceedingly *mischievous* to neglect the question of Water-works.

The Ascetics sought to weaken the body—to mortify the flesh—and to annihilate the passions;—the Teetotalers seek to invigorate the body, to vivify the flesh, to control and enjoy the passions.

The Ascetics would 'show you the highest style of man' thus:—"*There he stands, and he has supped on raw herbs and ditch-water!* Can "you produce the like to him from your sensual protestant church?" We repeat Mr Taylor's question—Can *he* produce *the like to him* from the ranks of the Vegetarians or the Teetotalers? Do Mr Simpson, Alderman Harvey, or Mr Brotherton, M.P., *look* like men who live on raw herbs? Does Mrs Brotherton's 5s. book on *Vegetarian Cookery* really instruct 'the Bible Christians' only how to *wash* cabbage, and *cleanse* cauliflower? Do Mr Cobden, General Thompson, Mr Bright, Sir Walter Trevelyan, Dr Macculloch, Professors Carpenter, Miller, and Gregory, in fact drink ditch-water? Yet Mr Taylor audaciously declares that the filthy, ignorant Fanatics who *did* all that—were 'the *totalers* of that day' *—and by implication, that 'the dirty fools of that day, are the types of the teetotalers of this'!

* *Ancient Christianity.* Vol. ii. p. 125 (1842.

Mr Taylor might have found in our opponent's doctrine, which is his *own* carried out to the logical extreme, that to which his charges of 'blasphemy' better apply. At a late meeting of the Glasgow *Publicans*, the Chairman, ex-Baillie Mitchell, and a *Church Elder* as well as a J.P., produced the following piece of astounding exegesis.

"It had been the custom to drink ever since the world began, and he was

The Ascetics abstained from things cooked by fire as an article of faith;—Teetotalers and Vegetarians equally would regard it as an article of folly.

The Ascetics renounced marriage and the claims of society, or lived in peculiar and forbidding sodalities;—the Teetotalers are philanthropists—great patrons of social festivals, merry-makings, music, and recreation—and insist strongly on the fact that the happiness of Domestic-Life is marred very much by the Public-house system.

In practice, then, the Teetotalers can no more be compared with Mr Taylor's Ascetics, than can Hyperion to a Satyr: and there is also quite as conspicuous a *contrast* in all their reasons and doctrines.

The Ascetics thought to strengthen the moral nature by enfeebling the flesh;—the Teetotalers *know* that this is a mistake, and that a sound-body is the best organ for a sound-mind.

The Ascetics believed that fasting would subdue sensual imaginations;—the Teetotalers *know* that it has the reverse effect—just as the weakness induced by stimulants brings on the false images of delirium.

The Ascetic abstained from flesh-meat, as an article of penance or piety;—the Vegetarian abstains as the means of personal pleasure and sanitary advantage.

The Ascetic abstained from alcoholic wine, believing it to be 'a *good* creature';—the Teetotaler abstains from it because he knows it to be a bad *art*icle.

The Ascetic practiced abstinence as a self-denying *grace*;—the Teetotaler does it as a source of *gratification*;—the one abstained from wine because he believed it strengthened the body and therefore the passions—the other because Experience and Science teach that it inflames the soul by *corrupting* the body.

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prepared to show that the custom was in existence as far back as the Flood. Noah himself, he could prove, was *drunk*. (Loud cheers.) It was a common saying that there was no use in quoting Scripture unless you could give chapter and verse, and accordingly he had marked down a few passages which he would read to them. There was Genesis xliii. 34—'And they drank wine and were merry.' Here is an *advice to get jolly*. (Laughter.) John ii. 10—'Thou has kept the good wine until now.' That showed they had been *drinking-freely*. Zech. ix. 15—'They shall drink and make a noise as through wine.' Here was a sanction for a merry-gathering. 1 Kings xxii. 16—'Now Benhadad was drinking himself *drunk* in the pavilion;' and the verse says thirty-two kings got drunk along with him. Jer. xiii. 13—'Behold I will fill all the inhabitants of the land, even the kings that sit upon David's throne, and the priests, and the prophets, and all the inhabitants of Jerusalem, with drunkenness.' Deut. xxix. 19—'I walk in the imagination of my heart to add drunkenness to thirst.' Psalm civ. 15—'Wine that maketh glad the heart of man;' a very good passage that. (Cheers.) Genesis ix. 21—'And he (Noah) drank of the wine and was *drunken*.' These were texts of Scripture which proved the *use* of drink, and he thought if they had Scripture for what they did, they were perfectly safe. (Cheers.)"

One wonders Elder Mitchell didn't proceed—"Judas went out and hanged *himself*"—and straightway go and do likewise—on the ground that he had Scripture for suicide!

The Ascetic might, or might not, put vows and pledges *in the place* of religious motives and moral principles:—the modern Abstainer simply regards his pledge as an *expression* of that which, to him, is reasonable, right, and good.

The Ascetic, in short, based his practices upon pietistic grounds;—the Teetotaler bases them solely upon *physiological* and *social*.

Ascetic abstinence was a *religion*, Teetotalism is a *regimen*; while the one was erroneously propounded as a virtue of the soul, the other is truly put forth as having virtue for the body.

In fine, then, the alleged identity is an *imposture*. Mr Taylor has been attacking a series of self-elaborated 'whims'—spun out of his own brain, as the glittering cobweb is spun out of the secretion of the spider's body. And, in turn, we cannot help deploring that a writer of celebrity, should lend his influence to travesty an 'enterprize of such magnitude' as ours, and *himself weave around it* so much that is

UNSOUND IN FACT,
FALSE IN HISTORY,
ERRONEOUS AND EXTRAVAGANT IN COMPARISON.

BIOLOGY; OR THE SCIENCE OF LIFE.

I.

§ 1. ALL the possible subjects of human thought are reducible to two great classes—THINGS and FACTS; or to vary the phraseology, they are either OBJECTS having a real existence in space and time, or they are STATES of those objects—that is, are beings *viewed as related* to each other, or to man, in successive moments.

SCIENCE, therefore is, 1st, the accurate, methodical *Classification of Objects*, according to their essential and permanent analogies of structure and property; and 2nd, the *Register of the Events* which happen in that invariable order which we name Cause and Effect, or antecedent and sequential states of being. In fine, Science is the naming of *Things*, and the recording of *Laws*, observed in Nature: meaning by the word 'nature,' the Creation itself and the Methods by which its course is regulated. Science.

§ 2. Speech is very much the echo of thought, and must assume in general its forms. Hence it follows, that as in thinking we classify real things according to their individuality, and generalize the common condition of change (or relation) to which they are subject, language must have two corresponding classes of Words, besides the verb of assertion representing the logical connection of subject and predicate. The first class embraces the NAMES of real entities, of concrete existences; the second is made up of ABSTRACT TERMS, which, like Algebraic symbols, denote no special *objects*, but are signs of generalizations within the thinking subject. The words Man, Dog, Horse, Gas, Vapor, House, Tree, River, Trout, are examples of the Concrete class —they have *sense* behind them. Nature, Attraction, Cause, Effect, Goodness, Swiftness, Law, Extension, Time, Principle, Force, Health, Disease, Life, Death, are instances of the Abstract class—and they have only *logic* standing under them. One set constitute the dialect of Description—the other forms an instrument of Inference: the first designate the object of our '*Perceptions*,' the most direct and certain fountain of knowlege; the second denote our '*Conceptions*'—and in their vagueness and variableness of use, have in the past presented the opportunity for endless and profitless polemics, and an apology for blind and bitter persecution. Difference of Sense and Understanding.

§ 3. 'Nature,' 'Necessity,' and 'Force,' are pregnant examples. How many disgraceful controversies have arisen out of these three

abstractions; words that have no more *meaning* in them, as commonly used, than *x*, *y*, *z* in Algebra. Useful enough as mere marks of thought, but pernicious when insanely used to represent (*non*-existent) things. Thus we often hear of 'Necessity' doing this, and 'Nature' doing that, by virtue of some 'Force' they are thought, or rather *said*, to possess. But the language is without sense; for there are *no such beings or agents existing* as Nature, Necessity, and Force, any more than there are beings or agents called Fate, Chance, or Nemesis. Modern Atheism, when using such language, is substantially repeating the fallacies of an ancient Fetichism; and utters barren solutions in a vain endeavor to banish from the normal Human Soul the grand Idea of One Presiding Agent, *underlying* all things, and *working* all things, after the Counsel of his own Will—the source of all Intelligence and the centre of all Power. It is the opprobrium of humanity, that it allows its passions to be excited by mere sounds, and on subjects of simple opinion, excited in an inverse ratio to the clearness of the evidence, and the directness and consequent certainty of the reasoning. The abuse of Abstract terms has also been one great cause of the misdirection and waste of human intellect in attempts at impossible solutions of the problems of the universe; solutions having no more solidity than MILTON'S theory of primitive Chaos, where

Abstractions.

> *Hot*, *Cold*, *Moist*, and *Dry*, four Champions fierce,
> Strive there for Mast'ry, and to battle bring
> Their embryon atoms—

an explanation which, like metaphysical theories in general, absolutely explains nothing.

§ 4. 'LIFE,' like 'Disease,' is an abstract word, and has no concrete correspondent. It is the symbol of a certain *state* merely; and the conditions which it implies, if found at all, must be sought for in some living *Subject*—some being or organ that *has* life. A search after 'Life,' or a *principle* of 'Life,' as a some *thing*, would be as foolish as the pursuit of a being called 'delight,' or a hunt after an object named 'disease.' Vitality is not a thing, but a process—or, as we prefer to express it, a *state*.

'Life' (like its cognate forms and synonyms) is very comprehensive in its uses, and its historic purport, in each particular case, can only be determined by the context. 'Life,' like the verb to *live*, originally meant to *stand*, *abide*, *exist*; in which usage it has been applied to the prime Entity, 'the Life of Lives,' the being of beings. In other uses it narrows down to the *growth* of Vegetables, or to the *breathing* of Animals. COLERIDGE defines Life as "the principle of Individuation" *—AGASSIZ as "Independent motion." These definitions seem

Life.

* That is, "a power (or process) which discloses itself from within, *combin-*

too vague and indeterminate; tho both contain portions of truth. Let us, therefore, add to the first, the notion of an *organism* that lives, and of the *media* in and thrö which it lives, and the definition will be plainer; for these are ever the correlative conceptions attached to finite Life; and even as regards the Infinite Cause, we think of Him under the dual form of *adaptation* and *power*—or of Intelligence and Will, developed thrö the *medium* of his own universe. The conception of the *singleness* of nature, or element, is inconsistent with that of Causation, which always suggests a simple-multiple, or union, as giving rise to a more complex one. This, in fact, is *the development of life*, the march of progress, thröout Creation.

§ 5. The power manifested, in the winter season, in the frost-flowers on the panes and slabs of our study-window, as in the crystals of the falling snow, is equally a case of Individuation with any other, tho not of so complex a character. So-called 'attractions,' and consequent 'non-attractions' (repulsions), are observable in *all* the spheres of existence; and, so far, Life may be said to be Universal. Water and Silver, under certain conditions of temperature and electricity, manifest this life in arborescent forms of beauty that irresistibly suggest that the process going-on here is positively the same with that which is seen, under modifying conditions, expanding in the leaves and glowing in the blossoms of the vegetable kingdom. Crystality.

As Crystality passes into Florality, so this into a latent Animality, as in the Polyp and Coral, where a number of semi-animals form one animal. By imperceptible grades the tube-like coral rises into the shelly tribes—the house becomes refined into a portion of the householder. In the Mollusk the separate organs grow distincter, and in the higher species we trace the rudiments of nerves, and an obscure kind of *sensibility*. Higher actions become possible, as in the common Mussel, and independent locomotion, as in the Snail, *when*, by the condensation of the structure, the partial separation of the fluid from the solid is effected.

§ 6. But what is the *beginning* of this sort of Life? In fatty and albuminous matter, under certain conditions, a small dot or cell called a *nucleolus*, is evolved. This, under the same conditions, gathers to Initial vital organism

ing many qualities into one individual thing." Mr Herbert Spencer, in his work on *Psychology* (as we learn from the reviews), defines Life as "*the continual adjustment of internal and external relations*"—in other words, a certain equilibrium between the forces of the organism and those of the outer world. "Life," according to De Blainville, "is the two-fold internal movement of composition and decomposition, at once general and continuous. This will become clear when we come to consider the *organism* that lives, and the *conditions* of its continuity.

itself a coating, similarly organized, forming concentric cells; and *this* is the reproductive cell, or germ, out of which ultimately all the vital-tissues have their procession; showing that organic life is a process involving the synthesis or *union* of Elements and Form: an evolution, in short, to be interpreted by the fundamental Ideas that repose at the basis of Geometry and Thought—the necessary logic of Form and the necessary form of Logic.

Organism determines function.

Complexity of Organism evermore precedes variety of Function; each explaining the other. In the insect tribe we first find a distinct separation between the organs of *irritability* (muscles) and the organs of *sensibility* (nerves). This last system, which in the Butterfly is chiefly an aid to its locomotion, and in the Fish only a partial instrument of desire, becomes in the Bird an organ of vast enjoyment, enabling the Lark by day to cheer the peasant with its gushing song, and the Nightingale to entrance the lover with its melting melody.

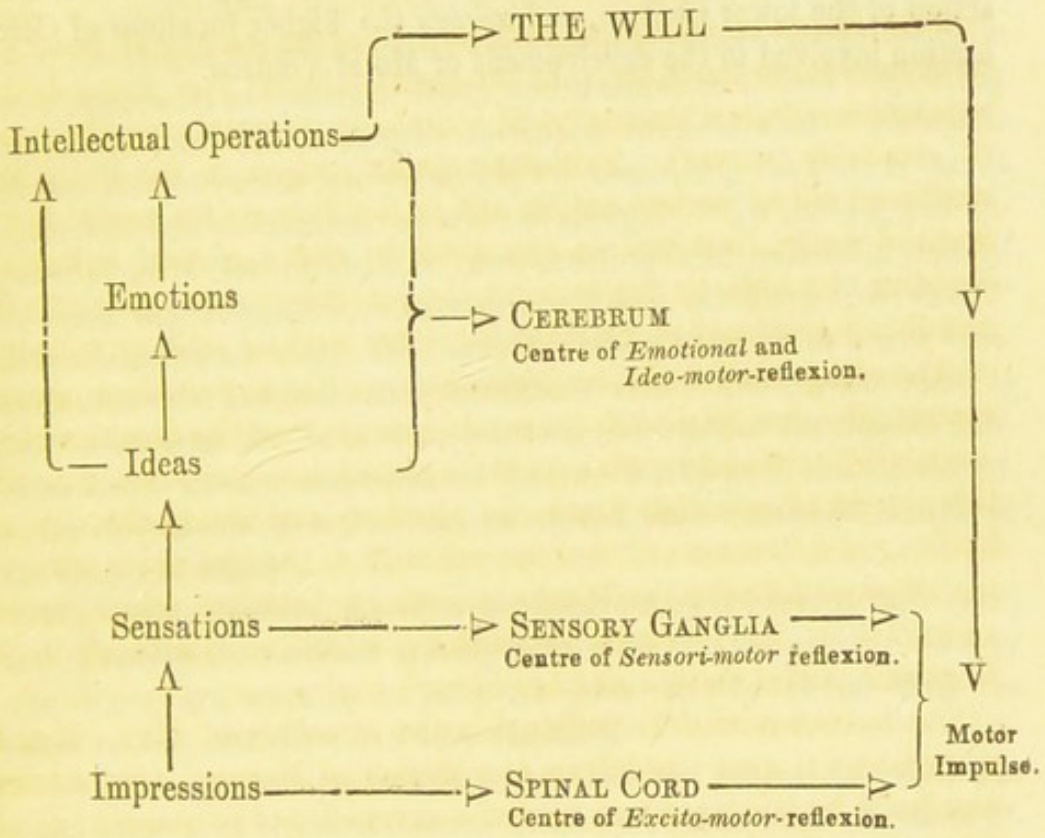
Ascending from birds to Mammals, we find a pervading nervous system giving to *Sensibility* its regal place amongst the faculties of the Animal Life; * and in *Man*, at the head of this class, we note how this system of organism becomes a platform and mechanism for the building of a SPIRITUAL TEMPLE; invisible to the eye, yet manifest in the Ways of Life and the Works of Love: in Intellect, which becomes embodied in Art; and in Beneficence, which is incarnated in the Institutions that elevate and heal.

The last result.

The consummate skill exhibited in the structure of Man, whereby he becomes at once the Mirror and Master of Nature, is indeed most wonderful in this transition from the *outward* to the *inward* life—in the manner in which insentient matter, assuming less solid and more subtle forms, gradually passes into the vehicle of mind—and thrö varying degrees and dignities of Life, in muscle, nerve, and brain, rises from *irritability* to sensibility, from *sensibility* to *Sensation, Feeling, Thought*, and from these, thrö a graduated hierarchy of Affections and adapted organs, to a conscious sovereignty of WILL.

* BIOLOGY would be a better name than either 'Life' or 'Physiology,' for the science of *organism*—while ANTHROPOLOGY best expresses the whole doctrine relating to the Life of *Man*. 'Life,' as we have seen, is too comprehensive a word, and 'Physiology,' as signifying *Nature*-science, is a mere misnomer.

The following DIAGRAM, taken from Professor Carpenter's *Human Physiology*, may aid in illustrating the functions and mutual relations of the Nervous Centres.



With the Cerebro-Spinal system to which this Diagram and the short article which follows have reference, there is associated (by a curious interlacement of the spinal fibres) the ganglionic centres and nerve-trunks of the *Visceral* or *Sympathetic* system; the function of which is to 'regulate' and 'harmonize' the organic life. It is owing to this connection, of course, that mental-disturbance or excitement affects digestion, secretion, etc., by affecting the motor-influence of this system. The organs which these nerves ramify are, under ordinary conditions, *insensible*, and perform their function unconsciously to the individual; but in *serious disease* we frequently feel pain in those parts—the fact probably being, as suggested by Mr Paget, that from the *intensity* of the impression, it is not 'distributed' and entirely lost in the ganglia, but travels on to the Spinal-Cord, and thus to the Brain.

In the *practical* application of these Facts to the Temperance question two things should be specially noted.

1st, That the power of the WILL is *greatest* over the automatic actions of the Cerebrum, and *least* over the lower Nervous-centres ministering to 'the flesh.'

2nd, That Alcohol and other Narcotics *intensify* the automatic action of the lower Centres, and *weaken* the higher functions of Cerebration involved in the development of Moral Volition.

II.

§ 7. The author will not attempt to lift up the sacred veil which hides the OCCULT—nor to *explain* the POWER which works *through*, *in*, or *by* the methods and materials indicated in the foregone sections. Lucretius called it 'the Soul of the World.' Working in Man, Van Helmont christened it 'the Archæus,' or Architect. Some German fanatics have regarded it as immanent Deity, and themselves as God! Schelling and Hegel have philosophically developed the idea that "Nature is *Eternal Reason* acting unconsciously"—negativing the notion that it is a *teleological* production, or work of design. "To the inspired Inquirer alone is Nature the holy, ever-creating, and *primordial force of the world*, that engenders, and actively produces, all things from itself." Plagiarizing these ideas, Dr Laycock dresses them up in a new vestment of words, and oracularly announces that "the Human Mind is none other than *the unconsciously-working-principle of Intelligence individualized*,—become conscious of its own workings in the Cerebrum,—and *deriving its ideas from its own constructive or material changes* in the Organ of Mind."

Atheistic theories rejected.

We simply disavow all such explanations as irreverent and vain; and in noting the methods and organisms of Nature, so that we may obey them, are content to refer all power to that Divine Will "*in whom we live, and move, and have our being.*"

§ 8. It is most important to understand the general functions and relations of that Nervous System which spreads in such infinite ramifications throughout the body—a system which not only controls all the functions of assimilation, secretion, and excretion, but conduces to the higher conditions of sensation, motion, emotion, and thought. Lop-off the twig of a shrub, and not only will the twig grow, if planted, but the shrub will manifest no sympathetic disturbance. Not so with beings like Man, endowed with Nerves. The various parts of his organism when injured, *suffer in common*—because the nerves are instruments of intelligence and of sympathy—*bonds of an organic brotherhood*—originating higher interests, and imposing loftier duties.

Functions of the Nervous System.

§ 9. The Nerve Trunks are of *two orders*—performing distinct, yet related, offices. The Centripetal convey IMPRESSIONS (or messages) from all points in the circumference of the living Empire of the Body to the Brain—the Centrifugal convey IMPULSES (or commands) from the centre to the circumference. The tissue of these Nerves—which are mostly found in close contact with each other—differs like their functions: one tissue is grey and granular, the other white and tubular. The changes wrought in the grey matter are propagated by the white, just as the

Afferent and Efferent nerves.

galvanic-power when once originated is *transmitted* by the telegraphic wire to distant parts.

Offices of the Nervous Centres.

The nervous Centres consist of several sets of distinct organs :—

1, The *Spinal Cord*, the central organ of impression and motion, and into which are inserted, therefore, the afferent and efferent nerves of the trunk.

2, The *Cerebellum*, or little Brain, which is demonstrably (not merely the organ of the erotic passion, but) the Regulator of *all* motive impulses, by calling the proper muscles into play.

3, The *Sensorium*, connected by its tubular tissue with, and placed between, the base of the Brain-proper and the crown of the Spinal Cord, is the seat of Sensation. It of course receives the afferent nerves of the special senses. There is also, probably, what we may call

4, The *Pathorium*, or Emotional ganglia, which render feeling and passion possible, as distinct motives. Lastly,

5, The *Cerebrum*, or Brain-proper, which is the organ of 'the Spiritual Man'—the instrument and palace of Thought and Will. It is an autocratic sovereign Power, when it acts at all. It *reflects* upon the representations furnished by the Sensorium and Pathorium, and *decides* "according to the counsels of its own Will."

§ 10. In order to mere Sensation, nothing more seems needed than a stimulus and sensory-nerve-terminus. Any impression on the extremity will be conveyed to the centre, and recorded there. But to *motion* something else is needed—namely, a contractile or *muscular* apparatus. It is not needful to motion, that impressions should *reach* the ultimate centre, or brain-proper; for in cold-blooded animals, as the frog, turtle, etc., crawling and hopping have been observed to occur after the head of the creature had been cut-off. This arises from what is called the *reflex action* of the SPINAL CORD—which includes what is called the *motor-tract*.

§ 11. Now the Spinal-Cord merges into GANGLIONIC MASSES—the centres of the nerves of sensation—*distinct seats* of action and feeling. These masses are connected with *consciousness*, but have no forethought, no will. As conscious, yet automatic, they are said to produce CONSENSUAL actions. Starting at an unexpected noise, running at a sudden command or in a panic, sneezing, yawning, etc., are plain examples.

§ 12. Lying mid-way between the impulses of the world without, and the action of the intellect within, the Sensory Apparatus may be set into similar activity, either by a *sensation*, or by the *Idea* or remembrance of one. Having had in our youth, Castor-oil prescribed till we were sick of it, we could not for years afterwards even *see* the article, or hear its *name*, without experiencing a disgusting sense of nausea. The phænomena of the (misnamed) Electro-biologist, point

Mesmeric action.

to a great nervous centre which moulds action irrespective of the Will, by the power of mere ideas excited when the will is weak, or asleep. In the Mesmerized patient, these Ideas are excited by outside impressions; in the Somnambule by the internal ideas of memory and association. As regards the Will, *both* states are Dreams.

§ 13. Our EMOTIONAL sensibility has probably a distinct centre also amongst the ganglia of the lower brain; and if we succeed in isolating their action, as in the previous case, we shall thereby physically explain many *moral manias*, or Epidemics of Feeling, which exist and spread in spite of science and philosophy.

§ 14. The WILL itself, it must be evident, can only *act* upon the muscular-system through the *intervention* of the sensory and motory apparatus explained. The Will, therefore, tho itself conscious, accomplishes its purposes thrö the instrumentality of an involuntary and unconscious physical servant—a mere impulse of precisely the same order as that which causes the ventricles of the heart to contract, and do their appointed work. Hence we may comprehend how repeated actions of any kind, become *habit* and *aptitude*. Instrument of the Will.

§ 15. Another great centre of Innervation is the Brain-proper—the CEREBRUM—cöordinated with the lower centres of sensation and feeling. As an impulse passes upwards, thrö the Spinal Cord to the Sensorium, and then to the Cerebral Hemispheres, where it is transmuted into *Idea* and *Will*; so an Idea, or a Volition, commencimg in the cerebrum, descends to the sensorium, exciting the automatic apparatus, and terminating, thrö muscular action, upon the outer-world.

From this we learn the great truth, *that we can effect desired alterations in ourselves and the world, solely by the employment of the appointed means in the appointed order.* If we 'excite' evil and sow the wind, we must 'reap the whirlwind'—if we 'expect' the end, while we neglect 'the means,' we *must* be disappointed.

III.

§ 16. The Temperance Advocate should be thoroly furnished and equipt against all opponents. As a writer in the *Westminster Review* (elsewhere refuted) has used the doctrine of 'Conversion of Forces,' to persuade the superstitious Worshipers of Words, that if Alcohol is not Food, it is at least *Force*, it is proper that we dispel the mystification.

Accepting the canon of Professor Groves, that "Causation is the Will of God"—we may reverently enquire into the *relations* under which the physical forces are manifested; understanding by force, that which *causes* motion, *resists* motion, or *modifies* motion. Light vivifies —Heat expands—Electricity attracts or repels—chemical affinity combines. These forces, it is alleged, are so related, that they may be *mutually transformed*. If a body in motion be impeded, by friction, a portion of force becomes heat; the arrested body grows warmer. Heat, again, in contact with a thermometer, is retransformed into the motion of the mercury. There is, moreover, a relation-of-quantity between these two phases of Force. Ceasing in one form, it necessarily assumes another. Electricity becomes lightning and flame, and then passes into heat, and back again into its old form. Heat passes into the mechanical power of steam, which is not hotter than boiling water; and steam condensed yields back its force as heat. Nothing is exhausted, nothing destroyed. The Heat-force which melted together the oxygen and copper of the early world, and deposited the metallic lava in the gaps and crevices of the Ural mountains, still exists as Chemical Affinity in the splendid *malachite slabs* which form the doors of palaces and the tables of princes. The very Heat and Light drawn from the solar rays—the great fountain of force to our terrestrial system—which, in the remote carboniferous epochs, was fixed and embodied as chemical affinity (strange paradox!) in the black 'Corpse of Coal' underlying the choice seats of manufacture and of art, are now radiating from our grate and chandelier, the one to sustain the temperature of our apartment, and the other to illuminate the paper on which we write! The light extracted from the fossil Conifera *was* literally once a sunbeam propagated across the planes of Heaven.

The theory of forces stated.

§ 17. The *living cell* in seeds and plants has palpably and emphatically the property of transforming the solar heat and light into the *vital force* of its own structure. The most virulent poisons are formed under a burning-sun, so that heat is here transmuted into what may be called *toxic-force*. In the animal œconomy there is a laboratory of *peculiar* force (or mode of force)—namely, the NERVOUS CENTRES.

Every organ of the body must of course possess *vital*-force, as the condition of its perfect growth and existence; but the Nervous Centres are a special kind of *Bank* to the system, wherein a large over-plus of Power is deposited, ready to be distributed for the needs of the organism in distant parts, on any crisis or emergency of accident or disease; ready also for any sudden call of mental toil. * Such is the theory!

Three modes of Force in organism.

§ 18. The natural 'Forces' concentred in the Human body especially manifest themselves in the form of three Functions: viz.—

1. SECRETION, including *Nutrition* as a species.
2. NERVOUS-ACTION, as previously explained.
3. MUSCULAR-CONTRACTION, as the means of motion.

In the Inorganic-world we are cognizant of a force called chemical-affinity. The force operative in the vital-processes has the peculiarity of the *opposition of direction* to this force. The one disturbs, the other conserves;—and when the vital affinity vanishes, the chemical resumes sway, and decay sets in. Nutrition and Growth exemplify the temporary, successive triumphs of this Architectural force;—*Life* exhibits the alternate balanced action and reaction of both forces, accompanied with the waste and renewal of the tissues, in which the mutual play of power occurs.

§ 19. What the elastic *bent spring* is to the watch, and the gravitating *weights* to the clock, such is CHEMICAL-FORCE to the Human Body. As the 'tendency' to severance is the veritable force, so '*disintegration*' is the actual manifestation of it—the 'spring' of power. Function and force are synchronous and common products of a single Power which has various *modes* of action. The *controlled tendency* to chemical change is the *origin* of all the capacity for Function in living bodies; just as the restrained and directed tendency of the bent-spring, is the origin and explanation of the functions of the watch.

§ 20. The process of Nutrition and Disintegration, are *not* (as Liebig calls them) examples of the vital-action of vital-power—anymore than the *working* of the watch is the result of any one factor. *Two* modes of force are essential—the chemical affinities of the organs being a source of power *coequal* with, and measured by, the *vital-force*. Nothing results from the existence of 'Oneness'—for the very idea of 'Power' involves the notion of *resistance*—of a tendency restrained. It is the *removal* of the restraint—or its disturbance by stimuli—that

* For the *generation* of these forces, we must nourish the organism; and to this end, the best conditions obviously are—plain Food, pure Water, and a sufficiency of the physical forces of Light, Heat, and Air: whereas the use of Alcohol *excites* nervous action, impairs the digestive and nutritive powers, thickens that which water liquefies, and lowers the heat and tone of the vital-current, by robbing it of the purifying oxygen.

alone ENSURES ACTION. The variety of action is obtained by varying the control, and the adaptation of the mechanism. So in man, his ORGANIZATION furnishes capacity for action, *by means* of the resistance it offers to chemical-force. The property of the organism called 'Irritability', is the capacity of responding to stimuli—just as the explosive property of gun-powder is the capacity of being excited by the spark. The action is due to a prëexisting, restrained tendency—which *lets loose* the power. The stimuli, or spark, simply upsets the equilibrium.

What is correlation?

§ 21. CORRELATED-FORCE, then, is neither the *resistance*, nor the *stimulus*; but the CONTROLLED (or latent) *tendency to change*.

Heat suspends the *attraction of a magnet* (=vital affinity.)

The Iron falls by its *tendency to gravitate* (=repressed chemical change.)

What, here, is converted into motion?

Or take the case of Fermentation with *yeast*, or other ferment.

A *spoonful* of matter sets a whole *Vat* of liquid into motion: but surely there is no 'conversion' of the force of the particle into the force of the mass? It is simply a case of *liberated tendency*. The chemical-force of the organized matters, before held in abeyance, now resumes sway, *overcoming* the resistance of the organism.

The theory of Correlation holds of growth and nutrition, but as Mr Hinton has said, "it is *entirely misapplied* as an explanation of the connexion of vital-force with functional activity." * For—

1st, It ignores the *balance of forces* in the animal œconomy, and the *accumulation* of power for repressed chemical-affinity—making this to sleep and wake alternately with vitality, and to operate, not with it, but after it has spent its energy!

2nd, The doctrine of 'conversion' is purely hypothetical, since chemical-tension, and the co-existence of chemical change and functional activity, are *facts*.

3rd, It is logically absurd, and involves the notion of an event without an adequate cause.

"Stimulus which excites function = Conversion of Force."

There is no proportion between the amount of the stimulus and the sum of force 'converted'—no ratio between the spark and the explosion.

4th, In the alleged 'conversion' of vital-force into muscular contraction, there is no *change of the matter* in which the force subsists. (Liebig, indeed, tho erroneously, supposed the power to be *conveyed* to the muscles by the nerves.) 'Conversion of force' can no more account for the fact, than it could account for a red-hot needle losing its *Heat*

* *Medico Chirurgical Review*. 1857. We are indebted to Mr Hinton for many of our illustrations.

without any cause, then exhibiting *Electricity* in the place of heat, and finally *shooting-off* spontaneously into space.

5th, While the theory explains nothing, it leads to confused and contradictory explanations. Carpenter makes Nerve-force to be at once a manifestation of Vital-force *and also* a result of the conversion of Electricity!—to have its origin both in cell-formation and in a galvanic current! Liebig makes "the conversion of living parts into lifeless compounds" the *source* of mechanical power; while he calls muscular *de*vitalization the *effect* of such power! Dr Reynolds makes *dis*integration of tissue a *source* of its vital-action, and calls muscular contraction and nervous sensibility, functions of *vital-force* inherent in cells! Here we have, first the absurdity of assigning devitalization to vital-force; and second, the ascription of irritability to the disintegrating or chemical-force; which is thereupon called by a 'new name'! Confuted theories.

§ 22. To sum up. Changes in the INORGANIC WORLD are two-fold — (*a*) those resulting from some *new-force* applied to matter, and (*b*) those arising from pre*existing tendencies*, where some force is held in check; as in explosions, fermentation, etc. Two forces.

The first illustrate *dynamic proportion* between force and action—the second, *spontaneous action* with disproportion between effect and stimulus.

ANIMATED NATURE exhibits both forms of change.

1st. In *Nutrition*, *development*, and *growth*, where the forces concerned *are* correlated to other forms.

2nd. In *Functional-action*, resulting from the Chemical Affinities of the elements of the tissues definitely and discretely controlled by Vital-resistance.

§ 23. We may now compare these principles with the threefold phænomena of *Secretion*, *Nervous-action*, and *Muscular-contraction*.

That SECRETION is dependent on Chemical Affinities, accords with the following facts:— Secretion.

(*a*) The secreted-fluids are *de*compositions. Even milk from albumen, sugar from starch, and semen from blood, obey the law.

(*b*) Secretion is dependent on the same stimuli as other functions.

(*c*) Is promoted by the application or presence of medicinal agents which *tend to lessen* vital resistance: and Liebig suggests that some secretions are normally maintained in the blood by substances in a state of *eremacausis*.

(*d*) Excessive secretion tends to disease and death.

§ 24. *Nervous Force* is excited by pressure, by motion, by heat and cold, by chemical regents, by electricity, light, sound, and by sapid and odorous particles. This is simply the common attribute of stimulants —the property of disturbing the chemical equilibrium, and permitting the play, of coerced-forces. Hence, *the same stimulus will not reproduce*

the same effect without an interval of recuperative rest, or nutrition. The organ must be re-*stored* with the exhausted 'force,' as the gun must be re-loaded. This could not be the case, if the stimulus merely induced a polar-state, or was itself 'converted' into nervous-force. *

§ 25. In the living-body, the functional decompositions develope a *peculiar* force, yet one analogous to the Electric. NERVOUS-FORCE is a polar-condition, or other molecular change, occuring in a nerve, akin to that which exists in an electrical-conducting-body. Both arise from chemical affinities being let loose thrö the disturbance of the equilibrium; the controlling power being *diminished* by the action of a stimulus. †

Of course, the nervous-force, so originated, must be *adapted* for exciting similar anti-vital transformations—must specially *excite function* by occasioning in the tissue, a subordination of the vital to the chemical affinity. Avoiding the insoluble *nexus* between the material impression and the mental image, it is quite clear that as light effects a chemical change on the retina, which developes nerve-force on the optic nerve, so that in turn determines in the brain an action of the *same order* as that in the retina. So again the nervous-force thus originated, conducted to the iris, effects a third chemical change, which produces contraction.

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* The *analogues of touch* are found in the effect of contact on inorganic compounds prone to change.

Analogues.

A sensitive-photographic surface containing a chemical compound, the elements of which tend to change—affinities so weak that light will neutralize them—form the *analogue of Vision*.

The determination of the Avalanche by the mere sound of the human voice overturning the nicely balanced forces, furnishes the *analogue of hearing*. The auditory nerve has its balanced forces upset by vibrations, which bring the chemical forces into play.

Such a change of composition in nervous substance must tend to induce a *polar-state* (or force) corresponding in every respect with what we term 'nervous force.'

In the *photographic process*, chemical change, especially the decomposition of compound bodies, is recognized as a source of Electric-force.

† That the Nervous-force is so related to function, seems explained by the fact, that the changes involved in the development and nutrition of tissues, at the same time originate a force which, traversing the nerves, augments the energies of the vital-processes, and more particularly contributes to the sympathetic development of various parts of the body, thus improving the general 'tone.' Our immediate topic, however, chiefly regards actions inducing structural *regression*.

Of course it is not every alteration in the frame which results in a *function*; for 'passive-decay' abolishes the function of the tissues. Function depends only upon such changes as are adapted to act upon functional mechanism. In a steam-engine, not every possible expansion of steam, but only a certain expansion, in degree and direction, will cause the wheels to revolve, and the work to be done.

This peculiar Nervous-force appears, therefore, to be *antagonistic* to vital affinity, inasmuch as when excited by stimulus, it tends to disintegration. Pathology illustrates this position. Ulcerated action in a part is known to be produced either by *abnormal stimulation* of a nerve (Irritation), or from *excessive stimulation* of a normal kind.

Proclivity to functional activity, as Mr Hinton also remarks, coexists with lessened Vitality: or, in other words, Irritability is generally proportioned to Debility.

So in *Lock-jaw* from wounds or disorganization in a weakened frame; or in *Epilepsy* arising from the pressure of some fragment of bone upon the nerves; or when the nervous ganglia are crushed, giving rise to vehement excitement.

§ 26. Lastly, we may note the relation of this theory to the facts of Muscular Contraction.

Contractile motion.

The *motor-power* of a muscle is the exponent of the *chemical tension* of the organism; and the *contraction* of the Muscle is the effect of a *change of composition* when the vital-equilibrium is destroyed. Viewed under the microscope, the fibre is seen *first* to contract at a point of injury or irritation.

In protracted Consumption, and other disorders of emaciation, contractile-susceptibility increases.

In vigorous health, it is precisely the stimulants that most effectively rouse the action of the Muscles, and which most powerfully elicit their inherent tendency to change, to which the Nervous-force sustains a special relationship. Next in power comes Electricity, which rapidly promotes muscular decomposition.

§ 27. The dynamical problem of the *Heart's action* is thus explainable.* It is not a 'manifestation of vital-force'— but a *conversion* of it, dependent of course upon a preceding change of the conditions of that force. It cannot take place *spontaneously*; for no material change is its own cause.

Physiologists omit an essential link of explanation: viz. the 'force' which determines a sudden change from the form of action which *builds-up* the heart's tissue, to that form which *pulls-down*, or disintegrates it. Here, as elsewhere, we must insist upon the recognition of *two inhering forces*, co-workers in Life; which otherwise would be only the procession of a kind of Harlequin-Force!

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* The theory of '*motility*' is inapplicable, whether meaning 'motion' or 'capacity.' In the Leyden Jar, electricity is *accumulated by resistance*, and transmitted when the check is withdrawn. But the heart, on this view, is in no such case; for no notice is taken of any force-resisted—but only of *one force* perpetually developed, and *causelessly* altering its nature and action!

The Heart is charged with Chemical Force. This force is *resisted by vital or nutritive action*—it consequently *accumulates*, creating tension, or proclivity to action. Dr Carpenter's comparison of the Leyden Jar is just as regards the subject, but it is misapplied as to the conditions. Muscular-contraction under a stimulus, finds its analogue in *electrical discharge* by means of metallic contact, removing resistance. The so-called spontaneous-contraction of the heart, is comparable to the spontaneous-discharge of electricity when the resistance is too feeble. In the nervous ganglia of the Heart, the chemical and vital powers are nicely balanced, and assume a condition of alternating predominant activity. The vital-force is in *large quantity*, but of *low intensity*, so that when Chemical force has been accumulated by nutrition, it *overpowers* the vital-resistance. Chemical-change ensues, and this induces contraction. †

The muscles are a mechanism adapted for the development of mechanical power from slight changes of composition.

§ 28. From the preceding survey it results, that in our view, VITAL FORCE is the *peculiar molecular action* which FORMS the Living Body. By resistance, it accumulates *chemical-force*, and furnishes the conditions for the performance of the FUNCTIONS—motion, secretion, nervous action. Thus when in the machines of art, we employ one modification of force to resist another, and divert the accumulation into the requisite channels, we are but rudely imitating that masterpiece of Creation—the Human Body.

† Sleeping and waking evince that there is a varying intensity in vital and normal actions. The Heart sleeps and wakes with each recurrence of its beat: it has its *momentary* days and nights.

ON THE

USE OF ALCOHOLIC LIQUORS

IN

HEALTH AND DISEASE.

[Printed as written in 1848.]

Chapter I.

Proposition.—*Does physiology, or experience, teach us, that Alcoholic Liquors should form part of the ordinary sustenance of man in health, particularly under circumstances of exposure to severe labor, or to extremes of temperature?*

§1. Health expresses that *state* of the human body, in which the structure of the various organs is unimpaired, and their functions perfectly performed,—a state which can alone fit the individual for discharging the duties, attaining the ends, and reaping the true enjoyments of human life.

When a person has inherited a sound organization of body, its health can be preserved only by such a course of habits as is in harmony with the *conditions* and *circumstances* on which animal life is dependent—in other words, the laws of its organic existence.

Conditions of Health.

These conditions and laws principally concern food and drink, secretions and excretions, air and exercise, labor and sleep, clothing and temperature, and the moderation of the passions and appetites of the animal nature.

The requirements and relations of life cannot be well understood without some general view of the human body, and its various systems.

§2. Man is an Organ of Action—in the highest sense, an organ of God. The work which lies before him has been sublimely declared—'Subdue the Earth' and assert your dominion over it. He has work to do, first, for the satisfaction of his daily needs, and, second, since 'man shall not live by bread alone, for the development of his Divine nature. He must, therefore, have the organs of work, the instruments of labor. These he has in his own body, *natural* instruments, for without them no artificial ones could be constructed. An instrument of Action—an organism—implies some form of solid matter, firmly held together, capable alike of pressure and resistance.

§3. The foundation of the human system, as an instrument of external action, is laid in the skeleton or bones. These constitute our MECHANICAL APPARATUS—the walls, the pillars, the protectors, and the levers, of a complicated vital machinery.

The Organism of the living Temple.

§4. But mechanical powers are passive: they need other instruments for working them. The MUSCULAR SYSTEM may be compared to straps, ropes, or pulleys, whereby these mechanical powers are moved. They are literally, by their contraction or relaxation, the movers of the bones. Such is the function of the Flesh.

§5. The muscles in turn require their movers, for they too are only instruments. These movers we find in the system of ORGANIC NERVES, proceeding alike to the muscles and organs of voluntary and involuntary motion, and conveying to each of them their appropriate stimulus. These nerves, however, but carry an energy—they are Organic Telegraphs which transmit a mental message, or a force.

§6. The BRAIN is the organ wherein nervous force is centred, and from which it is transmitted. With reference to voluntary action, that force is dependent upon Will, that is, a peculiar combination of thought and feeling.

§7. The state of the sensorium called Willing, is, in turn, referrible to the action of the NERVES OF SENSATION—another system of Vital Telegraphs, the office of which is to connect the world within with the world without: in other words, in-*form* us of the laws and realities of the outer world, by inscribing them on the walls and pillars of the vital sanctuary, and literally converting them into 'chambers of imagery.'

§8. But this chain of machinery is *vital*—and therefore subject to the *conditions* of Vitality. These include *warmth* and *movement*,—of which the first is a cause, and the second a consequence. The germs of organized existence—the seed or egg—have only *latent* vitality: they live not until they are warmed. Then they move and grow, are built up and maintained.

Need of Heat.

§9. Thus was it with the vital organization we have been describing. *Heat* was necessary to the commencement of its life and growth, and is equally necessary to the continuance of its being. Under that agency the incipient germ, like the developt infant, takes up matter from without, for the enlargement of its own structure. But what is the property of heat, or caloric? It must radiate in air, and evaporate in moisture. From the first moment of being, therefore, the vital organization, whether incipient or completed, must have been subject to the *loss* of heat. Hence a fresh supply of *heat* must be THE FIRST WANT of animal existence.

§ 10. This implies the means and material; that is, *fuel* to burn,—

air to support the combustion,—*organs* in which the fuel shall be prepared, and the vital flames kept up,—the *flues* and *fluid* by which the heat developt shall be distributed,—and the gases generated in combustion cast out. These organs constitute a special part of the human system, of which we shall speak more particularly hereafter.

§ 11. Movement also has its results. It is necessarily accompanied by change. Life itself is a process of perpetual change. All the movements of the vital machinery—of every cell, tissue, and organ, of bone, of muscle, of nerve, from the greatest to the least,—are attended by their appropriate and appointed amount of 'wear and tear.' Hence, THE SECOND WANT of the animal system is that of the means and material of growth and repair; that is, of the Matter and organs of *nourishment*. A special kind of FOOD is the *matter*, and the ORGANS OF ASSIMILATION are the *instruments*, referred to. Building Material.

§ 12. A seventh system, however, is still needed, equally and imperatively essential to the continuance of life. Every vital action and organ has but a limited duration. It lives its brief period and then dies, to be renewed by fresh matter. The waste dead matter, however, must be removed ere it be replaced by the new and vital; it must be decomposed and eliminated—for dead matter within the organism acts as a poison to life. The peculiar food employed as fuel in the human body, is also decomposed, and the elements into which it is resolved (carbonic acid and water) must, for a similar reason, be cast from the precincts of the vital temple. In fine, to avoid disease, suffocation, and death, we must have ORGANS OF EXCRETION AND PURIFICATION—a sanitary system of Sewerage and Ventilation.

§ 13. All these seven systems differ more or less in material, function, and structure; and also differ in their relative proportions and developments in different individuals. This gives rise to varying degrees of health, and appears closely connected with what is called the difference of *Temperaments*. Hence it follows, that individuals are susceptible of more or less injury from various influences. That which one constitution will easily resist, will destroy another. The state of extreme muscular development sometimes acquired by training, and called 'high health,' is incapable of being sustained. As Celsus remarks, "such a condition should be looked upon with a jealous eye." The balance between the chemical and vital forces is so nicely poised that a very slight external force will readily excite disease. Over such, inflammatory disorders achieve an easy conquest. In others, the nervous system is more liable to lose its healthy equilibrium, which, in turn, disturbs that of the circulation. Temperament.

§ 14. We may now proceed to enquire what provision the wise and bountiful Author of Nature has made for the ordinary sustenance of a healthy human system?

Food.

§ 15. The first great want of the body is *heat*, the second *nourishment*. These are our daily wants, and whatever can satisfy them is 'our daily bread'—that is, FOOD. Now, on examining the vegetable kingdom, which is the great laboratory of food, we find that all edible substances are divisible into two great classes. Whatever substance *in* grain, fruit, or other vegetable, is capable of becoming food, must be capable of supplying either the material of warmth or of nutrition. The egg is a beautiful type of this necessity; it contains the compound yolk for both uses, the white for nourishment exclusively. The following are the natural elements of food :—

Two kinds.

ELEMENTS OF RESPIRATION.	ELEMENTS OF NUTRITION.
Oil, (or Fat)	Fibrin (bird-lime principle),
Starch,	Albumen (white of egg principle),
Sugar.	Caseine (cheesy-principle).

§ 16. These substances seem admirably adapted for their respective purposes. They are all *solids* having relation to the wants of a solid living structure, into the minutest ramifications of which they have to be introduced; and they are all innocent in their chemical or physiological relations to the living tissues.

§ 17. The *sixfold* elements of fuel-food are adapted to the various circumstances of climate to which it was foreseen that man should be exposed, ranging from the torrid to the arctic zone. Rice and Sago are produced abundantly within the tropics, animal oil within the regions of the frozen north; because in the colder climate we need a more concentrated, in the warmer, a less heating species of fuel.

§ 18. The *three-varieties* of flesh-forming food, are with equal wisdom adapted to their purposes. The elements of respiration are but compounds of three ultimate chemical substances, Oxygen, Hydrogen, and Carbon—and cannot therefore take part in the nourishment of the animal body, which is composed of a much greater variety: but the Albumen, Fibrin, and Caseine, contain *all* the elements of the normal structure, already built up into forms identical with the proximate elements of the human tissues, a circumstance which alone enables them to fulfil the end of their creation.

§ 19. The *third-want* of the body has reference to drink. Not only must there be the organs and the matter of vital motion, there must also be a vehicle of life,—a menstruum of the matter of our food and frame. A medium or vehicle is required in which heat shall be distributed, and matter dissolved,—a fluid by which they shall be circulated to the remotest extremities of the organization. This is the *one* great purpose of *fluid*: and therefore nature supplies us with but *one* drink—WATER: * water, so *subtile* as to penetrate the finest cells and

Drink.

* The liquid part of sap, juice, milk, chyme, chyle, blood, lymph, is as

tissues of the system, keeping up within them the motions of life,—so *solvent* of the solid food as to become one with it, and bring the attractions of its finest parts into play,—and so innocent and *neutral* as never to disturb, in the slightest degree, the normal state of the minutest cell or atom of the complex and delicate organization.

Air. § 20. The *fourth-want* (in the co-essential needs) of the Human System, is an adapted ATMOSPHERE. This also is admirably provided for in nature. The *opposite needs and functions* of Plants and Animals are beautifully satisfied by a nice apportionment of the gaseous elements in which they breathe in common. Carbonic Acid gas is required by Plants as food, for it is the Carbon (the element of charcoal) presented in this particular form, which (in conjunction with the elements of water) they can alone *fix* or *reduce*—i.e. convert into the solid substance of their own nature—woody fibre, sugar, starch, etc. But this gas, tho food to plants, is fatal to animals if retained in the blood either too long or in too large measure. It is therefore interfused in the atmosphere in extremely small quantities, and has imparted to it a *low degree* of attractiveness, so that the blood will not absorb *it* whileever it can enjoy affinity with the vital air. This it can do, for about a fifth part of the atmosphere consists of *Oxygen*, between which and the blood, and therefore all the structures formed out of blood, the strongest affinity exists.

Life. § 21. The *state* of movement called Life, is a 'balance of powers'—just as truly as the regulated movement of a watch. Life has its Main Springs, as well as other machinery. Health in fact, is a Living Watchwork in the state of *regulated oscillation*, and the main powers at work are two—*Chemical* and *Vital*; or, in other words, the subtle forces and affinities which build-up on the one hand, and pull down on the other, all organic forms. The Vital power acts from within the organic germ or cell—controlling, modifying, or neutralizing the chemical power, which acts from without. The union of *both* is necessary to organization; therefore to life. Now OXYGEN is the chief of the Chemical powers, the great supporter of organic change and movement. Its function, in relation to the animal-fabric, is threefold—*first*, to effect that change of matter in the various living organs which constitutes their specific action (i.e. by chemical action to stimulate them to vital re-action), thus inducing 'wear and tear': *second*, to unite with the prepared *fuel*-food in the capillaries of the blood, and

truly *water*, and water only, as the liquid part of soup or pottage is the same element. The function it subserves in nature as the *menstruum* of solids, bringing their mutual affinities into play, and as the *vehicle* of movement, conditions essential to the display of life,—is well expressed by the symbolic language of the Grecian sage who characterized this 'Water of Life' as *the blood of Nature*.

burn it up (without flame) for the production of animal heat: and, *third*, to unite with the waste, carbonaceous matter of the decomposed tissues and food, in order to remove it from the precincts of the living tabernacle. [In this last function *Iron* has been supposed to play an important part: to be in fact, the appointed, and, certainly, if we regard its known affinities as manifested in *result*, the most appropriate 'Carrier of Oxygen' thrö all the vital channels of the frame.]

Oxygen.

§ 22. *Pure* Oxygen, however, like pure Carbonic-acid, would prove rapidly fatal to life: with the first we should speedily be 'burnt out'; with the last more suddenly 'extinguished' by suffocation. The Oxygen, therefore, before we breathe it into the million-celled structure of the lungs, must (so to speak) be *diluted* with the gas *Nitrogen*, constituting four-fifths of the whole atmosphere, and which, to that extent, displaces its own volume of oxygen. Here again the divine fitnesses of nature are displayed in the beautiful adaptation of means to ends. As the water which had to circulate thrö every vital atom, was made innocent and unexciting—carrying, not consuming life,—so is the gas with which we must dilute the oxygen, made *neutral* in its properties, that it may neither, on the one hand, poison the blood and irritate the lungs, nor, on the other, contribute to upset the 'balance of health' or abridge the brief span of human life.

erfection of Nature.

§ 23. If we assume that the arrangements and adaptations pointed out, are the expression of a Wise and Perfect Will,—that, in fact, there is no incompleteness, no original deficiency, in the natural relationship that exists between Man and the World wherein he is placed, we must necessarily conclude that no additional or artificial element of diet, or air, or drink, is required for the healthy and pleasurable sustenance of the human race. Man, it is true, might innocently mould or modify the natural substances supplied for food,—he might pulverize or compound, bake or boil, to suit his taste,—but we see not how he is authorized to subvert, transmute, or destroy. The *oneness* of drink, and the *variety* of food, proclaim the perfection of the Divine Works: the Creature cannot need what the Creation does not essentially contain. We may mould and modify, imitate and elaborate, but we ought not to mar, as we certainly cannot mend. We are placed in the world, as our ancestors in the mythic Garden, 'to dress, and *keep* it,' not to defile or destroy: and still we hear the Divine Announcement 'ringing down the grooves of change,'—*Behold!* I, JEHOVAH, *have commanded the earth to bring forth grain and fruit, bearing seed after their kind, to you,* O MAN, *it shall be for* FOOD!

§ 24. This naturally leads us to the question, whether some new artificial product may not be used *in the place* of the natural elements of diet or drink. Unless, however, it could be made from *in*organic

elements—and not by a degenerating and destructive process (entailing the loss of *one-half* by weight) from compounds of a greater organic complexity and perfection,—its production would be objectionable as involving a loss of human labor and a waste of pre-existing food.

Out of one decaying process (viz. fermentation), artificially induced upon one organic substance (viz. sugar), a new and artificial fluid, ALCOHOL, has arisen. The question for our consideration now is, Whether physiology and experience teach us, that alcoholic liquors should form part of the ordinary sustenance of man?

So far as the great physiological laws of the human system are concerned, there is nothing to warrant the supposition that alcohol is even *capable* of satisfying any of its ordinary and natural wants: and certainly there is no evidence of any other kind to show that it can answer any one of the purposes of food or drink, *better* than the natural elements.

§ 25. First, *Can* alcohol answer the purpose of WATER? If so, it must be because it possesses the *properties* of water. But this it does not. Its relations to the living tissues are quite contrary to those of water. Water promotes change of matter, alcohol arrests it. Water holds albumen in solution, alcohol coagulates it and thus thickens the blood. In the language of Turner and Liebig, "Alcohol greatly absorbs the 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." [a]

Can alcohol answer the end of water.

"Alcohol," says Dr Hooper, "even *separates the water from several salts* when they are dissolved in it, *and precipitates the solid matter.*" [b] "Its attraction for water," says Dr Pereira, "and *its power of coagulating albuminous substances*, are properties which probably assist powerfully in rendering it an antiseptic. [c] The *coagulation of the blood* contained in the vessels of the part to which this liquid is applied, depends of course on the *chemical* influence of the poison." Alcohol, as an antiseptic, says Liebig, opposes the change of matter, [d] a process essential to life itself, and by which, in fact, life may be measured. It is evident, then, that the properties of water are essentially and diametrically *opposed* to those of alcohol. Whatever the water does in the vital œconomy, the alcohol undoes, or tends to undo. It deranges the secretions, it contracts the vessels, it hardens the parts, and, by absorbing that fluid which is the natural vehicle of all vital movement, it arrests or reduces, the activity of the organic functions. Alcohol,

[a] *Elements of Chemistry*, sixth edition. p. 873.

[b] *Lexicon Medicum*. Art. 'Alcohol.'

[c] *Materia Medica*. p. 198. [d] *Animal Chemistry*.

therefore, which is an acrid, inflaming, volatile substance, cannot be used in the place of that simple, soothing, and natural fluid which Nature has provided as the sole beverage of her animated children,—because their properties are not kindred but contrary. Water is the Liquid Laborer which Nature employs in building up her organic Solids, and with them it traverses the fine and multifarious channels of life, not as a foe but a friend: Drink and Food in beautiful harmony! But alcohol, thrö all the ways of life, and on every vital atom, leaves the footmarks of an enemy, destroying not erecting, ruining but never repairing. If, therefore, the use of water is right, the use of alcohol must be wrong.

§ 26. Nor will the admission, that alcohol is consumed in such disguises and admixtures, as tend to sheathe its violent and essential properties, at all invalidate our reasoning. In whatever mode it is consumed it must still produce *some effect*, and an effect in keeping with its essential nature. It tends irrepealably to the consummation described; and it is monstrous to suppose that any modification whatsoever can convert an absolute poison into a positive good.

Can alcohol be food?

§ 27. Second, Can alcohol, then, be used in the place of that food which has to *strengthen and nourish* the human fabric? Not many years ago a medical work was published, in which beer was recommended as 'liquid bread'! All such notions, however, are fast disappearing before the light of an improved science. Organic Chemistry now confirms the doctrine of common sense, that no substance can nourish unless it 'sticks to the ribs,'—and is therefore a solid like the ribs. The basis of all organization is solidity, and no animal organism can be built up save out of pre-existing solids, and solids similar in composition to its own structures. What is true of the erection, is equally true of the repairing, of the human frame. It would be absurd to attempt to nourish human bones, muscles, and nerves, with water—for they are *solid*, and it is *liquid*. But that attempt would be wisdom itself compared to the prescription of Alcohol for that purpose. For, tho both are liquids, alcohol is the least solid (that is, the lightest fluid) of the two; and, in addition, while water is at least innocent, alcohol is positively pernicious.

Wants essential elements of Nutrition.

§ 28. Alcohol not only wants solidity to make it capable of nourishing a solid structure, but it is deficient besides in another essential—it wants, in its composition, *several of those elements* which are absolutely essential to constitute a nourishing substance. It has, for instance, no nitrogen (an essential principle of animal fibre), no phosphate of lime for the bones, no phosphorus, iron, and sulphur for the blood and nerves, no salts for the secretions, etc. How, then, can it possibly replace the waste of the solid organisms of man? How can it be assimilated into *their* structure?

§ 29. With the very inconsiderable quantity of solid matter dissolved in alcoholic beverages (such as mucilage and sugar), we do not here concern ourself, since we are considering the value of these drinks as determined by the *alcohol* they contain—and for the supposed virtues of which they are consumed. We will only observe that sugar, etc., are themselves not nourishing, but simply fuel food; and any quantity of such articles as might remain dissolved in a quart of ale or wine, could be compensated by a mouthful of biscuit, or a spoonful of sugar.

§ 30. Neither Chemical analysis nor Physiological science, therefore, authorize the use of alcoholic *drinks* for 'liquid *bread*.' In the language of Professor Liebig, "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." [e] Liebig.

§ 31. Lastly, Can alcohol be legitimately used as an element of respiration, that is, as *fuel food?* Some few men of note, in the absence of a thorö investigation of this subject, still hold to the 'warming' influences of wine, while others fall into the vulgar fallacy of mistaking the *feeling* of heat caused by the action of the stimulant upon the organic nerves, for the *production* of heat in the capillary circulation of the blood! Amongst these we regret to find the late President of the College of Physicians—Dr Paris. [f]

§ 32. Dr Paris objects to "excluding the use of alcoholic drinks *generally*," "as a material portion of our food," alledging that in a *very extreme case* they might be useful! So far from perceiving any logical impropriety in deducing a common practice from an uncommon case—or drawing a general rule from a rare exception—he very naively asks, 'why not'? After we have considered the ordinary effect, and inevitable tendency, of alcoholic drinks, with reference to the function of respiration, we shall proceed to examine the extra-ordinary case supposed by Dr Paris;—at present, it is sufficient to reply, that the utility of a hot fire in the depth of winter, is no proof of its utility at midsummer—and that extraordinary cases may require extraordinary remedies, which would be far from justifiable under common circumstances. The topical effects of alcohol on the vital structures, also furnish many sufficient answers to the 'why not?' of Dr Paris.

§ 33. We quite concur in the view which Dr Pereira has taken of this matter, and shall adopt the language in which he expresses it. "Tho alcohol evolves heat in burning, it is *an obnoxious fuel*. Its

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[e] *Letters on Chemistry*, 1st series, p. 57. 1844.

[f] *Pharmacalogia*, 9th ed. p. 55. For fuller answer, see our *Works*, vol. i. on 'Fallacies of the Faculty.' p. lxv.

volubility, and the facility with which it permeates membranes and tissues, enable it to be rapidly absorbed; and when it gets into the blood, *it exerts a most injurious operation*—BEFORE IT IS BURNT IN THE LUNGS—*on the brain and the liver.* Alcohol acts on the stomach [too] before it is absorbed. Tho by its combustion heat is evolved, yet, under *ordinary* circumstances, there are *other, better, safer,* and *less injurious* combustibles to be burnt in the vital lamp." [m] The natural elements of respiration, it may be added, are also much cheaper.

Professor Pereira.

§ 34. Dr Pereira himself, however, has given a sort of half-sanction to the statement of Dr Paris, that "Modern Chemistry has thrown *such light* on this subject, as to make Teetotalism a matter of wonder"! Let us, therefore impartially consider what this learned physician has propounded.

"What, then, becomes of it? *By itself it cannot form tissues, since it is deficient in some of their essential ingredients,* namely, nitrogen, sulphur, and phosphorus; and there is no reason to suppose that it contributes, *even in part,* to the renovation of tissues. Liebig's suggestion, that it is burnt in the lungs [blood], and thereby converted into carbonic acid and water, appears to me a very plausible one. By its oxidation in the lungs it must evolve caloric, and thus, when used in moderation, it serves to support the temperature of the body. This [alleged] use of it in the animal system appears to have been quite overlooked by the *Temperance* and *Teetotal Societies.*" [n]

§ 35. From the first publication of the 'Animal Chemistry' of Liebig, we have admitted that much of the alcohol ordinarily taken, *is* consumed as fuel in the blood, but we do not see how that at all impairs the principles of teetotalism. The point to be proved is, whether it can be regarded as an *innocent* and *healthy* fuel? In short, whether it can, 'in ordinary circumstances,' be considered as the *best fuel?* Dr Pereira admits that it cannot; while Dr Paris asks, 'Why may it not?' We therefore proceed to answer that question in part, by showing that it *depresses* the function of respiration, and *decreases* the temperature of the blood,—as compared with the effect of natural elements of fuel.

§ 36. The non-professional reader may be reminded of some facts concerning *oxidation,* referred to in previous sections. Oxygen (or

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[m] *Treatise on Food and Diet,* p. 52. 1843. See criticism on this book in our first vol. p. xciii.

[n] *Treatise on Food* pp. 50-1. The last sentence appears to be a mistake. Dr Pereira's book was not published until late in June, 1843, the date of the Preface. The doctrines of Liebig were fully applied to the question, in a discussion in March, 1843, between Dr Lees and W. Jeaffreson, Esq., Surgeon. See our 1st vol. p. lxx.

vital air) is the *supporter of 'combustion'*—the technical name for burning, whether that slow burning (eremacausis) which takes place in the 'sweating hay,' in the rotting wood, and in the animal blood,—or that rapid burning which is attended with flame. The process of 'combustion,' however, not only requires a supporter, but likewise a *substance of combustion* (that is, combustible material or fuel). These, in union, result in the phœnomenon of 'combustion' and the liberation of heat. The organic substance which, in growing, absorbed and fixed the caloric of the sun's rays, now, when decomposed, in whatever mode, radiates it forth again. We have already shown, that, in the human system, no action can be performed, no vital circulation or secretion accomplished, no sensation experienced, without *warmth*. If we suppose the body given, the temple in which we live completed, and the circulating fluids of the nerves and arteries placed in their proper channels—we have a splendid Anatomical Model, it may be—but not a Living Man. There is no play of thought, no flashing of the eyes, no movement of the kingly hand, *for* as yet there is no coursing of the *warm blood* thrö the thousand passages of that temple, to stir the *heart* and stimulate the *brain*. The Spirit of Life dwells only in Light and Heat: its sanctuaries must be illuminated, and its temples thermalized.

Conditions of combustion.

§ 37. Now the *warming* of the animal-house is effected by the joint action of *fuel* and *air*, as in any other house. The apparatus and process of the breathing—*respiration*—introduces oxygen (the great agent of combustion) into the blood, where it unites with its fatty or carbonaceous elements (represented in bile), which are thus decomposed, thereby (as in the burning of coal or wood)—liberating the caloric which the substance had absorbed in attaining its original organization. To that *material* in food which is fitted to unite with the air inspired into the lungs, and produce warmth by its decomposition, we give the name of FUEL, or 'element of respiration.' And if, for want of free exercise and of vital ventilation—of which last the lungs and the skin are the great organs—this fuel part of food is not briskly burnt up in the animal œconomy, nature happily possesses the power of warding off the consequences, by casting the superfluous elements out of the circulating system, and depositing them amongst the tissues in the form of *fat*—which, in fine, is nothing but so much oil laid-by for future use.

§ 38. In this way, the superfluous sugar, starch, and gum, that pass (by eremacausis) into *fat* within the animal system, ultimately attain *the value* of that substance, for the purpose of combustion under any sudden demand. But, in fact, the great and ordinary needs of the body are not 'sudden.' We do not want a sudden, *but a constant and gradual supply of fuel*. This gradual source of warmth is amply furnished in the *natural*, solid, elements of respiration, which are so constituted

Origin of fat and oil.

as not to be too rapidly consumed. We do, it is true, need a considerable variation in the quality of food with reference to its heat evolving properties; since in winter the radiation (or loss) of animal heat is much greater than in summer. To meet this need, we have food of *different degrees of heating power*, of which the highest is *fat* or *oil*. But, to make this fuel of service, we must have more air to burn it up. This too is provided for. By the condensation of the atmosphere in cold weather the *amount* of oxygen breathed into the lungs at each inspiration is evidently increased, tho the measurement is the same. Hence rigors of climate may be successfully *resisted* by the use of appropriate fuel—fuel which radiates heat *gradually*, without reducing the vital powers. There is always a certain percentage of *oil* in the blood: in drinkers a larger per centage accumulates.

§ 39. The chemical values of various elements of respiration, both natural and artificial (as sugar, starch, fat, alcohol), have been calculated by Professor Liebig. [o] He speaks, of course, as a chemist—not at all of the toxical effects of alcohol, and even much of his chemistry is hypothetical so that, notwithstanding Dr Paris's application of the words 'light' and 'proof' to the hypothesis, the statements remain to be verified by rigid demonstration and experience. Liebig himself says, in concluding his section, "*we do not know the true value, as a source of heat, of any one of these substances.*" Let us glance, however, at the value assigned to the *cheap, natural* agent OIL, on the one hand, and to the *dear, poisonous* agent ALCOHOL, on the other.

I.

Heat values of Alcohol and Food.

§ 40. *Assuming the heat produced during oxidation to be proportional to the amount of oxygen required for conversion into carbonic acid and water.*

1 lb. of Fat will combine with 511 volumes of Oxygen.
1 lb. of Alcohol will combine with 362 volumes of Oxygen.

Alcohol, less by 149

That is to say, the heat yielded by the alcohol is most rapid and evanescent; that of the fat greater, more gradual and permanent.

II.

§ 41. *Their comparative power, in oxidation, to raise water* 1 *degree per cent in temperature.*

1 lb. Fat will so affect 10, 491 lbs. water.
1 lb. Alcohol will so affect 7, 837 lbs. water.

Alcohol, less by 2, 654 lbs.

That is to say, if there be 50 lbs. of water in the blood of a man, a

[o] *Animal Chemistry*, § xix. p. 116. 1846.

certain weight of alcohol would (*cateris paribus*) [p] suffice to keep up the normal temperature of the body only 65 hours, while an equal weight of fat would sustain it for 87 hours—showing an advantage, *in this respect alone*, of 25 per cent in favor of the natural and innocent agent, which, while producing *heat* on the one hand, does not exhaust *vitality on the other*.

III.

§ 42. *Values by weight, the consumption of oxygen being assumed as equal (in round numbers).*

100 Litres of Oxygen combine with	133 grammes of Sugar of Milk		and rise from 32° to 98° F. the temperature of	lbs. of water 29,000
	68	Alcohol		29,000
	48	Fat		28,000

That is to say, 50 grammes of cheap, neutral Oil or Fat, is of as much value *for fuel*, as 66 grammes of dear, acrid Alcohol.

IV.

§ 43. *Values, in parts, as sources of heat, for equal times.*

Of Fat there is required ..... 40 parts (Sugar 100.)
Of Brandy ..... 106 parts

Of Brandy, more by 66 required.

That is to say, the alcohol is *one-fourth* dearer as regards utility; and often 500 per cent dearer as respects the money price. "Fat," says Liebig, "possesses the *greatest value* as an Element of Respiration."

Economy of Fuel.

Furthermore, 'under ordinary circumstances' in Britain, starch and sugar are, in general, amply sufficient for the purpose of their creation, i.e. as elements of respiration. Nor has Liebig *proved* the contrary. "Cultivation," says he, "is the œconomy of force. Science teaches us the simplest *means of obtaining the greatest effect with the smallest expenditure of power;* and, with given means, to produce a maximum of force." [q] In accordance with this aphorism, therefore, we ought to abandon the use of alcoholic fluids as fuel for the vital engine. The natural agents are not only more economical, but less injurious, less wasting.

§ 44. Dr Paris refers to the second purpose which should be answered by carbonaceous food, in these words: "Alcohol, by affording

[p] These *other things*, however, never are equal; and never can be. Alcohol, as an *antiseptic* and *narcotic* necessarily hinders the elimination of vital heat, by its physiologic and chemical action, as we shall afterwards find from *experiment*. As alcohol *seizes* the oxygen naturally devoted in part to the combustion of effete tissue—such waste matter is not only kept within the system defiling it, but it is *lost* as fuel for the time.

[q] *Animal Chemistry*, §xx. p. 125.

Carbon to the system, would *best prevent* the action of oxygen in the materials of the body." We have just shown, however, from the data of Liebig, that, regarding the question in a mere chemical point of view, a rasher of bacon would much *better prevent* that action than a pint of spirit. For, according to calculation I, the fat would prevent 511 volumes of oxygen from acting on the living lungs, [r] whereas the alcohol would neutralize the action of 361 only. Besides, whether in a common or extreme case, while the spirit would at first unduly stimulate the system, it would much sooner *burn out*, and leave the weakened organism still more exposed to the action of the enemy. [s]

Uses of carbohydrates.

Liebig thus states the two ends answered by fuel food:—"The excess of carbon alone, or of carbon and hydrogen, (1) is expended in the *production of animal heat*, and (2) serves to *protect the organism* from the external action of the atmospheric oxygen." [t] But what is the nature of this dreaded injury? Is it not *unnatural* organic excitement or 'irritation'? With what reason, therefore, can we take, to answer the first purpose of fuel-food (the production of heat), that which, by its essential toxical nature, *interferes* with the second purpose of such food (the protection of the organism)? That alcohol is correctly ranked amongst the class of acrid narcotic poisons, Dr Paris will scarcely have the hardihood to deny, in the face of his own book.

The crucial test.

§ 45. But we do not rest our 'cool reasonings' on mere hypothetical, or approximate calculations: we will bring them to the test of actual experiments. These are of two kinds: *one* class having reference to the amount of carbonic acid given out from the lungs in the process of respiration, and the *other* class to the actual temperature of the body, as evidenced by the thermometer. Before recording the results, it will only be needful to point out to the non-professional reader, that as the *quantity of hydrogen gas* made in the common gashouses of our towns by the burning of coals, would correctly indicate *the quantity of a given kind of coal* consumed, out of which it was made, and, conse-

[r] We do not participate in this extreme dread of oxygen. So long as men eat sufficiently of *plain food*, and drink nothing which *wastes* the *resisting force* (vitality), the oxygen will be very efficiently prevented from rusting the bars of the vital grate.

[s] Dr Paris may possibly reply, that, owing to the stimulant influence of alcohol, respiration proceeds more rapidly—in other words, that the number of expirations is raised above the average of fourteen per minute, and that, in fact, more oxygen enters the lungs within a given time. We shall allow him the full benefit of the argument. It will hold good equally for opium as alcohol; and amount to saying, that in order to avoid the adapted sedative action of the natural, vital air, we must submit to the morbid action of certain *narcotic* agents—in brief, that in order to *save* life, we must *mortgage* it—and to avoid a fancied Scylla, rush upon a real Charybdis!

[t] *Animal Chemistry*, § x. p. 67.

quently, the *quantum of heat* set free in the gas furnaces by its combustion,—so, in the human body, the *amount of carbonic acid gas* which ascends from the vital furnace of the lungs, thrö the gas tube (or chimney) of the system, [u] must indicate *the amount of fuel* consumed in its manufacture, and, by consequence, the *amount of heat* set free in the blood circulating within the living house. The more gas there is evolved, the more or better fuel must have been consumed in making it,—and the more or finer fuel consumed, the *more heat* given forth to the surrounding media. On the contrary, if less gas is evolved, less fuel must be consumed, and *less heat* generated.

§ 46. Drs Prout and Fyfe, as far back as the year 1813, were the first to determine, by accurate experiments, the true effects of alcohol with relation to the production of animal heat. The passage referring to the effect of alcohol upon the function of respiration, is to the following purpose:—Alcohol, and all liquors containing it which Dr Prout tried, had the the remarkable property of *diminishing* the quantity of carbonic acid in the expired air, *much more than anything else* which he made the subject of experiment. When *porter* was taken at dinner, the quantity was *always much reduced* below the natural standard, *while the reverse* was the case when *water* was taken. Here we trace (1) the narcotic effect of the porter, (2) the absorption by the alcohol of that oxygen which *should* have *combined* with the natural elements, and (3) the result of the water, as a medium, in bringing the *combustibles* and the *supporter* of combustion into union. The effect of the porter induced Dr Prout to extend his experiments. The result revealed was, that *alcohol in every state and quantity, uniformly lessens*, in a greater or less degree, *the quantity of carbonic acid eliminated, varying* with quantity and circumstances. When taken *on an empty stomach its effects were most remarkable*, the depression being almost *instantaneous*; [v] after a short time the powers of the constitution seem to rally, and the quantity rapidly increases; then it sinks again, and afterwards rises slowly to the standard. On a full stomach, as after dinner, the effects of vinous liquors are very *slow, but no less sure and remarkable. Dr Prout even thought them* MORE PERMANENT. As long as the effects of alcohol are perceptible, so long is the quantity of carbonic acid gas emitted, *below* the standard. With Dr Prout himself *these effects went off with frequent yawnings, and with a sensation as if he had just awoke from sleep*, after which the quantity rose much

Dr Prout's experiments in 1813.

[u] That is, the *wind-pipe*. In former ages, physiologists did not understand that this *pipe* was traversed by more than *one* sort of *gas*.

[v] Yet Dr Paris insists that his benighted traveler *should* take spirits under these circumstances! In fact, that he should literally *damp the vital fire*.

above the standard, *the system then freeing itself from the carbon retained by the influence of the alcohol.* [w]

From the detail of the experiments, * which, Dr Prout repeated, we learn that *alcohol enormously depresses the combustion of the carbon of the system during its existence in the body.*

The results of Drs Prout and Fyfe's experiments are thus summed up by Dr Copland:—

"The passions of the mind were found to have a great influence over its production; [viz. carbonic-acid] *the depressing passions diminishing its quantity,* and those of an opposite nature the reverse; exercise, when moderate, appeared to increase in some measure the quantity, but fatigue diminished it.

"THE GREATEST DECREASE EXPERIENCED WAS FROM THE USE OF ALCOHOL AND VINOUS LIQUORS, especially when taken upon an empty stomach. In short, *whatever diminished the powers of life,* as low diet, etc., appeared to have the effect of diminishing the quantity of carbonic acid." [x]

Continental Experimenters have recently confirmed the results which Dr Prout so ingeniously reached 36 years before. Dr Vierordt thus expresses the conclusion at which he had arrived. "The mean number of expirations in a minute is fourteen; that number increasing 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 respiration, than during repose." [y]

Dr Davy.

§ 47. Dr John Davy, F.R.S., in some careful experiments 'On the Temperature of Man,' has also shown, from the heat of the Tongue and the temperature of the expired Air, that the action of Alcohol, even in the mild form of wine, is adverse to the function of respiration. The quantity taken was 'very moderate'—only *three,* or sometimes four glasses—which would contain a far less quantity of alcohol than

* See our *Works,* vol. i. Appendix, p. lxxxix.

[w] This shows that *an unnatural quantity of carbon had been kept in the blood, previously;* which explains the yawning, and other narcotic effects. See details, vol. i. p. lxxxviii.

[x] *Richerand's Physiology.* Appendix, p. 626. (1829.) See also *Lancet,* 1843; Vol. ii. p. 17. See the original papers in the *Annals of Philosophy,* vol. ii. p. 328; vol. iv. p. 331.

[y] *Experimental Inquiries on Human Respiration*—Carlsruhe.

[z] *Philosophical Transactions of the Royal Society,* 1845. Part II. pp. 324, 325.—[Dr Böcker, of Crefeld, (see our *Works,* i. p. cxcviii) has confirmed these experiments; and Dr Hammond, of America, recently. An ounce of Brandy, with each meal, reduced the carbonic acid exhaled, from 11,674

'the flask of spirit,' which Dr Paris recommends to his 'starved and benighted traveler.' Tho Malt liquor was excluded, the effect of the wine was *depressive*. If the ordinary quantum was exceeded, by one or two glasses, then, in the same proportion, was the temperature *lowered*.

"*On particular occasions, when a larger quantity of wine than usual was taken*, THE REDUCTION OF TEMPERATURE WAS MOST MARKED."

If, therefore, some supposed 'instinctive feelings' should lead any unfortunately 'benighted traveler' to the use of a 'flask of wine or spirits,' in preference say to warm tea, buttered toast, and fat hamrasher, he would commit an egregious mistake, and evidence that the '*primitive* instincts' of his nature had become very depraved. For the various reasons stated, then, we are compelled to answer the query of Dr Paris in the negative:—Vinous fluids *cannot* be employed, consistently with the laws of health, as an article of ordinary diet. Additional reasons will be unfolded as we proceed.

§ 48. *Experience*, properly appealed to and discriminated, is in perfect harmony with the conclusions to which Organic Chemistry and Physiological Experiment have conducted us: and Experience, after all, must be the touch-stone of Science. However plausible the hypothesis of Baron Liebig may appear to Dr Paris, yet, tested by experience, it is found wanting. The *Chemical* prediction does *not* harmonize with the *Physiological* fact, for the simple reason, that the human body is not *merely* a chemical furnace, and cannot therefore be treated merely as such. We must not only find a fuel for the generation of animal heat, *but one, the effects of which are in harmony with all the other conditions of the healthy system*: else the expected result will not, and as we have shown, does not, actually follow. "Every disturbance of the nervous system," says Liebig, "re-acts visibly on the process of respiration." [a] "By the nerves, the substances which serve for the production of animal heat *acquire the form and the properties in virtue of which they are capable of combining with oxygen in a given time;* and when the nerves cease to perform their functions, the whole process of the action of oxygen must assume *another form*." [b] Experience.

Now, as Dr Williams remarks, "the nervous system is *an especial subject of the disturbing influence of intoxicating liquors;*" [c] and, moreover, as Liebig also admits, alcohol is an *antiseptic* that opposes the change of matter, and, by consequence, retards that natural process of

grains per day to 10,344—i.e. A TENTH OF THE WHOLE. The perspiration was *not* increased. See *American Journal of Medical Sciences*. Oct. 1856.]

[a] *Animal Chemistry*, Part I. § VI. p. 41. [b] *Ibid.* p. 39.

[c] *Principles of Medicine*, p. 27.

eremacausis within the circulating vessels, on the presence of which *the combustion of alcohol itself* depends, as much as the decomposition of sugar depends on the presence of a ferment.

Food must harmonize with the Nervous system.

Dr Williams, who does not seem to have been aware of Liebig's distinct statements on this matter, in objecting to that great chemist's theory,—often, we agree, stated too roundly,—has the following important remark, tending to show that we must look not simply at the absolute *quantity* of the fuel, but also at its *adapted quality*.

"I cannot but think that the proportion of oxygen absorbed, and of carbonic acid expired, depends more *on the condition of the blood* brought to the lungs; and that the respiratory movements are regulated by this. Thus the increased oxygenation of the blood is a *consequence of greater changes* previously wrought in the blood itself, and not a mere result of a fuller access of air" [d]— or, we may add, of *fuel*.

If, therefore, we take *all* the conditions of vital respiration into account, and do not regard animal heat as a mere matter of chemical calculation,—if we recollect that the state of the blood has a great share in the result,—that it is influenced directly by the *antiseptic* alcohol, and by the nerves, which, in turn, are either directly stimulated, or indirectly narcotized, by that agent,—we shall be at no loss to understand *why experience* gives no sanction to the use of vinous fluids, either as an article of daily beverage, or as an extraordinary element of respiration.

Nay, the argument recoils upon Dr Paris: to borrow the language of Liebig, "When *the food* is no longer transformed into that shape in which it may, by entering into combination with oxygen, *protect the system* from its influence, *then the substance of the organs themselves is unavoidably consumed.*" [e]

§ 49. A singular experience, however, has been adduced by Baron Liebig, in support of his hypothesis. It is this:—"In England, servants receive daily a certain amount of Beer, or in the case of Total Abstinence, its equivalent in money. A friend informs me, that in a certain household it was observed, that, *from the day on which the servants ceased to receive beer from their master, the consumption of bread increased in a ratio corresponding to the diminution of beer;* so that the beer was twice paid for, once in money, and the second time in the form of an equivalent of another kind of food, yielding the same amount of carbon and hydrogen." [e] We accept the fact, but put upon it an interpretation very different from the Professor's. It proves, simply, that by abstinence from a narcotic and antiseptic agent, *the*

Abstainers have better appetites.

[d] *Ibid*, p. 143. Note.

[e] *Animal Chemistry*, Part II. p. 29.

[e] *Ibid*, Part I. p. 98. Note.

natural appetite improved, because the natural functions of life, involving the due change of matter, were restored to their normal rate and vigor. Tobacco and Opium will have precisely the same appetite-destroying effect. By depressing the function of respiration,—in short, by carbonizing the blood, and causing it, so to speak, 'to lead a sedentary life,'—alcohol will doubtless lessen appetite, because it will lessen life. It may be *cheaper* to the *master* to narcotize his serf, but it is another question whether it is *better* for the servant *to be* narcotized. He who pays for the *bread* might possibly think it desirable to give the *beer*, but he who wishes to *enjoy* the *bread*, and the highest life to boot, would act wisely in declining the beer.

§ 50. It is not required that we should fill our pages with the accumulated evidences already extant in other publications;[f] we will therefore, cite only a few testimonies bearing most closely upon the proposition of the present chapter. "I have always," says Dr Ramsey Sladen, Physician General, of Madras, "been most temperate, and have enjoyed an uncommon share of health; but I find that I can go thrö bodily and mental exercise *much better*, when I abstain *altogether* from alcoholic or fermented liquors."[g] The march of the 84th regiment, from Madras to Secunderabad, a distance of 450 miles, during which they had only water and coffee as drink, furnishes a striking experience. "Altho the road is proverbial for *cholera*, and passes thrö several unhealthy and marshy districts, *the men were free from sickness to an extent absolutely unprecedented* in our marches in India; they had no cholera and no fever, and lost only two men from dysentery, both of whom were old chronic cases. The officers were surprized to find that the men marched infinitely better than they had ever before known, and were unusually cheerful." Mr Gleig, in his work entitled 'Sale's Brigade in Affghanistan,' says:—"In Jellalabad there were *no spirits:* the consequence was, that, during the continuance of this siege, there was no crime—no *sickness*." Captain Head states, that when he *entered* upon his travels in South America, crossing and recrossing the Pampas, he was *quite unequal* to the needful labor, until he gave up his wine, and confined himself to *water* and plain food as his diet. Soon after that, he could tire out many horses in his equestrian journeys. This agrees with the testimony of Mr Gardner, a

Dr Sladen.

Captain Head.

[f] Vide *Bacchus*, a Prize Essay, by Dr Grindrod; *Standard Temperance Library* by Dr Lees; Burne's *Teetotalers Companion*; and an excellent article in Dr Forbes's *Medical Review*, No. 48, 1847, where a distinguished physician, with admirable candor and most philosophical impartiality, has considered this question at great length. It is the first of the Medical Reviews that has done so.

[g] *South India Temperance Journal*, 1847. The testimony is accompanied by that of many other medical men resident in India.

surgeon, now of the Ceylon Botanic Gardens. "Whoever," he says, referring to Brazil, "drinks stimulating liquors, and travels day after day in the sun, will certainly suffer from headache; and in countries where miasmata prevail, he will be far more likely to be attacked by the diseases which are there endemic." [h]

Anchor smiths.

§ 51. If alcohol is not serviceable in warm climates, neither can it be so in warm occupations, as in forges, dryhouses, etc. This matter was fairly tested by Dr Beddoes about fifty years ago, amongst the Anchor Smiths of the Portsmouth Dockyard, and, *tho he had some difficulty in persuading six men to abstain* for a week from their beer, and to pit themselves against six drinkers for a Prize, yet, as the week's labor went on, the water drinkers discovered, to their own surprize, that they were *less fatigued than their competitors*, or than they had usually been; and on the last day they declared *that they had never felt so fresh before* at the end of a week's work. [i] Thousands of hard working men, engaged in various trades, have given similar testimony during the last fourteen years: the majority of the most cautious drinkers of alcohol, not only feeling as well without as with, but *sensibly better* in various respects. It is in vain the objector appeals to the experience of London Porters or Brewers' Draymen, etc., in proof of the strengthening properties of malt liquor. If they have not tried the *opposite system*, their experience is worthless, since the elements of a just comparison are wanting. If they are strong, tho short-lived, it is not because, but in spite, of the alcohol they absorb. Dr Smollett, in his Travels in Italy, remarks that "a porter in London quenches his thirst with a draught of strong-beer; a porter of Rome or Naples refreshes himself with a slice of water-melon or a glass of iced water: now, it is commonly remarked that beer strengthens as well as refreshes; but the porters of Constantinople, who never drink anything stronger than water, will carry a load of *seven hundred weight*, which is more than any English porter ever attempted to raise."

§ 52. It has already been made sufficiently apparent that alcohol

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[h] *British and Foreign Medical Review*, No. 48, 1847. See also the number for January 1841.

[i] "The Physiologist well knows that the quantity of hydro-carbon carried off by the lungs diminishes as the external temperature rises; and one of the reasons for the oppressive influence of a continued exposure to great heat is probably to be found in *the obstruction which it presents to the extrication of that amount of carbonic-acid whose removal is necessary for the depuration of the blood.* Now, if alcoholic liquors be injested in this state of the system, and interpose (as we have endeavored to show that they do) *a still further obstacle* to this process, the result would be precisely what experience demonstrates,—namely, the flagging of the powers of the system, from the imperfect purification of the blood."—*Ibid.*

Alcohol bad in hot places.

cannot *directly* contribute to strength, and therefore cannot be necessary for the performance of hard work in hot climates or occupations; hence the stress of Dr Paris's argument is made to rest upon its supposed virtues as an element of respiration in exposure to severe cold.

Arctic experience.

"The inference to which we are conducted by physiological reasoning, instead of being negatived *by general experience* (as it is commonly supposed to be), is fully confirmed by it. The Esquimaux, Greenlanders, and other inhabitants of the coldest regions of the globe, effectually maintain their animal heat by the large consumption of fatty matter; and whatever may be the *temporary* effect of an alcoholic draught, we believe that all arctic and antarctic voyagers agree, that *continued* resistance to cold *is most effectually maintained without alcohol*, or, at any rate, with a much smaller quantity of it than is commonly thought necessary. A very striking proof of this is afforded by the arrangements recently made for the overland arctic expedition, on which the best authorities have of course been consulted by Government. In the programme of these arrangements it is expressly stated, that *no fermented liquors* are to be used by the parties who proceed upon it. We have heard many of the now almost extinct race of stage-coachmen, who had been induced to give up their former habit of imbibing a glass of ale or of brandy-and-water at every stage, and to substitute an occasional cup of hot coffee and a rasher of toasted bacon, *speak most decidedly in favor of the superior efficacy of the latter system;* and we doubt if any man who had the resolution to adopt it, ever returned to his habits except from the love of liquor. We are strongly inclined to the belief, that *much of the reputed warming effect of alcohol is due to the hot liquid with which it is usually combined*, when used for that purpose.[k] A tumbler of hot brandy-and-water, of whisky toddy, or negus, is doubtless a very comfortable beverage when imbibed on a cold night on the top of a coach; but our own experience, and that of many others, warrants the belief that a cup of hot tea, coffee, or cocoa, will have quite as much warming influence, whilst a *cold* alcoholic drink will be nearly if not quite ineffectual. We have requested a distinguished medical officer attached to the late Antarctic expedition, to place us in possession of his opinions on this point; and we are sure that those who are acquainted with the scientific reputation of Dr J. D. Hooker, will consider the declared results of his experience under such trying circumstances as highly important. In reply to our question, whether the habitual use of fermented liquors may be *safely* dispensed with on board ship, he thus writes:—'I should

Dr Hooker.

[k] Dr Forbes's *Medical Review*, No. 48. Art. 'Temperance.' This article has since been reprinted, with the name of Dr Carpenter attached. He gives the testimony, also, of Sir John Richardson, M.D., who states that spirits are prohibited to the Agents of the Hudson's Bay Company.

say, clearly so, and with benefit, too, *provided the water be good. Allowing the water to be palatable*, I have no hesitation in saying that the habitual use of the spirit may be *beneficially dispensed with*, as far as *the health* of the crew is concerned.' In reply to our second query, whether the abstinence in cold climates is attended with *positive benefit*, Dr Hooker writes:—'I *do* think that the use of spirits in cold weather *is generally prejudicial*. I speak from my own experience. *It is very pleasant*. The glass of grog *warms* the mouth, the *throat*, and the *abdomen*; and this when one is wet and cold, with no fire, and just before turning into damp blankets, is very enticing; *but it never did me one atom of good*: the extremities were not warmed by it; and when a *continuance* of exertion or endurance is called for, *the spirit does harm*, for then you are colder or more fatigued a quarter or half an hour after it, than you would have been without it. *Several of the men on board our ship, and amongst them some of the best, never touched grog during one or more of the antarctic cruises.* In cruising amongst the ice, the ship is perhaps put about every half-hour; and we have been for sixteen hours in this state. Every time we go on deck we are drenched with cold salt water, which sometimes freezes as it falls; and when you go below, there is really nothing to do but 'lick your paws' as the men say. Nothing hot can be got.' Certainly a more uncomfortable situation, short of *positive danger*, can scarcely be imagined. Let us see what Dr Hooker says of the use of spirits on these occasions, in answer to our third query—whether there exist *any* circumstances, which in his opinion render the *occasional* use of alcoholic liquors beneficial? 'This is perhaps as extreme an instance as I could bring forward of the demand for spirits. Now I do n t believe that to 'splice the main brace' half a dozen times, or even more, in the sixteen hours, would do *any* good *in the way of giving strength;* but to refuse the men some grog would be a great hardship. I have seen grog given, half a gill at a time, thrice (I think) under such circumstances, with no perceptible harm; but I do not suppose it did any good; and more would, I am sure, have done mischief. The fact of giving it did good in one way;—it made the men joyful, not from excitation, but as we all rejoice on eating the Christmas pudding; and I quite believe that under that continued exertion, the *bad effects* were dissipated. But this is a very different thing from doing any real physical good. *I can well suppose the effect to have been, tho inappreciably, the contrary.* I know of *only one* occasion on which the spirits appeared *indispensable*; and that was when a little more exertion at the crowning of a mighty and long continued effort was demanded. Thus the ship, when sailing in the pack-ice, is sometimes beset, or falls to leeward into the lee-ice. This takes two or three minutes; but if there is much wind, it takes many hours to get her out. Not being in command, the sails are of no

Dr Hooker.

Little harm, no good.

use; and the ice prevents her mooring in any way but with it to leeward. Under these circumstances, the only way to get her out is by fastening ropes from the ship to the larger masses of ice, and warping her out by main force against the wind. Now I have seen every officer and man in the ship straining at the capstan for hours together, thrö snow and sleet, with the perspiration running down our faces and bodies like water. Towards the end of such a struggle, at the mighty crowning effort, I have seen a little grog work wonders. I could not have drunk hot coffee without stopping to cool; nor if I had, do I think it would have supplied the temporary amount of strength which was called for *on the spot* under circumstances like these. These, however, are extreme cases, which do not affect the sailor in his ordinary condition, and which any ship might be well prepared for.' "

Alcohol only a transient stimulant.

Dr Scoresby, who had been engaged 21 years in the Arctic Whale fishery, in his evidence before Parliament, in reply to the question, "Is it not the general impression that spirits are *more necessary* in cold climates than in hot?"—said; "It is a very common impression; but *from my own experience*, I can say that ardent spirits are NOT NECESSARY. I did not use ardent spirits myself, and I was *better*, I conceive, without the use of them." [1]

The late William Cobbett, M.P. for Oldham, was in his younger days a soldier in Canada. In a letter addressed to the ladies of England, January 17, 1820, entitled, 'A plan for the promoting of Sobriety and Frugality,' he thus gives his decided and conclusive testimony on this point:—

Cobbett in Canada.

"It is said, as an excuse for the use of spirits, that they *keep out the cold*. Let a man once persuade himself of that, and he will soon find that they *keep off the heat!* That they drive out the heat, is very certain; for, in the northern parts of America, where the cold is so great that people are frequently *frost-bitten*, and are compelled to have their feet or hands cut off, it is a caution always given to those who are likely to be exposed to the severity of the weather, *not to drink any spirits before they go out*. And, tho I have known many persons frozen to death, and a great many more to have their limbs cut off, I hardly recollect a single instance in which the suffering party had not taken spirituous liquors on his way, or before he went out. Spirits are very cheap in those countries. A bottle of rum for sixpence. Of course thoughtless men will use them. I have a hundred times gone out shooting or hunting upon the snow along with others, each of whom took a canteen of rum, while I took none. I used to *suck the snow*, which they told me would give me the pleurysie; but I found that I never had the pleurysie, and that many of *them* had. And as to my

[1] *Enquiry into the Extent and Causes of Drunkenness*. 1834.

ability to travel and to bear the cold, tho many of my companions were much stronger and more active than myself, I always found that, at the end of the day, I was the freshest, and by far the most cheerful of them all. *All strong liquors*, be they of what sort they may, *and in exact proportion to their strength*, tend to disable the frame from enduring the cold; tend to make the person *chilly*. The reason is this, that they have all an intoxicating effect. We clearly perceive that they *stupefy the mind*; and at the same time, they, in a greater or less degree, *benumb the body*. Consequently they tend to render it more susceptible of the injurious effects of cold."

We add, on the authority of Linnæus, that the Laplanders (who have very few diseases) do not require alcoholic drinks to keep them warm, their ordinary drink being *only water*.

Conclusion.

§ 53. We have now appealed to Physiology, Chemistry, and Experience in reference to our first proposition, and their answer seems conclusive in the negative. They do *not* teach us that Alcoholic liquors should form part of the ordinary sustenance of man in health, either when subject to severe labor or to extremes of heat and cold. On the contrary, they unite in furnishing abundant reasons for the belief that the beverage-use of alcohol is opposed to the highest health, and most developed capabilities, of Man the Worker.

They not only demonstrate the needlessness of such drinks in health, but illustrate anew the perfect wisdom of that Divine Power who, in Nature's aliment of Milk, has exhibited *the type of all proper kinds of diet*,—wherein the neutral water, the nutrimental caseine, and the soothing oil and sugar, each find place, but from which all exciting and narcotic matter is excluded. The regimen of Samson is but the regimen of Nature, approved by Revelation as by Reason, and exampled afresh in the nursing and renovation of every child. The apostrophe of the noble Milton is not without its meaning:—

> O Madness! to think use of strongest wines
> And strongest drinks, our chief support of health!
> When GOD, with these forbidden, *made choice* to rear
> His mighty Champion, strong above compare,
> Whose drink was only from the limpid brook.

Chapter II.

Proposition.—*Is there any special modification of the bodily or mental condition of man, short of actual disease, in which either the occasional, or the habitual, use of Alcoholic Liquors, may be considered necessary or beneficial?*

§ 54. What *is* Disease? A state contrasted with Health (see § 1); and, therefore, *a condition of the body in which some of its functions are disturbed, or some of its structures impaired.* Life, as we have explained (§ 21), is a nicely adjusted system of vital powers and chemical properties, in which each individual has his special *constitutional* balance (§ 13). The disturbance of this balance is disease of function, the continuance of which produces *diseased structure*—the first having reference to Physiological, the latter to Anatomical integrity, from which they are respectively departures. Disease what.

It is the business of *Hygienics* to prevent, and of *Medicine* to restore the first; and thereby to avoid or remedy the second.

As Dr Williams has remarked, "varieties of temperament, altho they can scarcely be called *morbid*, yet certainly give *a proclivity to disease.*"[a] Exposure to certain morbific influences, or the necessity for the performance of some excessive task, may also be viewed as disturbers of the normal state—placing the body upon the borders of disease. To use a figure of speech, the enemy has not yet commenced the actual siege, or effected a breach in the walls, but he has taken up his position before the Living City, and is preparing his artillery for action. Are there, then, either any *occasional*, or any constitutional, conditions of the body, short of actual disease, which demand (we will not say absolutely necessitate) the temporary employment of alcoholic stimulants?

§ 55. We can certainly conceive of a temporary state of mere *languor*, accompanied by nervous excitement or depression, in which some narcotic or stimulant (as ether, alcohol, or opium) might be attended with benefit; tho, at the same time, we consider that other, less injurious, and safer modes of treatment might be adopted. During the last fourteen years, we have ourself been subjected to great vicissitudes of physical life—including extreme exertion and cephalic excitement, attended with wakefulness—but have found other expedients (as a small dose of powdered valerian, or cold sponging and friction of the skin, water-bandages round the waist, and the application of cold wa-

[a] *Principles of Medicine*, § 8.

ter to the head) both hypnotic and refreshing. With this limitation, therefore, we have no difficulty in admitting the statement of Dr Williams, that, "Weak persons and others, under the influence of fatigue, may often advantageously take a little wine or alcoholic mixture at supper; its operation, which counteracts the exhaustion and nervous excitement induced by weakness, being composing and hypnotic." [b]

Dr William's test.

In these cases, however, as well as in *failing medullary function* manifested in some peculiar constitutions under certain *sudden* influences (as fear and sorrow), "the best proof of the beneficial operation of ammonia, ether, brandy, and other stimulants, is *when they procure refreshing sleep*, which in itself is a source of renewed power." [c] Dr Williams wisely adds:—"Other means must not be neglected *to sustain* the power restored by stimulants, especially *suitable nourishment*, frequently administered in a liquid form." By the word 'power' is meant 'action'—for power is only 'called forth' by stimulants, not generated. In all these states, however, it is only the *temporary* use of stimulants and narcotics that can be at all beneficial—their 'habitual use' would evidently aggravate the temporary evil.

Stimulants exciting, not sustaining.

§ 56. It may be urged that stimulants (as alcohol, opium, tea, coffee, etc.) are *occasionally necessary* for the performance of mental tasks. [d] If this were so, it would only prove that one necessary (or rather artificial) evil, had induced another. But on recalling the fact, that alcohol *carbonizes* the blood, we shall see reason for believing that its use cannot, in any way, promote the sound action of the intellectual powers. Dr Paris has quoted the Jewish Scriptures to support his prescription of alcohol for the removal of a depressed *mental* condition. In answer to both arguments, we beg to quote the experience of the late Dr James Johnson:—

"I would seriously advise those whose situations in life subject them to great mental exertion, as well as trials of their fortitude, to make use of this abstemious regimen when more than usually oppressed by intellectual labor, or tribulations of mind, instead of flying to the stimulus of wine and savory aliments, as temporary recruits for the exhausted

Dr James Johnson.

[b] *Principles of Medicine*, § 155.

[c] *Ibid.* § 672.

[d] The present writer, tho not of an enduring temperament, finds his *ability* to pursue mental labor continuously to be most promoted by abstinence from *all* stimulating food and drink. The present Essay is an example, being entirely composed and written *in eight days*, without a single note being previously prepared, owing to his not having seen the prospectus of the Prize Essay (finally awarded to Dr Carpenter) before the 16th of December. He is, therefore, quite aware of its defects.

spirits. This last is a dangerous expedient, * and fails at all points. The prize-fighter and the pedestrian live abstemiously when preparing for feats of corporeal activity. *The candidate for intellectual prizes must pursue a similar course, if he mean to be victorious in the end.* Both experience and observation have convinced me that the mind can undergo a greater quantum of labor when the body is kept in an unexcited state, than stimulated by the luxuries of the table. The same remark will apply to those who have become the victims of misfortune. Let them not fly to the momentary solace of *stimulants, which only consume more rapidly the taper of life,* and render them less able to bear the vicissitudes of this world." [c]

Alcohol for Nursing mothers.

§ 57. Concerning the apparent necessity or utility of alcoholic drinks to mothers, the following observations are in the main so excellent, that we prefer quoting them to offering any lengthened remarks of our own. We would observe, however, that in admitting the *fact* of benefit, we do not fully concur in the *theory* to which it is ascribed. Alcohol cannot either digest food, or make the gastric juice more capable of doing it (§ 108). By exciting the flagging digestive 'apparatus'—by occasioning more oil to be secreted in the milk—by rousing the energies of the vital capillaries, and augmenting the force of the circulation which *distributes* the pabulum, alcohol might, for a short time, do good, but it can never really aid the *chemical solution* of the food—the true digestive process.

"It is by their temporary stimulus to the digestive operations, that fermented liquors seem to be *occasionally* useful during pregnancy and lactation. We believe that in every case in which the appetite is good, and the general system healthy, the habitual use of these stimulants is positively injurious; and the regular administration of alcohol, with the professed object of sustaining the strength under the demand occasioned by the copious flow of milk, is one of the grossest pieces of *quackery* that can be perpetrated by any practitioner, legal or illegal. For alcohol affords no single element of the secretion; and if the materials of the latter are introduced into the system as fast as they are drawn out of it, there is no exhaustion. *In a healthy subject,* and under a proper system of general management, this *will* be the case; and *alcohol can do nothing but harm.* But there are cases—very few, however, in comparison with the whole—in which the conditions of pregnancy and lactation produce *an irritable state of the stomach,* that prevents it from digesting, or even receiving, that food which the system really demands; and in some of these we have known the regular administration of a small quantity of alcoholic liquor more

Quackery.

* Dr Hugh Miller is now a melancholy example.

[c] *Essay on Indigestion,* 10th Ed. p. 76.

Dr Carpenter.

efficacious than any other remedy. In one instance of this kind that fell particularly under our notice, in which the mother was most anxious to avoid the assistance of fermented liquors, the lactation must have been early stopped, on account of the want of functional power in the stomach and the very poor quality of the milk, had it not been that the administration of a single glass of wine or tumbler of porter, per day, was found to promote the digestive power [query, functions] to the requisite degree, and thus to produce a general invigoration of the system, which was speedily manifested in the improved condition of the child as well as of the mother. The small allowance we have mentioned never required an increase, and was relinquished without difficulty soon after the weaning of the infant.

"We believe, then, that cases are of no infrequent occurrence in which, under some *temporary* depressing influence, the powers of the digestive apparatus are not adequate to supply the demand upon it made by the system, and that recourse may, in such cases, be advantageously had to alcohol *as an equally temporary stimulus.* But it is worthy of consideration whether, when it is thus administered for purely medicinal purposes, it may not be desirable to *give it in such a medicinal form* as will render it not peculiarly palatable or inviting, in order that the patient may have no inducement to continue the use of it after the real demand has ceased to exist." [f]

Peculiar constitutions.

§ 58. But may not alcohol, in some form, be *habitually* employed with advantage in certain *peculiar, yet healthy* constitutions?

We think not; but prefer that more experienced men should, in this case, furnish the reply.

Dr A. T. Thomson, after referring to the exciting powers of diluted alcohol, and their supposed utility in *disease,* puts the following query: "It may be reasonably asked, however, of what benefit is even the temperate use of ardent spirits to a healthful individual, who requires no additional excitement, either of his mental or corporeal energies? To this question no satisfactory reply *can* be offered: and, notwithstanding the universal propensity of the human species for intoxication, and the ingenuity exercised in obtaining means to effect it, yet ardent spirits can be justly regarded in no other point of view than as either a medicine or a poison." [f]

Dr A. T. Thomson.

Professor Christison.

Professor Christison, also, has some most pertinent observations on this topic:—"The special applications of wine are partly dietetic, partly *medicinal.* IT IS AN UNNECESSARY ARTICLE OF DIET FOR ALL WHO ARE HEALTHY, robust, and engaged in an active occupation. But

[f] Dr Forbes's *Medical Review,* No. 48.

[f] *Materia Medica,* 2nd Ed. p. 207. We would add, *if* only a medicine, *therefore* a poison.

the *artificial state of the constitution* produced by the habits of civilized life are *supposed* to render it, for some people, a necessary stimulant, especially during exposure to unusual fatigues. *Very few constitutions of this kind really exist among those who are willing to think they themselves possess it.* And there are EXTREMELY FEW persons, *not hardened by the habitual use of wine*, but will find that they sustain bodily fatigue and mental exertion as well at the time, maintain it as long, and suffer as little subsequently, under the practice of abstemiousness. The habitual use of wine is safest, or most salutary [*least* hurtful], when the habit is united with regular exercise out of doors, *and most hurtful where the occupation is sedentary*, and the mind most exerted." [g] In other words, the sooner it is got rid of, the less mischief it inflicts.

§ 59. The conditions and constitutions of which we are speaking in the present chapter, are those '*short of actual disease.*' So far from alcoholic fluids being habitually necessary in such cases and constitutions, we hold that the use of alcohol must necessarily *tend to generate*, and as a rule must sooner or later produce, *actual disease* itself.

Alcohol tends to disease.

In the first place, "the preternatural excitement which it would occasion, *must* be followed by a corresponding degree of depression." [h]

In the second place, "the habit of using this stimulus *creates a want* for it, [a proof that the natural state is disturbed]—"and thus it often happens, that those who have accustomed themselves to the [so called] temperate use of *wine*, *suffer* when they are deprived of it." [i] Is not this equivalent to saying, that the normal condition of the system *is* disturbed?—that disease *has* begun?

And, in the third place, the carbonizing influence of alcohol, must leave the vital pabulum of the blood deteriorated, to some extent, as well as the nervous energy impaired: in short, must produce the precise effect of *imperfect* ventilation. Tho not in all cases able to *note* the degree of injury (which may only be negatively exhibited in constitutions in which the respiratory function is naturally full and free); yet it would be exceedingly unphilosophical to assume that *no* effect had followed. In the most apparent instance of exemption or impunity ever cited, we have no ground for any such absolute conclusion. The argument proves too much, for, in almost every unhealthy trade or locality, *some instances* of moderate health and long life will be found—nay, even cases of absolute excess and intemperance. But what positive rule can be drawn from these apparent exceptions? The philosopher cannot even accept them as variations from a law. He would require to know the amount of the *original vital force* in such instances;

Alcohol opposes ventilation.

[g] *Dispensatory*. Art. 'Vinum.' p. 943.

[h] Pereira, *Treatise on Food*, p. 425. [i] *Ibid.* p. 425.

whether it was not *above the average*, both in intensity and extensity; and therefore capable of carrying the Vital Engine both farther and faster upon the line of Life? (See Chapter V.)

How medicines act.

§ 60. Is not the true statement of the matter that which Dr James Johnson has put forth? "Every substance, medicinal or dietetic, which is applied to the stomach, induces a physiological action in the nerves, blood-vessels, and fibrous structure of that organ, which we call *excitement*—and the aptitude or capacity of the stomach for the production of this action, we call its *excitability*. If the substance applied be of healthy quality and in proper quantity, it produces *insensible or salutary excitement:* that is, an action of which we are unconscious. The substance may then be termed merely an excitant, as a moderate quantity of plain food and drink. But let the substances introduced into the stomach be of *improper quality*, or in *improper quantity* (as ardent spirits or acrid medicines), and the action produced thereby will be raised from *insensible* to *sensible* excitement—that is, we shall be conscious of something going-on in the stomach. Here the agent introduced no longer deserves the name of healthy *excitant*, but becomes, in fact, an irritant—and the action induced is *irritation*, rather than excitement. It is not very material whether the *sensible excitement* induced in the stomach by food or drink be of a pleasurable or painful kind. The final result will be the same—irritability, or *morbid sensibility*. If the excitement be pleasurable, as from wine, we are *spoiling* the stomach, as we spoil a child, by indulgence; we are *educating* the organ improperly, and laying the foundation of morbid irritability. On the other hand, if what we take into the stomach induce disagreeable sensations there, we are then offering a violence to the organ which will very soon terminate in disease; or more properly speaking, the natural excitability of the stomach is already changed into morbid sensibility, and disorder has actually commenced. The qualities and quantities of food and drink which produce or keep up irritation and morbid sensibility in the digestive organs, *are but little suspected of mischief, because they are in general use*, and because *many* individuals are daily seen to take far greater liberties with the luxuries of the table *without any very apparent bad effects* resulting. The evil day, however, comes at last, and it is found that the same food and drink which had been so long taken with impunity, now begin to be followed by uncomfortable sensations, and, at length, with *actual disorder* in the digestive apparatus." [j]

We conclude, then, that there is no special modification of the bodily or mental condition of man *short of disease*, either structural or functional, temporary or permanent—in which the *occasional* use of alco-

[j] *Essay on Indigestion.* pp. 50, 51, 52.

holic liquors is *necessary*, and few in which it is 'beneficial': and that there are absolutely no peculiar constitutions on which their *habitual use* would not inflict a greater or less degree of injury.

[§ 61. The publication of the Prize Essay in 1850, necessitates an additional section in this place, since in that work (p. 219), Dr Carpenter cites the experience of M. Boileau Castelnau (till recently, chief physician at the large prison at Nismes, called the *Maison Centrale*) to disprove "by the experience of a large number of individuals, the position of those who assert that, under no circumstances, can the *habitual use* of alcoholic liquors be otherwise than injurious." The prison usually contains 1200 convicts, who are badly lodged, badly fed, and constantly overworked. The rate of mortality was always high, but in 1839 it suddenly rose from 1 in 12.32 to 1 in 7.85. The cause of this augmentation, says Dr Carpenter, "seems to have lain in a ministerial ordinance issued on the 10th May 1839, limiting the alimentary articles allowed to be sold at the canteen, to potatoes, cheese, and butter. Previously to that time the convicts had had it in their power to lay out a portion of their earnings in the purchase of *wine* and *tobacco*, in addition to the articles just named; but these were now prohibited." Butter and cheese at Nismes are luxuries so costly as to be scarcely within reach of the prisoners. The potatoes are more indigestible than those in the North.

The Maison Centrale.

"The rate of mortality," continues Dr Carpenter, "was somewhat diminished in the following year, the diet being increased, and the prisoners receiving small supplies of wine and tobacco." After this the *Frères des écoles chrétiennes* visited the prison, the regulations were relaxed, and the deaths in 1844 were but 1 in 23.88. The *frères*, however, being obstructed gave up their charge, the old system was revived, and in 1845, the deaths were 1 in 19.63, in 1846 1 in 16.52, and in 1847 1 in 13.57. "It seems obvious," remarks Dr Carpenter, "that from the large increase in the rate of mortality *which ensued upon the prohibition of wine*—no extraordinary depression of temperature having existed to account for it—that *its* deprivation exerted a positively injurious effect." Feeling assured that there must have been some other cause than the one assigned for this increased mortality, our friend Mr T. H. Whittell, Surgeon, of Birmingham, addressed some queries to Dr Castelnau, and obtained a *more complete* account of his experience. The following is a summary of the facts contained in the doctor's very courteous reply.

Error of Professor Carpenter.

1st. The ordinary prison allowance of food was purposely fixed at the smallest possible quantity, so that the prisoners might be induced to work. They obtained money by their labor, with which they could purchase at the canteen an additional supply, and thus compensate for the deficiencies of the prison allowance.

2nd. Amongst other articles the following could be purchased at the canteen. Wine (1 demilitre to each meal), boiled beef or mutton, cooked or salt-pork, salt-fish, mixed pieces of meat of inferior quality, and cheese.

3rd. The regulation of May 10th, 1839, "reduced the supply of victuals at the canteen to cheese, butter, and potatoes boiled in water," besides which, *silence* was enjoined in the workrooms, in the courtyard, and in the dormitory.

Thus the mystery is cleared up. It is obvious that the increased mortality was due chiefly to the withdrawal of the *beef, mutton, pork, fish, and mixed pieces of meat,* and not, as Dr Carpenter supposed, to the prohibition of the wine. Dr Castelnau adds, that the *increased severities* to which the prisoners were subjected, and especially the enforcement of the silent system, had a very prejudicial effect.

The renewed supply of wine seems to have had little or nothing to do with the diminished mortality in 1840. The following is Dr Castelnau's account of it. "The diminution resulted from the repeated remonstrances of the physicians, who obtained some changes in the nature of the supplementary provisions sold at the canteen. *Cod fish, dry pilchards, some dry fruits, figs, in summer grapes,* a little wine for some; somewhat later a little *meat*: *a supplemental allowance of bread was also distributed.*"

Thus the experience of the *Maison Centrale* is no exception to the doctrines of teetotalism as taught by those who believe that under no circumstances can the *habitual* use of alcoholic liquors be otherwise than injurious.]

Chapter III.

PROPOSITION.—*Is the employment of Alcoholic Liquors necessary, or beneficial, in the practice of Medicine? If so, in what diseases, or in what form and stages of disease?*

§ 62. Dr Paris, in his 'Pharmacologia,' quotes with approval the the following declaration of the wise man :—

"The Lord hath created medicines *out of the earth*. With such doth *He* heal men, and taketh away their pains."

This principle implies, that, when the Divine eulogy—'It is very good'—was pronounced upon the finished creation, it contained every *essential* element both of *food* and *physic*, and it shuts us up to the conclusion that Alcoholic Liquors are *not absolutely necessary*, since they certainly are not natural but artificial, not of Divine Creation but of human device. They may, indeed, be relatively indispensable,—as the Cautery before the invention of the Tournaquet—but, without libelling nature by implication, we cannot affirm that alcoholic liquors are *absolutely* essential. Preferring to ascribe imperfection to the Physician rather than defect to the Deity, we will discuss the question of the Medical-use of alcohol with reference *only* to the present condition of medical science—not its absolute necessity, but its *possible* benefits. *

As an illustration of our meaning, we may refer to the *accredited* treatment of Cholera. The absolute *necessity* of stimulants (brandy, etc.), was long maintained: yet the statistics of the various modes of treatment, and the comparison of results with the regular course of the disease, have now shown to a demonstration, not only that the use of the *artificial* stimulant is *not necessary*, but in fact the most fatal of all modes of treatment; while the use of ice and cold water, both inter- Cholera.

* The following paragraph, extracted from the *Medical Times* of March, 1849, confirms our *a priori* reasoning, by showing that a *natural* remedy may be discovered for a disease, thus placing all *artificial* substances out of the category of 'absolutely *necessary* medicines.'

"A new antidote against the Cholera. There has been discovered in Mount Olympus, in Asia Minor, a plant of which the botanical name is unknown. The stalk and leaves resemble thyme, the flowers those of lavender. After a number of experiments it has been found that a decoction of this plant has the power of producing re-action in the state of collapse in cholera, or to arrest the diarrhœa and sickness—in fact, to bring about the most satisfactory results. This plant which is affirmed to be a true specific against cholera, is known by the name of *zhorabia*."

nally and externally, is proved to be incomparably the best.[a] The issue affords another proof of the folly of Man and the perfection of Nature, for, as Dr Billing observes in his 'Principles of Medicine,' "the constant desire for cold water in cholera, is an example of *natural instinct*, which is *thwarted by man* in his wisdom."

Great mistakes have doubtless been committed, concerning the Medical-use of Alcohol, both by the professional advocates of its merits on the one hand, and by portions of the Temperance public on the other. One party has grossly overrated its virtues, the other totally denied its advantages. We quite accord with the statement of an eminent writer, that "nothing can be more absurd than to say, that because alcohol is a *poison*, it can never be beneficial, since the same applies to every one of our most potent medicines."[b] There is, in truth, nothing in common between denying the use of poison *as food*, and denying its use *in disease*; it is really theoretically absurd, and only to be paralleled by the contrary absurdity—the prescription of alcoholic *medicine* as an element of 'our *daily bread*.'

'In poison there is physic.'

§ 63. The principle should never be forgotten, that all physic is evil *per se*; that, like amputation, bleeding, or blistering, it is an extraordinary remedy for an extraordinary purpose; in fine, a choice of two evils, in which we endeavor to select the less in order to avoid the greater. Dr Trueman well observes, that "no disease can be cured without injury to the health, for the *remedies employed always cause some excessive and unnatural action* in the body, which lessens its power":[c] and, Dr Williams, under the head of "non-alimentary ingesta which may cause disease," reckons "various medicines; not only when injudiciously administered, but as commonly prescribed: the remedies necessary to cure or relieve many diseases are, not uncommonly, *necessary evils*; they remove one disorder by inducing another, and it is well if the evil thus induced is the smaller of the two."[d] Unfortunately, this liability of medicines to produce new diseases, or to aggravate old ones, has been too often disregarded by practitioners, and the consequent mischiefs have been proportionably wide spread. This has been particularly true of the therapeutic use of alcoholic liquors, which has, also, in its issues, been attended with a vast amount of moral degradation and domestic discomfort.

§ 64. An eminent medical writer from whom we have before quoted,[b] candidly admits that the use of alcoholic fluids as a remedy, has not

[a] See *Medical Times*, Vol. xix. p. 106. (Lectures by George Ross, Esq., on Asiatic Cholera. No. V.)

[b] Dr Forbes's *Medical Review*. Art. 'Temperance and Teetotalism.' 1847.

[c] *On Food*, p. 190, (1842). [d] *Principles of Medicine*, p. 29.

yet been philosophically investigated, or extensively and properly tested. Physicians in general have only compared *one method of treatment* as a whole, with another method—a gross kind of test, liable to the confusion of various causes in the lump—instead of comparing the results of each method of treatment *with the known course of the disease,* and determining which method had the greatest influence in checking, or in abridging, its several stages. "At present," says that writer, "nothing in the annals of quackery can be more truly *empirical* than the mode in which fermented liquors are directed or permitted to be taken, by a large proportion of medical practitioners. If their physiological action be really as grossly misunderstood as we deem it to be—if their benefit can be looked for in little else than their stimulating effects, and the belief in their permanently supporting character be really ill-founded—if we are to distrust the grateful sensations which commonly follow immediately upon their use, and to look for evil in their more remote consequences (as the experience of the results of their habitual employment would lead us to do)—then it is obvious that a great change will be needed in our usual practice in this respect, in order to bring it into conformity with the mere corporeal requirements of our patients, to say nothing of its bearing on their moral welfare. The whole medical art is based upon *experience*; and the value of any remedy can only be fairly tested by the omission of it in some of the cases in which it has been reputed to be most successful. [e] Nothing can be stronger than the reputation which alcoholic stimulants have acquired, as affording efficient aid in the maintenance of the bodily strength under circumstances calculated to exhaust it; and yet the most unimpeachable testimony has shown the fallacy of this opinion, and has put 'universal experience' quite in the wrong. So it has sometimes happened that medical men have assured staunch teetotalers that they would die unless they admitted alcohol into their system as a medicine; but the patients, being obstinate, did neither, thus falsifying the prediction in a very unexpected measure, and proving that the experience of doctors is not more infallible than that of the public."

Dr Carpenter on Medical quackery.

§ 65. The general, excessive, and indiscriminate employment of alcohol as a therapeutic agent, has undoubtedly been attended with enormous mischiefs, and even in many cases where its use has been deemed *indispensable,* the trial of a contrary plan has resulted in a perceptible advantage. Concerning the medical effects of alcohol, indeed, a great difference of opinion, and consequently of practice, has prevailed. [f] Nor are there now, with reference to the cases to which it

[e] See Dr Beaumont's treatment of Typhus in our 1st vol. p. cxiii.

[f] This was strikingly evinced in a Metropolitan Medical Society, where, after an Essay on 'Stimulants' had been read by Dr Madden, a conversation occurred,

seems to bear a relation of the greatest suitability, any correct *data* or *statistics* which can conclusively determine the question before us. The experiments to which reference is generally made, are either vitiated by their unphilosophic character (the absence of certain *tests*), or only consist of individual or very limited instances. Against this may be fairly placed facts of a similar empirical character—viz. the expe-

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thus recorded in the *British Journal of Homœopathy*, vol. vi. 1848:—

When doctors differ, who shall decide?

"Dr Chepmell:—With respect to stimulants aiding digestion, he did not entirely agree with the author. He rather thought the quantity of food ingested prevented the deleterious effects which might otherwise result from the quantity of alcoholic fluid swallowed. For himself, he could never drink *alcoholic wines* without experiencing ill effects, and he knew others whose *circulation* was much deranged by such drinks.

"Dr Dudgeon:—The ingestion of an alcoholic stimulant would not only incapacitate *himself* for mental effort, but make him excessively sleepy and heavy; he knew *many others* that would be similarly affected.

"Dr Massol held that in adynamic (low) fevers, characterized by different symptoms, as great prostration, diminution of sensation, etc., these symptoms were not always to be attributed to a primary state of weakness; but, in young people, were only indicative of violent inflammation of the digestive organs, *in which case stimulants would prove fatal. He had many opportunities of witnessing the fatal effects of stimulants in such cases, in the hospitals of Paris*, whereas the antiphlogistic treatment had generally proved successful.

"Mr Engall: The experiments of Dr Beaumont, on St Martin, had proved that the *quantity* of gastric juice was *actually diminished* by the use of alcohol: by the continued use patches of inflammation and aphthæ were developed in the mucous membrane *on the third day*. * In a person with a rapid circulation, alcohol did not always act on the gastric follicles. Alcohol could readily be dispensed with at once, by individuals accustomed to its use for years. Experience had certainly established the utility of stimulants in low fevers, but that arose from their being *Homœopathic* to the disease, and *not* from their stimulant property; in Cholera their employment had proved *extremely injurious*.

"Dr Partridge: He would ask, might not the beneficial effect of alcohol in exhaustion from febrile diseases, be owing to a speedy development of electricity by the decomposition of the alcohol? He questioned very much the utility of alcohol in the earlier stages of fever, however great might be the exhaustion.

"Dr Quin: Alcohol merely acted, in his opinion, as a stimulant, counteracting the depressing effects of such remedies as aconite and nux vomica. He had observed great benefit from it, as a *temporary* and *palliative* means, in cases of profuse hæmorrhage.

"Dr Madden: *With respect to no agent did a greater amount of idiosyncrasy prevail.* He himself was affected by alcohol in the same manner as Dr Dudgeon. In the *debility* resulting from *over-excitement* alcohol was injurious; in that caused by loss of humors, serviceable. It could not, strictly speaking, have a pathogenesis [in *their* tinctures], as it only acted when in sufficient quantity to produce *chemical action*."

* In reply, Dr Madden remarked that 'this was true of a *large quantity*.' But, if he refers to the case of St Martin, he will find no *authority* for using the term 'large.' It was a mere *ordinary*, or 'free use,' which *produced* no *sensible* or outward symptoms of indisposition.

rience in a wide range of disease, of a great number of Hydropathic, Allopathic, and Homœopathic practitioners, who act upon the teetotal system even in disease, and who yet exhibit, not only an equal, but a higher per centage of cures. The proofs which might be adduced of the very fallible nature of many accredited and time-sanctioned medical practices, ought to lead the philosophic enquirer to shun all dogmatism at least: we have clearly been wrong very often before, and we may be wrong again. Careful and extended *experiments*, philosophically conducted, combined with a thoro knowlege of the laws of health and disease, will alone entitle us to prescribe with 'authority.'

§ 66. What, for example, has been more common, both in civil and army Hospitals, than the treatment of *gangrene*, etc., by stimulants? Yet Dr Boggie, in an interesting monograph on the subject, has shown that such treatment is not only *not* indispensable, but positively pernicious, nay, frightfully fatal. [g] After the battle of Vittoria, the wounded were removed to Bilboa, and, in the hospital of the Cordileria, placed under the superintendence of two skilful surgeons and physicians—Dr Boggie himself, and the late Dr John Hennen.

Gangrene.

"When the gangrene appeared, the stimulating plan of treatment was, or had been, universally adopted. A free and indiscriminate use of tonic and stimulating remedies, such as bark, opium, *wine*, *spirits*, etc., was resorted to; yet *the disease made rapid progress*, until the hospital was overrun with it. Amputation was had recourse to where available; and great reliance was apparently placed on that; but unfortunately it was of little avail, for in most cases the disease attacked the stumps, so that the operation had to be repeated. In one month, in the Cordileria, 150 men had each a limb amputated.

"It was during this disastrous moment that Dr Hennen received an order to proceed to Vittoria on a particular duty, which detained him there two months. The charge of the hospital devolved then on Dr Boggie. There were still 800 wounded in the hospital; and from the 31st July to the 20th October, before the progress of the gangrene was checked, 250 deaths had occurred in that hospital, and 150 amputations had been performed.

"At this period Dr Boggie altered the treatment of the wounded. For the stimulating plan he substituted the antiphlogistic, and seemingly with great success. *The progress of the gangrene was speedily arrested*, nor did it again appear in the Cordileria."

§ 67. The treatment of *Cholera* furnishes another instance of the fallibility of medical judgment; of the uselessness of alcoholic fluids in a disease where they have been deemed so indispensable and appropriate.

Cholera.

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[g] *Observations on Hospital Gangrene*. London 1848.

No. of Cases.	TREATMENT.	Deaths.	Rate per cent.
3055	*Brandy*, ammonia, etc.	1792	58
81	Opium, alone	47	58
37	Ipecacuanha, *with stimulants*	25	67
21	Do. alone	12	57
607	Salt *with cold water*	112	20
376	Calomel alone	147	36½
58	Ice, *with stimulants*	29	50
142	Ice, alone	43	30
88	Salines, alone	67	76
107	Do. *with cold water*	15	14
1008	*Hydropathically*, at Gräfenberg, Breslau, Paris, Milton, Bombay, London, Leeds.	10	1

Mr Ross F.R.S.

"What benefit," asks Mr Ross, in reference to the stimulant treatment, "can attend the propulsion of a quantity of thick, grumous, black blood into the capillaries of the internal organs—even supposing no other mischief was produced? Then, again, the large quantities of diffusible stimuli, upon which so much reliance has been placed, actually consume the oxygen of which the blood has so much need! What advantage could there be in making a man drunk with brandy, who is already dying of the universal congestion of cholera? The undue attempt to arouse the nervous system must certainly exhaust its powers; and the principle upon which the largest amount of stimulation has been applied to the lowest amount of vital power, is *as false* as any paradox the human mind can conceive. Can we, then, be astonished at the high rate of mortality?

Evil of stimulants.

"It may be assumed, that stimulants might be useful in the earlier period of the attack, as tending to excite the nervous system, while there is power left to act upon; and to such an opinion I can only reply, that *the less stimulation the better for the patient;* that tho it may do good in the first stages, it will surely do harm in the last; that *it is a certain enemy, and a doubtful friend.* I should recommend, therefore, a total abstinence from stimulants in genuine cholera. When there is much sensitiveness at the pit of the stomach, evincing congestion of the mucous membrane of that organ and of the intestines, stimulants would be certainly injurious. As a rule of practice, they should be definitively renounced.

"With the view of relieving the cramps and spasms, *opiates* have been largely administered; but the internal congestion which they produce has undoubtedly proved injurious. The use of opiates has been carried too far; it has locked up the biliary secretion; it has choked the capillaries of the brain with black blood, and overpowered and deadened the nervous sensibility, which ought to be sustained by

every effort and appliance, as the only means left to us, in states of collapse, of rallying the declining powers of the patient. By comparing together the different data in the Tables, we shall clearly see, that when either opiates or stimulants were added to other remedies,—for example, ice or ipecacuanha, the rate of mortality was greatly increased.

"Dr Shute, of Gloucester, states, that under the water-system the state of collapse is prolonged to two, three, or four days; and others have remarked, that during the reaction, a paroxysm of raging delirium is apt to take place. It is not, therefore, an inoperative system. The cold-water would supply to the blood the water it had lost by the intestinal evacuations; and would also take up the urea, determine to the kidneys, and relieve the blood of the presence of this poisonous element. The evidence from recorded facts warrants us in concluding, that the system of salines and cold-water would prove the most useful. Cold water tends to maintain the vomiting, during which process there is still hope for the patient. Dr Shute, in recommending his plan, wisely says, in effect, that *the strength of the stimulant should be proportioned to the vital powers of the patient*, and that excessive stimulation must tend to exhaust the diminished nervous tone."—This is a rule applicable in other cases.

Cold water cure.

§ 68. Arguing upon the theory of Disease so ably explained by Dr Billing, in his 'Principles of Medicine'—that cholera is a kind of fever, arising from the suppressed action of the vital capillaries—we shall be at no loss to understand how 'the Water Cure,' in creating such powerful reactions by the application of *cold* and *friction*, and such a thoro drainage and elimination of the morbid elements of the blood by means of the fluid so profusely consumed—should prove so remarkably successful, not only in Cholera, but in all cases of Fever. It is now admitted by every intelligent practitioner, that in the early (inflammatory) stages of Fever, alcoholic fluids are not needless merely, but noxious; tho they are still pretty generally, and we have no doubt *too* liberally, administered in the later stages of *Typhoid fever*, either with the view of preventing collapse as a pure stimulant, or of supplying an available fuel for the production of animal heat.

Febrifugum magnum.

Employed for the *first* of these purposes, it is a very dangerous weapon—a two edged sword—and should be administered in the smallest possible quantities, if at all. It is extremely liable, by exhausting the nervous energy, to protract convalescence, and may certainly be dispensed with in the great majority of cases. We do not, of course, recommend the mere 'expectant practice'; and therefore, cases founded on a comparison of the results of *that*, with those of the stimulating system, are of little positive value. [h]

[h] *Temperance and Teetotalism.* Churchill, London. 1847. pp. 32, 33.

Alcohol as fuel in exhaustion.

§ 69. Cautiously administered in minimum doses, for the *other* purpose—as an element of respiration—in advanced stages of low fever, when the natural and fatty elements of the blood being burnt up, and the digestive and assimilating system incapable of supplying new matter, Alcoholic fluids seem appropriate enough. In these cases, fuel *must* be had to keep up the vital fire, and hence alcohol, which is rapidly absorbed by the capillaries of the stomach, can be made to serve this purpose, and thus supply one of the essential wants of the system. It is a choice of evils, and our duty directs us to embrace the least. A wise treatment of fever, however, would arrest the disease at an early stage, and *thus prevent the need of alcohol in the stage of exhaustion.* *

§ 70. "In cases of *Accident*, as of extensive burns, acting like a mechanical injury, or such injuries themselves, followed by great depression of the system, alcoholic or other stimulants may be useful, to prevent the patients from perishing in a state of complete collapse, without any rallying or reaction." [1]

The celebrated Dr Müller, however, is an example, amongst many

* The unparalleled success of Drs Jackson and Curry in treating fever in its first stage by cold affusion, sixty years ago, is a matter of medical history. Dr T. R. Armitage, in a very philosophical work entitled 'Hydropathy as applied to Acute Disease' (Churchill, London, 1852), and who had experience of the treatment in the Charity Hospital at Berlin and elsewhere, has some excellent advice on the subject of stimulants in fever. In typhus he employed cold *momentary* affusion, shallow bath, and *prolonged* warm bath (a little lower than blood heat). Of 16 patients in typhus, *ten* treated by cold water all recovered; of 6 by calomel, given early, 4 recovered. "Of *delirium tremens* we had several severe cases, all of which terminated favorably under water applications alone. The amount of [typhus] mortality in the *other* clinical department, where the fever was treated in the *usual* way, was 25 per cent. ... Eight [of our 10] were severe cases: one case was complicated with pneumonia, one with violent delirium. ... Another party, in order to avoid the exhaustion always present in typhus, particularly in the latter stages, gives *ammonia, wine, brandy*, etc. The stimulant keeps up the patient's strength for a time, but *there is always danger that*, by so much increasing the fever, *the patient may die of over-stimulation*, congestion of the brain, or internal inflammation" (p. 39).

"Of *Cholera*, I had two cases, both considered hopeless when I undertook them. One patient recovered. The one who died was a man of seventy, who in addition suffered from chronic bronchitis, which was, in part at least, the cause of death. ... Of *acute bronchitis*, I treated two cases, both of which ended favorably. One exhibited the wonderful antiphlogistic power of the wet sheet-packing. One of *heart-disease*, where violent delirium occurred in consequence of congestion of brain, is given to show the value of the cold superfusion in the warm bath, where, in all probability, no other means would have availed.

"The hydropathic system is the only one that combines in itself the advantages of the *antiphlogistic* treatment *and the stimulating*, but without the disadvantages of either" (p. 51).

[1] Dr William's *Principles of Medicine*, § 75.

which might be cited, of those who regard these stimulants in a very questionable light. "*In cases of the rapid sinking of the vital force, all our stimulant remedies are of no avail,* and the greater part of such remedies excite the system, but do not add to its strength. There are however some agents, in addition to the general vital stimuli, which, under certain conditions, excite a local vivifying and strengthening influence, either by restoring the composition of the organ, or by so changing its composition, that the renovation by the general vital stimuli is facilitated. All this, however, depends on the state of the diseased organ; and the cases in which the so-called stimulant and tonic remedies have really their supposed effects *are very rare.* On the other hand, many patients have been stimulated to death by a host of remedies which, under the circumstances of the case, do indeed stimulate, but produce only a tumult in the system which they fail to strengthen." [j] Dr Muller.

§ 71. Vinous fluids have been extensively employed as tonics and digesters in the various forms of disease included under the term *Dyspepsia*—and the want of science in their prescription has often been eked out by the authority of Scripture! Physicians have quoted the advice of Paul to Timothy, in justification of their own empirical employment of wine, without either knowing the *nature* of the patient's ailment, or the *kind* and *quantity* of the wine prescribed for it. [k] The only certain fact in the affair is, that the learned and Christian bishop who was the subject of the prescription, possessed the habits, and therefore the *susceptibilities,* of a teetotoal patient. When stimulants are really needed, such only can fully realize their benefit.

Dr Hope, in his 'Morbid Anatomy,' furnishes the following instructive examples of the evils of the popular stimulant treatment in stomach diseases:—

"Ulcerated Stomach. A gentleman, aet. about 21, stout and athletic, after over-exertion, *followed by free tho not intemperate living,* etc. After nearly a year he consulted me. Had lost 2 or 3 stone weight, and was extremely emaciated. Can only digest the smallest quantity of light food; heartburn; eructation; diarrhœa, alternating with constipation; distressing flatulence and distension.

"He was sent, by my advice, to the country, lived principally on farinaceous gruels, with a third of weak animal broth, took a light infusion of cascarilla twice a day, and applied a succession of mild- Dr Hope's cases.

[j] *Physiology,* pp. 60, 61, 63.

[k] It was, probably, the *vini sapa,* for, as Dr A. T. Thomson says in his *Materia Medica,* under 'Vitis,' "*the juice of ripe grapes inspissated,* is used in great quantity *in these diseases.*" Vide Russell's *Natural History of Aleppo.* p. 83.

blisters to the abdomen [*outside*]. In three or four months was convalescent. Was now induced, at sea, to take *brandy* as a preventive against Cholera—the diarrhœa was again brought on. Fell into other hands in the country, and was put upon a stimulant treatment, viz. animal food, wine, etc., under which he progressively deteriorated.

Dr Hope.

"He was reduced almost to a skeleton. I put him upon an extremely scanty milk, farinaceous, and broth diet, etc. On this plan he got rid of dropsy and diarrhœa, and improved in strength and substance.

"Subsequently, as he became impatient, it was determined in consultation, to try a more nutritious diet: viz. rum and milk, turtle, porter, jellies, etc. The diarrhœa recurred, and he finally retrograded.

"He was now sent to the country, and again put upon the milk diet. He steadily improved, and in a few months was enabled to sail for a foreign clime, after an illness of more than two years.

"Remarks. The good effects of a mild diet, thrice attended with a stimulant one, evince very strikingly the advantages of the former.

"Case of a widow. *Gastrodynia*, for which she took brandy and water. Inflammation was excited, vomiting, etc. During next year the paroxysms returned. Sensations of burning heat in the stomach. Cold water is her sovereign and sole remedy. *Wine and fermented liquors excite an intense burning pain in the stomach*, and immediately cause a relapse.

"This case affords much practical instruction. Had a strictly abstinent, counter-irritant plan been perseveringly employed, the patient would have derived greater benefit. In 9 months she was convalescent."

The late Dr James Johnson was also a strong opponent of the stimulant treatment in fashionable Dyspepsia. We have before seen him trace the evil of '*morbid sensibility*' to its source (§ 60); he shall again declare the drink best adapted to the disease:—

Dr James Johnson.

"In respect to drink, my firm conviction is, that *water is the best*; and that, till the habit of water drinking can be acquired, a dilute mixture of brandy and water is the next best beverage. *The sooner, however, that every species of stimulating drink can be laid aside, the better.* A cup of coffee after dinner is far preferable to wine. Malt liquors are very questionable, except in particular constitutions."[1]

The *British and Foreign Medical Review* has, still more recently, given its sanction to these views of treatment in chronic indigestion.

"The class of cases in which the habitual use of alcoholic stimulants is most commonly, and in our opinion most perniciously, recommended by practitioners of medicine, is that in which there is chronic disorder

Dr Carpenter.

[1] *On Indigestion*, p. 74.

of the digestive apparatus, with its multiform consequences. This disorder, in at least nine cases out of ten, has its origin in inattention to the laws of health, as regards diet, regimen, exercise, physical or mental exertion, and the like: and we cannot reasonably look for its cure by the use of stimulants. For the action of these, in such states of the system, is precisely like the application of the whip or spur to the horse already tired, which produces a temporary improvement in his pace, and prompts him to get thrö his work the quicker, but which leaves him, when he has done it, more fatigued than if he had taken his own time. We do not in the least deny that by men who are undergoing the excessive 'wear and tear' of incessant and anxious mental exertion, the work is accomplished with more feeling of ease at the time, and even with less immediately consequent fatigue, when alcoholic stimulants are moderately employed. And upon such a system we find men going on month after month, and even year after year, without any *obvious* injury. But the time almost inevitably comes, when the overtasked system gives way; and *long and difficult is then the process of restoration from its disordered state*, as every medical man well knows. Now we are confident that when the exertion of the nervous system is greater than can be borne without the assistance of alcohol, provided due attention be given to diet, fresh-air, out-door exercise, and sleep, the excess produces a positive injury, *which is sure to manifest itself at some time or other;* the use of alcohol only warding it off for a time, and preventing it from being at once felt. It is in renovating the system after such a course of long-continued ill-treatment, that we regard the hydropathic treatment as peculiarly effectual. We may keep our patient in town at his usual occupations, practice all kinds of experiments upon his stomach, recommend fat bacon or lean chops, prescribe blue-pill and senna-draught, or quinine and calumba, and ring the changes upon all the wines and malt liquors which the cellar can furnish, in search of one that shall be free from directly injurious consequences; but we shall not effect a twentieth part of the benefit which our patient will derive from giving himself a complete holiday, betaking himself to some agreeable spot where there is sufficient to interest him, but nothing to excite; promoting a copious action of his skin by exercise, sweating, and free ablution; washing out his inside with occasional (but not excessive) draughts of cold water, and trusting to the natural call of appetite alone, in preference to artificial provocatives. Let those who decry hydropathy witness the results of this method, as we have done, in but a few cases, and they *must* come to the conclusion, unless blinded by prejudice or interest, *that water is better than wine*, and that a hearty miscellaneous meal, swallowed with a vigorous natural appetite, is more invigorating than the carefully selected and delicately prepared

Renewed bills and final bankruptcy.

viands to which the dyspeptic subject is compelled to restrict himself, and which he can only digest [or rather, get rid of] with the aid of a glass of sherry, or a tumbler of bitter ale." [m]

Physic evil per se.

We will only add to this citation, that wine relieves the system by exciting the stomach to pass the food onwards, not by aiding its digestion; and that less wasting and injurious stimulants can be substituted, when stimulants are really needed. [n]

§ 72. We can conceive that in certain states of *nervous depression*, unattended with real weakness or exhaustion, the use of alcoholic stimulants might result in benefit, if not continued beyond a few days. Their effect is simply to liberate an energy (or vital steam), which, for want of manifestation, produces morbid internal action. Nevertheless we cannot doubt, that the natural, innocent, and most permanent remedy, would be a course of *hygiene;* the excitement of travelling, or the 'Water Cure.'

Finally, let it never be practically forgotten, that all medicine is evil *per se*, from the strong alkaloid to the merest 'simple,' and that *only* the plea of *necessity* can justify its occasional use, but nothing its habitual employment.

> Within the infant rind of this small flower,
> *Poison hath residence*, and Medicine power.
> [Yet] naught so good, but strain'd from that fair use,
> Revolts from true birth, *stumbling in abuse*.

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[m] No. 48, before cited.

Condiments bad.

[n] "Condiments," says Dr W. Beaumont, "particularly those of the spicy kind, are non-essential to the process of digestion, in a healthy state of the system. They afford no nutrition. Tho *they may assist the action of a debilitated stomach for a time*, their continual use never fails to produce an indirect debility of that organ. They affect it as alcohol or other stimulants do—the *present* relief afforded is at the expense of *future* suffering. Salt and Vinegar are exceptions, and are not obnoxious to this charge, when used in moderation. They both assist in digestion—vinegar, by rendering muscular fibre more tender—and both together by producing a fluid having some analogy to the gastric juice."—*Experiments and Observations on the Gastric Juice and the Physiology of Digestion;* p. 49. Plattsburgh, 1833.

Chapter IV.

Proposition.—*What relation do Alcoholic liquors sustain to the healthy human system?*

§ 73. Alcohol, the element of vinous fluids that renders them intoxicating, by the universal judgment of Toxicologists, and of the human race, as expressed in the common name applied to all drinks containing it—bears that relation to all vital organism, whether of plants or animals, which is expressed by the English *Poison* or venom; the Latin *Toxicum*, or venenum; and the Greek *Toxikos*. [a]

Is alcohol food or poison?

§ 74. What, then, is the essential quality in any substance on account of which it is called poisonous?

Its property of disturbing the natural functions, or deranging the normal organism, of the Living Body, by virtue of its specific affinities or repulsions.

§ 75. Negatively, a poison may be described as that which cannot fulfil the purposes, or supply the place, of Food and Drink—or which can do this in no degree innocently, or permanently.

What is poison?

That the negative part of the definition really belongs to alcohol we have shown in the 1st Chapter; and that it disturbs one of the functions of the body (that of Respiration) has been made sufficiently apparent in the second. It remains to show the specific action of the alcohol on the *Organism* itself, as well as upon the *functions* of the various parts.

§ 76. Professor Christison, in his Treatise on Poisons, ranks them under three divisions, which are adopted by Hooper in his 'Lexicon Medicum.' The following is a specimen of his classification:—

Poisons classified.

I. *Irritant Poisons.*

Their characteristic operation is to excite inflammation. To this class belong

The three mineral acids.
Oxalic Acid.
Iodine, Jalap, Cantharides, etc.

II. *Narcotic Poisons.*

These operate in a peculiar manner upon the nerves and brain, and include

Opium, Hydrocyanic acid,
Nitric Oxide Gas,
Chloroform, etc.

[a] See extract in our Reply to the *Westminster Review*, in the Appendix, p. lxxxvi. of this volume.

III. *Narcotico-acrid Poisons.*

These possess a double action, being both local irritants, like those of the first class, and producing (remotely), an effect on the nervous system, like those of the second. To this class belong

Nightshade, Hemlock, Foxglove,
Nux Vomica, Camphor, etc.
Alcohol, Æther, Tobacco, etc.

Christison.

§ 77. Professor Christison, in his Dispensatory, further describes the relation of alcohol to the living system, as that of

1st. A local irritant;
2nd. An astringent;
3rd. A sedative.

As a chemical agent it absorbs the water from the living tissues, which resist by virtue of their vitality, and this re-action constitutes *irritation*, which, commencing with warmth and redness, may run thrö all the stages of inflammation.

The temporary effect of such an action must clearly be to constringe the fibres or coats on which the spirit operates—'to cause contraction and condensation of the tissues'—and thus to act as an *astringent*. This action, however, if long continued, will ultimately harden and tan the organ, and destroy its normal sensibility. It is not a 'tonic' effect: it does not 'give' strength, but simply 'calls forth' power.

The *sedative* effect of alcohol is traceable, first, to the carbonization of the blood, which leaves the body subject to the narcotic influences of an imperfectly aërated vital current; and, second, to its exhausting action as a nervous stimulant.

§ 78. The more general and remote effects of Alcoholic Liquors, as manifested by external signs, may be divided into *three degrees*, according to the order of their intensity, commencing with the normal state. The gradual departure from Perfect Sobriety to Initial Intoxication, onwards to Common Inebriety, and downwards to Complete Drunkenness, is well described by Dr Pereira.

Professor Pereira.

"*First or Mildest degree* (Excitement). This is characterized by excitement of the vascular and nervous systems: the pulse is increased in frequency, the face flushed, the eyes animated and perhaps red, the intellectual functions are powerfully excited; the individual is more disposed to joy and pleasure; cares disappear; the ideas flow more easily and are more brilliant. At this period the most violent protestations of love and friendship are frequently made, there is a strong disposition to talk, and various indiscretions are oftentimes committed. *This* degree of effect I presume to be the condition to which all persons aspire in drinking: the unfortunate drinks to drown his cares; the coward to give him courage; the *bon-vivant* for the sake of enjoy-

ing the society of his friends; the drunkard from mere sensuality. None, perhaps, would wish to go beyond this, yet many, when they have got thus far, exceed their intended limit.

"*Second degree* (Drunkenness). The essential characters of this stage are a disordered condition of the intellectual functions and of volition, manifested by delirium, varying in its characters in different individuals, and by an incapability of governing the action of the voluntary muscles.

"*Third degree* (Coma, or True Apoplexy)." [b]

This state is commonly expressed by the phrase 'dead drunk,' and arises from a three-fold action of alcohol. 1st. From its operation upon the nervous centres as a narcotic, excessive excitement producing paralysis. 2nd. From its retaining impure venous blood in the system, which cannot, in its circulation, afford the normal stimulus to the organism of the brain. 3rd. From its consumption of the absorbed oxygen, the presence of which is necessary to the performance of function, which therefore ceases when one of the conditions of the effect is withdrawn.

§ 79. We conclude from these varied considerations, that alcoholic liquors, *by virtue of the alcohol they contain, and so far as it operates at all*, bear the relation of *poisonous fluids* to the healthy human system.

[b] *Materia Medica*. Art. Alcohol.

Chapter V.

OBJECTION.—*How does the ascription of the quality of 'poisonous' to Alcoholic Liquors consist with the fact that many drinkers of them have attained a good old age in the enjoyment of health?*

The old Age fallacy.

§ 80. Three eminent physicians have objected to our drawing any *practical* conclusions from the preceding train of reasoning; alledging that the limited *use* of alcoholic liquors is a matter of '*indifference*,' except in 'certain occupations' and to 'peculiar constitutions.' They are willing to grant on the one hand, that alcoholic liquors are *not necessary*, but they hold, on the other, that the effect of a small quantity of them is absolutely *nil*, at least for evil. These learned physicians, however, shall state their own thesis:—

"It is," says Dr Christison, "impossible to admit that the moderate use of wine, even tho habitual, produces, except in certain habits, the evil effects on the bodily and mental powers, or eventually on the constitution, which some ascetics, reasoning from their own experience, would have the world imagine. In most cases, the moderate use, or entire avoidance, of wine, seems *a matter of indifference*, so far as the constitution is concerned." [a]

"Dr Paris asserts that 'there exists no evidence to prove that a temperate use of good wine, when taken at seasonable hours, has ever proved injurious to healthy adults.' I am by no means disposed to question the accuracy of this statement, since he has so qualified it, that, in almost any case where ill effects resulted from the use of wine, they may be ascribed to the non-fulfilment of some of the conditions here mentioned: viz. the *temperate* use of the wine—the *goodness* of the liquor—the *seasonable* time of taking it—or the health of the individual. All I would assert is, that, for healthy individuals, wine is an unnecessary article of diet.

"The actual amount of injury which may be inflicted on the system by the use of wine, depends on the quality and quantity of the liquid used, and on the greater or less predisposition to disease which may exist in the system. *Disorders of the digestive organs and of the brain, gout, gravel, and dropsy*, are the maladies most likely to be induced, or aggravated, by the *use* of wine. Intoxication, in its varied forms, is the effect of the *excessive use* of it." [b]

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[a] Christison's *Dispensatory*.

[b] Pereira's *Treatise on Food*, etc. p. 426.

"Many persons, who have, during a considerable period of their lives, accustomed themselves to the daily but moderate use of wine, have attained a *good old age*; and it cannot, *therefore*, be denied, that the most perfect health is quite compatible with the moderate enjoyment of wine." [c]

§ 81. If in reply to this kind of reasoning, we refer to the accumulated experience of *individuals* of varied trades and temperaments, who find themselves *better* as abstainers, we are at once told that such are 'exceptional cases': tho, singular to say, the thought of viewing their own instances in this light seems never to have occurred to these writers. Yet how stand the facts of the case?

I.

Counteracting agencies.

The alleged examples of men enjoying '*the most perfect health*,' who nevertheless drink intoxicating wine, are purely imaginary. Health is not a fixed standard; and no one can say of it, either '*this* is the most defective health,' or '*that* is the most perfect.' It is a state which includes a wide range of degrees, and applies to the functions of *very different systems*, as muscular and vascular on the one hand, or sensitive and cephalic on the other. We grant, however, that there *are many* instances amongst limited wine drinkers, of the enjoyment of *a moderate degree of health* to a fair age, as there are some such instances amongst drunkards; but what then? No conclusion can be drawn in the one case, that will not hold good in the other. The 'argument' proves too much, while 'the fact' is easily explained by the principles of physiology. As in *some* instances any use of wine is admitted to be bad, owing to constitutional liabilities of disturbance or deficient vitality—so, in opposite instances, an *excessive use* is not apparently harmful, owing to a peculiar strength of constitution, and the abundance of that vital force which powerfully *resists* the influences of all destructive agencies upon the organism. That *no* harm is *really* done, however, because we are not able to *see* or *trace* it, is a proposition which we cannot accept. We have ourself often lived for months together in a tainted atmosphere, surrounded *by the seeds* of pestilence —of Cholera, Irish fever, etc.,—without any actual symptoms of these diseases *breaking out* in us, while hundreds of apparently stronger persons have fallen victims around. Should we from this be entitled to infer, either that the minute and morbific elements of the pestilence were *not* 'poisonous,' or that they had done us *no* actual harm whatever? Analogy would lead us to a very different conclusion indeed; and certainly no one would be warranted in affirming, that they had *in no degree* lowered the tone of life, and, 'THEREFORE,' as Dr Pereira

[c] *Ibid.* p, 424.

has it, "that *the most perfect health* is quite compatible with the moderate inhalation of bad air and morbific elements"!

As a distinguished Medical Reviewer remarks, "the enemy is only baffled, not dispersed; and altho he lies concealed for a time, he only waits until his onslaught can be more effectually made." That is, as we take it, the morbific agency is *imperceptibly lowering the tone of life.* "Bad air, insufficient and unwholesome food, impure water, foulness of skin and garments, and similar departures from the strict laws of health, *must* exert their influence on the system." [d]

Alcohol robs the blood of oxygen.

§ 82. It has been proved already, that the use of alcohol acts upon the blood *precisely in the same way as want of ventilation*—* i.e. IT ROBS THE BLOOD OF OXYGEN, † and keeps within the circulation a quantity of waste, carbonaceous, and other matter, that would otherwise be expelled from the temple which it now pollutes (§ 94). On this subject Dr Williams has the following observations —

"The habitual want of pure air especially exercises an unfavorable influence on the state of the blood, and the functions of circulation and nutrition, causing pallidity of the surface, poorness of blood, and imperfect development of the fibrous [albuminous] principle, the deposition of which in the internal organs or glands is favored by the weakness of the circulation. *Exercise may in some degree counteract* this effect of impure air: thus Dr Guy found that in the close workshops of a printing establishment, the compositors whose employment requires no exertion, fell victims to phthisis, in the proportion of 44 to 31½ per cent of the pressmen, who, while breathing the same air, use active bodily efforts. This difference is quite intelligible when it is remembered that active exercise, by increasing and extending the force of the circulation, tends to remove congestion, to promote excretion, and by the activity of the respiratory function, enlivens and purifies the condition of the blood. Similar exercise in *pure air* would have *much more salutary* effects, the deaths from the same cause in out-door laborers not exceeding 25 per cent." [e]

Here Dr Williams distinctly admits that 'Exercise may, in some degree, *counteract* the effect of impure air'; would he, 'THEREFORE,' be warranted in saying that either exercise, or anything else, could *abolish all effects* of bad air, and render it *as* 'perfectly compatible

[d] Dr Forbes's *Medical Review.* No. 48. Art. before cited.

* See our *Illustrated History of Alcohol,* and Discussion with Mr Jeaffreson, March, 1843.

† It is necessary, to avoid the suspicion of plagiarism, that we should apprize the reader that this Essay was written, and posted to the offerers of the Prize obtained by Dr Carpenter, in *December,* 1848; and was, we suppose, in the hands of Dr Forbes, *a year before the prize essay was written*; and *five* years before the article on Pale Ale in the *Scottish Review.*

[e] *Principles of Medicine.* § 62.

with health' as pure air? Impossible: and therefore he admits the noxious influence; adding—'similar exercise in *pure air* would have *much more* salutary effects.' Many men and women, doubtless, in the olden time, when the custom of drawing close the bed-curtains much more prevailed than now, lived to 'a good old age' in moderate health; but what then? Did the impure air they breathed at night, for so many years, tho '*counteracted*' in 'some degree' by the 'exercise' of the day, absolutely inflict *no* injury? Is it "*impossible to admit* that this moderate inhalation of impure air produces, except in certain cases, the evil effects on the bodily and mental powers, or eventually on the constitution, which some *sanitary* ascetics would have the the world imagine"? For our part, we find it 'impossible' even to 'imagine' how it could *fail* to effect both present and eventual mischief. Some life or energy *must* have been lost, either physical, mental, or moral, if only in the process of 'counteraction': some moments of life, or some process of being, anticipated, suppressed, or abridged. Lord Bacon wisely observes, that Strength of Nature in youth passes over many transgressions, which are *owing a man till his age*; but can Nature be violated with *absolute* impunity?

The Atheism of the Objection.

§ 83. The true inference from this class of facts, whether they concern alcohol or bad air, appears to be this:—'That if any individuals enjoy a given degree of health, and reach a certain period of life, notwithstanding a small or an excessive exposure to morbid agencies, those individuals would, in the absence of all such exposure, *have enjoyed a still higher degree of health, and have reached a still greater age.*' This supposition is borne out by an appeal to the records of longevity, from which we find, that nine-tenths of those individuals whose ages have exceeded a century, were water-drinkers. "The instances of Longevity," says Dr Arbuthnot, "are *chiefly* amongst the abstemious."

The argument we are meeting is a *petitio principi*. It erects a possitive conclusion upon a negative premiss: it *assumes* (what is glaringly absurd) that a man who dies at 60, 70, or 80, and who lived in the enjoyment of a certain amount of health or life—which is not to be measured by the Almanac or the Register—*could not possibly*, with better air, circumstances, and habits, have lived still longer and still more perfectly!

§ 84. The record of a case now lies before us, of a Mrs Jones, wife of a Baptist Minister, who reached the 'good old age' of 'threescore years and ten.' Yet, for many years before her death, she regularly took 90 *grains of Calomel per day*, and on one occasion, by mistake, 124 grains, *without sustaining any sensible injury*, or feeling any particular inconvenience. She also drank a solution of Epsom salts as an ordinary beverage.

But was *no* harm done? or were the years of this woman *not* short-

The true inference.

ened? The Records of Medicine contain many such instances, but what is the legitimate conclusion? Is it not this?—that a wiser care of the vital power, and a more rational observance of the rules of health, would have prolonged the existence of a *constitution* capable of surviving such infractions of physiological laws, *at least a score of years?*

II.

While the facts opposed to us are susceptible of a very simple explanation, there are myriads of testimonies on the side of abstinence which *demonstrate* that the smallest use of intoxicating beverages is positively injurious, alike to young and old, weakly and strong, sedentary and laborious. Thousands of persons who once employed them in the most cautious and limited manner, and who thought that they enjoyed 'perfect health,' have declared that their relinquishment has been attended with *perceptible* and *positive benefit*, both to their feelings and their frames. Volumes of such testimonies have been published. *

Thousands of the most laborious citizens and agriculturalists have proved, in their living experience, that the severest labor can be performed, not only as well without as with intoxicating drink; but *much better*.

Thousands of delicate and weakly persons have declared, that they too are *stronger*, *healthier*, and *happier* as abstainers than as cautious drinkers of alcoholic beverages.

Experiments with masses.

The comparative statistics of Provident and Sick Societies also exhibit a striking proof of *the increased power to resist disease* conferred by the practice of water drinking. Take the following example, being the statistics gathered from *eight* Sick Clubs in Preston. †

1000 Non-abstainers have 23.3 sick, per annum.
1000 Teetotalers only 13.9 „ „

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7 weeks 4 days is the average period of sickness amongst Drinkers.
3 weeks 2 days, that amongst the Teetotalers.

£2 16 1 is the average sum paid to each Non-abstainer.
£1 9 2 that to the Teetotaler.

Thus Experience and Theory bring us to the same conclusion—that a man who uses stimulants daily, must enjoy *less perfect health and strength*, and will absolutely *wear out sooner*, than if he were to abstain. (See § 98, 104.)

Now these are *facts* that allow no other conclusion than the one which Professor Christison says it is 'impossible to admit'!—a con-

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* See the remarkable one of the Rev. Sidney Smith, in our Appendix, p. cxxviii.

† Vide also the *British and Foreign Medical Review*, Jan. 1841.

clusion in perfect harmony with the laws of theoretical reasoning and the analogy of Nature.

§ 85. The principles of Teetotalism we believe, are calculated to *protract* the period of human life. History is full of examples of the possibility of this. Plato recorded such two thousand years ago, and, within our own observation, instances have occurred of the weaker and most sickly members of a family surviving, to a good old age, *thrö care and diet*, the more healthy and robust. Herodicus taught this doctrine to his pupil, Hippocrates, and *we* are not ashamed to revive it. [g] When the laws of God—the laws of universal health—are perfectly observed, we shall, as Isaiah predicted, behold *a much higher degree of health* than that which now anywhere prevails—"there shall be no more thence an infant of days, nor an old man that has not filled his days; but their days shall be as the days of a tree," and that not unfruitful. That which now hinders shall be removed, and then will Wisdom be justified of her children—for "*length of days is in her right hand*," *yea*, "*she is a* TREE OF LIFE *to them that lay hold upon her*" (Prov. iii.), [h] a tree that burgeons and blossoms into divine aspirations and noble deeds.

[g] Vide Plato's *Republic*.

[h] See finally, an extract from Dr Paris's *Pharmacologia*, in Note to § 96 of this Essay, where the learned doctor confutes his own objection.

Chapter VI.

PROPOSITION.—*What are the effects of Alcoholic Liquors, when taken in limited quantities, upon the Healthy Human System?*

We will consider the proposition, in relation (1) to the performance of *function*, and (2) to the *organism* which performs it.

§ 86. The Creating Power has admirably ordained, that the healthy functions of each system and each organ, shall be most efficiently excited by the presence of that substance whereon it is formed to act. Thus air is the best exciter to the lungs, food to the salivary glands and stomach, blood to the heart, etc.

All action is attended with waste, as we have shown in the first chapter; still, in the case of all normal stimulus and nutritive action, the final result is a balance in favor of the organism, the amount of organic repair being greater than that of organic waste. Owing to increased structural integrity, the 'vital force' has more energetic play. The contrary is the case with all abnormal stimulants, which either unnaturally *depress*, or preternaturally *excite*, the living organs. Hence the structural integrity of the organ being impaired, its vital susceptibility is diminished, and its action deranged.

Adaptation of food to organism.

§ 87. A glance at the varied organic system of Man, will show that there is a mutual dependance of function, and a mutual adaptation to each other's needs. The *substance* to be acted upon *stimulates the organ* to the performance of its function; and in return, this function, directly or indirectly, determines an increased flow of healthy nourishment to the organ, thus renewing its strength for future action. In this way, the presence of blood in the cavities of the heart causes that organ to contract; this contraction propels the blood, not only thrö the system generally, but thrö the heart itself, whereby its own nourishment is accomplished, and the circle of vital action completed. So with the kidneys, the function of which is to free the blood from its excess of waste nitrogen-compounds, and thus fit this fluid to nourish their own substances on its return.

§ 88. While each functional-act thus puts in motion 'a wheel of action and re-action,' the act itself is the result of a preceding circle of events. For instance, before the heart can contract under the stimulus of the blood, that fluid must have stimulated the nerves of that organ; which stimulus must have been transmitted to the nervous centres, and reflected thence along the path of the efferent nerves to their terminus in the muscles of the heart, and thus exciting it to

contract. Tho this is *the natural order of the functions*, various organs in the series may be made to originate the final action. Thus the efferent medial nerves may be irritated, or the stimulus may be applied to the nervous centres. It is however absolutely certain, that *the maintenance of maximum health requires that every circle of action and re-action should be retained in its natural order and completeness;* and hence no link can be omitted in the series without entailing some mischief upon the organism.

The seed of all drunkenness.

§ 89. Now alcohol is not the normal stimulus to any part of the living system, and bears no relation of fitness either to its structures or secretions; hence every measure of function excited by its use, will, according to § 86, be followed by a proportionate degree of diminished vitality and depraved action, or of some combination of these effects. From this action, 'the beginning of the end,' all the drunkenness of the world may date its origin. It is the foundation, and first cause, of the DRUNKARD'S APPETITE—the physical seed which, having been permitted to grow and develop its tendencies in society, has led so many myriads down 'the dusky road to death.'

"The *very nature* of a stimulant, "says the Medical Reviewer before quoted, "is to produce a subsequent depression, and *to lose its force by frequent repetition.* The depression is proportional to the temporary excitement; and the loss is thus at least equivalent to the gain. And when a stimulus loses its effect as such, by frequent repetition, it is still felt *necessary* to bring the system up to par, [while] *an increased dose* [is] required to elevate it higher. Thus, as is well known, those who habitually employ fermented liquors for the sake of their *stimulating* effects, are led on from small beginnings to most fearful endings; and the habit, growing with what it feeds on, becomes a necessity." [a]

§ 90. Alcohol equally violates the principles of a mutual adaptation explained in § 87, since, while it cannot itself furnish food to any organ (§ 30), it indirectly interferes with the process of nutrition; first by diminishing nervous power; secondly, by impeding the metamorphosis of parts; thirdly, by causing effete matter to be retained in the blood; and, fourthly, by using up the oxygen designed for the removal of the waste tissue and the stimulus of organic action. Hence the whole system, and each particular part, must be less perfectly vitalized, and less perfectly nourished. In other words, the universal tissues must be structurally deteriorated (§ 82, 102).

Alcohol breaks the circle of order.

§ 91. Finally, Alcohol, as a topical stimulant, acts *directly* on the stomach itself, and therefore violates the laws and series of functional action explained in § 88. In producing action, the natural sequences

[a] *British and Foreign Medical Review.* No. 48. 1847.

of the system are not observed; the stimulation is a direct, not a reflex effect; thus the circle of normal action is broken, and the series of dependent functions destroyed.

Amongst the normal series of processes is one by which 'the natural elements of respiration' (oil, starch, sugar,) are converted into the natural fluid *Bile* (§ 93, *d*) *before* they assist in sustaining the heat of the body, by supporting respiration. *But alcohol cannot possibly be converted into bile.* Moreover, in superseding this process, to which all natural articles of fuel are subjected, it *actually prevents their conversion into it,* and hence, in retarding the combustion of natural agents, deranges the *usual* vital and chemical processes of the animal œconomy.

§ 92. Striking consequences of all this occur in connection with *muscular function,* and, in certain constitutions, with the *formation of fat.* As the questions necessarily involve many considerations in common, we will treat them together in the following sections.

Above five years ago, a medical periodical asserted, that "the researches of modern physiologists, and the general experience of mankind, *fully prove* that *alcohol* and alcoholic liquors are capable of *assimilation* (§ 30), or are alimentary bodies containing a considerable amount of *carbon,* and *applicable* either to the support of certain tissues (§ 27-50), or for the supply of this element to the lungs and skin, during the process of respiration and perspiration (§ 31-47). *How else can be explained the tendency to obesity* which is induced in the individuals who indulge in their use?" We trust that we shall be enabled to render a satisfactory explanation, and one quite consistent with the Philosophy of Teetotalism.

The fat fallacy.]

§ 93. (*a*) We take food; observe its history. It is masticated by mechanical and digested by chemical agencies, but it is assimilated only by vital processes. Its elements become organized, and enter the blood, and by vital affinities supply the waste of dead matter, become a portion of the living organism, fulfil their appointed function, and in putting forth their *vital power* in action, lose it; become subject to *chemical agencies*; are transformed; pass away in a state of eremacausis, and are finally expelled by the excretory system. Such is the life of each atom and each fibre! The health of the whole body consists in a rapid metamorphosis of its individual particles. Hence it is, that free exercise and fresh air, which contribute so powerfully to promote the transformation of the tissues, and the elimination of the dead or decomposed matter, are essential to perfect health.

How alcohol prevents vital changes.

"All experience proves," says Liebig, "that there is, in the organism, *only one source of mechanical power;* and this is the *conversion of living parts into lifeless,* amorphous compounds." [c]

[c] *Animal Chemistry,* p. 243. 1st Ed. See our preliminary essay on Vital force.

(*b*) Now this distinguished writer makes a three-fold division of 'medical and poisonous substances,' namely, 1, metallic poisons, which combine with certain parts of the body; 2, *anti-septic*, as camphor, essential oils, etc. *possessing "the property of impeding or retarding those kinds of transformation"* known as fermentation and putrefaction; 3, such as "augment the energy of the vital activity of one or more organs," and "excite morbid phænomena in the healthy body." [d]

He speaks of *tobacco* as "a means of retarding the change of matter in the tissues;" and of "*brandy*, which acting as an element of respiration, *puts a stop to the change of matter* by performing the function which properly belongs to the products of the metamorphosed tissues." [e] He, moreover, distinctly admits that such substances "also *arrest digestion* when taken into the stomach." Thus on the principles of this philosopher, it must be admitted, 1st, that alcohol operates *as a poison* in three distinct ways; 2nd, that it retards the change of matter, consequently arrests digestion, and *prevents the nourishment* of the body, which requires the removal of old, and the supply of new and living matter; and 3rd, that it *diminishes strength* by destroying those conditions on which mechanical force depends for its development. *

Liebig on alcohol-poison.

§ 94. Baron Liebig affirms that "the elements of *alcohol* combine with *oxygen* in the body." [g] "The oxygen," says he, "which has accomplished this change, *must have been taken from the arterial blood.* It is, consequently obvious, that by the use of alcohol, *a limit must rapidly be put to the change of matter* in certain parts of the body. The oxygen of the arterial blood, which, in the absence of alcohol, *would have combined with the matter of the tissues*, or with that formed by the metamorphosis of these tissues, now combines with the elements of alcohol. *The arterial blood becomes venous*, without the substance of the muscles having taken any share in the transformation."

History of alcohol thro the body.

Thus, according to the laws or basis on which nutrition and respiration are carried on, as viewed by this celebrated organic chemist, alcohol is to all intents and purposes A POISON. Its vapor permeates the membranes and tissues, and distributes itself everywhere throöut the body, but especially in the ventricles of the brain, which, in common with the whole nervous system, it first excites and then benumbs. It meets with the arterial blood, and to some extent *robs it of its oxygen*, being itself consumed by this gas. The *arterial* blood is thus deprived of its oxygen and becomes *venous*, and consequently there is,

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[d] *Ibid.* p. 171. Alcohol has a *strong affinity* for brain tissue, as arsenic for that of the stomach.

[e] *Ibid.* p. 119. [g] *Ibid*, p. 239.

* See Vol. i. Appendix, p. lxxx, for further exposition of the *Fat-fallacy*.

to that extent, a deficiency of oxygen for uniting with the metamorphosed tissues. * Thus *the natural change of matter is arrested*, and the whole system is thrown into an *unnatural state*. Heat is produced, no doubt, but it is *heat without force*. (A man under its influence is *inclined* to muscular exertion—*feels* as strong as Samson, and as valorous as Falstaff—while he is in reality helpless as a child.) Hence Alcohol is essentially unfavorable to the display of muscular power, *because it stops that change of matter which is the cause of force*.

The experiments of Dr Prout and others long ago demonstrated that the use of wine is *most adverse to the function of* RESPIRATION. Those experiments proved, that as long as the effects of alcohol were at all discernible upon the system, so long did the amount of carbonic acid expired continue *less than the healthy standard*. (Chapter ii.)

Professor Liebig thus explains 'the origin of fat in domesticated animals.'

"The stall-fed animal eats and reposes merely for digestion. It devours, in the shape of nitrogenized compounds, far more food than is required for reproduction, or the supply of waste alone: and at the same time it eats far more of substances devoid of nitrogen than is necessary merely to support respiration, and to keep up animal heat. *Want of exercise and diminished cooling, are equivalent to a deficient supply of oxygen;* for when these circumstances occur, the animal *absorbs much less oxygen than is required to convert into carbonic-acid, the carbon* of the substances destined for respiration. Only a small part of *the excess of carbon thus occasioned* is expelled from the body of

Causes of obesity.

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* QUESTION. Since all the substances forming Fuel food (as oil, starch, etc.) *consume* oxygen equally with alcohol, *why* may not they be said to *rob the blood* of oxygen as well as it?

Why alcohol is a robber.

ANSWER. Because in the case of the elements of *Food* they have a *natural right* to the oxygen: being prepared by nature, and consumed by man, solely with reference to their ultimate union with oxygen, their adapted element and the complement of their use—while alcohol is a purely *foreign* body, having no *right* and *title* to circulate in the system, and by *force* of affinity using up the oxygen destined *for a prior and distinct purpose*. The word 'Robber' can only be applied to the violation of the law of *ownership*, and certainly the natural oxygen was *not* made for the *artificial* alcohol, but for the *natural* fuel of the body. 'Right' here, signifies the Finished Natural Constitution, which alcohol disturbs: now the same cannot be said of oil, starch, and sugar. There is, therefore, the same difference between the two cases, as between money consumed in *exchange* for goods *for the use of the Rightful owner* of the money, and money taken and consumed for goods for the use of the *Highwayman* who had no right to your purse. 'Robbery,' no doubt, is equally a transfer with 'Commerce,' but all transference is not 'robbery.' The use of oxygen by alcohol is simply *combustion against* the NATURAL STATE of adapted law, while the use of oxygen by oil is in *harmony* with it, or rather, part and parcel of the Plan of Nature. Hence one is correctly termed 'robbery'—but the other is 'rightful possession.'

the horse and ox, in the form of hippuric acid; and all the remainder is employed in the production of a substance which, *in the normal state*, only occurs in small quantity as a constituent of the nerves and brain. This substance is *fat*.[k] The flesh of wild animals (undoubtedly the strongest and most vigorous) is devoid of fat; while that of STALL-FED animals is covered with that substance. When the fattened animal is allowed to move more freely in the air, or compelled to draw heavy burdens, the fat again disappears. It is evident, therefore, that the formation of fat in the animal body, is *the result of a want of due proportion between the food taken into the stomach and the oxygen absorbed* by the lungs and skin."[l]

The proximate causes of fatness, therefore, are twofold, or positive and negative—*first*, the *introduction* of a larger quantity of *carbonaceous food* than the oxygen absorbed can consume or burn up; in short, the furnishing of a supply of fuel beyond the natural demand—*second*, the *exclusion* by any means of that proportion of oxygen which is necessary to effect the combustion of the carbon or animal fuel introduced.

Alcohol aids the formation of fat by the exclusion of oxygen *from* the system, and the consequent retention of hydro-carbons within. In the production of this effect its *modus operandi* is manifold.

§ 96. In connection with this branch of our subject, we may discuss the influence of alcohol on the *blood itself*. It affects the nature of the vital stream in two ways—first, indirectly, second, topically.

As a stimulant that expends without restoring[n] vital power, Alcohol *indirectly* impedes the healthy process of blood-making; and, as a bad element of respiration, causing the retention of carbonaceous matter, it occasions the blood granules to be very imperfectly formed.[o] All

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[k] The *fat* is only the *contents* of the nervous tissue: which contains both *nitrogen* and *phosphorus*, which alcohol does not.

[l] *Animal Chemistry*, pp. 82, 83. 1st Ed.

[n] "In its popular and generally accepted meaning, it [a stimulant] denotes any influence which *accelerates* the vital movements of the sanguineous and nervous systems, and is thereby supposed to *exalt* the energies of the body; BUT ACTION IS NOT POWER. In the first place, let it be observed, that, with the exception of what have been justly termed 'vital stimuli,' such as food, air, water, sleep, and 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 limited agents, of which *brandy* may be taken as their type; it produces a temporary excitement of the arterial and nervous system, *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."—Dr Paris's *Pharmacologia*, 9th Ed. 1843. pp. 169-170. Dr Paris on stimulus.

[o] Professor Schultz *on the Rejuvenescence of Man*. Berlin, 1842.

imperfectly formed vesicles, according to the experiments of Professor Schultz, *absorb oxygen imperfectly*, and remain pale colored from the resulting deficiency of coloring matter. Hence, again, they cannot give out the carbon which they absorb in the system; and thus one evil produces another. These effects, tho not palpable in the case of the extremely guarded drinker, become, in those who take wine 'freely,' manifest in the shape of gout, hæmorrhage, intestinal inflammation, chlorosis, phthisis, etc. Life is vitiated at its fountain.

§ 97. The use of alcohol tends *directly* to the same result, by its action upon the blood vesicles themselves. The experiments and microscopical examinations of Professor Schultz lead us to the following results:—[p] "*Narcotics* destroy the contractility of the vesicles, so that they are paralyzed and remain expanded, the coloring matter accumulating in them. *Alcohol*, on the other hand, *stimulates them 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. The decolorization of the blood vesicles is not sudden but gradual, and *is more or less perfect according to the quantity of alcohol used*. If the excitement be kept up, the vesicles contract to the size of a point, and at last disappear altogether, leaving one uniform transparent red fluid. In other words, the coloring matter has changed its locality, and passed from the *vesicles* into the *plasma* of the vital stream. The relations of the two constituents of the blood are reversed. The pale or white vesicles have lost all vital resistance: hence less oxygen can be absorbed and less carbon carried out. *Therefore* is the blood of the drunkard so dark, so venous. The formation of *plasma*, which is the true nutritive material of the blood, is interrupted in exact proportion to the decrease of the respiratory process, while owing to the presence of the coloring matter of the vesicles, *the plasma* itself becomes an irritant to the circulating and secreting system. Hence, while *congestion* is occurring in the capillaries, *unnatural irritation* is present in the secreting organs—from which must necessarily result, an abberration of functions" (vide § 82). If even *one* of the natural elements of the blood itself be too exciting when displaced, tending to disease—how *totally unfit* must be the unnatural and repugnant element of alcohol, for circulation in the vital stream?

Effects on the blood.

§ 98. These considerations enable us to understand a remark of the late Dr Dieffenbach, of Berlin, [q] viz. that amongst the subjects of the dissecting knife, he could at once distinguish the Water Drinker from

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[p] *Ibid.* pp. 171, 172. See the more recent confirmatory experiments of Böcker, in our vol. i. Appendix, p. cciii.

[q] Made to our friend Dr James Wilson, of Malvern, and recorded in '*the Water cure*,' p. 63.

the Beer or Brandy Drinker, by the *firmer texture and redder tint* of the flesh, which presented a greater resistance to the knife. Hence the readiness with which wounds heal, and severed parts unite, in the case of the confirmed water drinker, whether in civilized or savage life, the process of nutrition being so much more perfect both as respects the matter and vitality of the blood.

Dr Hawkesworth, the narrator of Captain Cook's Voyages, has recorded a remarkable and confirmatory fact concerning the New Zealanders, who, using only water for their beverage, show to what a high, and in this age and country unprecedented, degree of health, the human frame *may* reach, by simplicity of life and *perfect purity* of air and water. After stating that the voyagers never saw a single person amongst them who seemed to possess any complaint, or ever to have had any eruption of the skin, he adds:—

"Among other proofs of vigorous health, as it existed among these interesting people, was *the facility with which the wounds healed that had left scars behind them, and that we saw in a recent state;* and a further proof that human nature is here untainted with disease, is *the great number of old men that we saw,* many of whom, by the loss of their hair and teeth, appeared very ancient, *yet none of them decrepid;* and altho not equal to the young in muscular strength, were not a whit behind them in cheerfulness and vivacity." (This testimony serves to illustrate the train of argument adopted in the preceding chapter, with reference to the highest and absolute standard of health; while it also indicates the vast deterioration of physical condition which results in civilized life by the absence of *vital stimuli* on the one hand, and the perpetual presence of *unnatural stimuli* on the other.)

Healing of wounds.

§ 99. Our last general considerations will refer to the action of *Alcoholic stimulants upon the ultimate filaments and vascular capillaries of the system,* and the waste of the vital power of the parts, on which their normal and energetic action is dependent.

In addition to the general observations on stimulants in § 60, 86, 90, and note to 96, we now present some highly discriminating distinctions of *the kinds* of stimulants strongly insisted upon by Professor Müller:—"The true and most important stimuli, are the vital stimuli themselves, the constant operation of which on the tissues is *the sole cause of the manifestations of life,* and of *the increase of the vital force.* The vital stimuli—namely, a certain degree of external heat, atmospheric air, water, and nutriment—not merely produce a change in the composition of the organic structures, and stimulate by disturbing the balance in the system; *but they renovate the tissues,* by entering, in a manner indispensable to life, into their composition.

Mueller on stimulants.

"The external vital stimuli are not the only agents which give rise

Reaction.

to the vital actions; everything which disturbs the elementary composition of the organs, and *the balance in the distribution of the imponderable matters in the organic tissues*, may also modify the action of the organism and of the separate organs. Such a modification, when considerable, is called *reaction*.

"The influence which produces this re-action in the organism is called *irritation*, and the cause exciting the irritation, a stimulus.

"There are other stimuli which excite reaction, but are not essentially renovating, and indeed for the most part have no restorative action on the organs; and which, except in producing symptoms or phænomena of re-action, have no vivifying influence; but, on the contrary, are injurious in proportion to the change effected by them in the organic composition.

"A stimulant, too often repeated, *deadens the excitability of the organ*, and renders it insensible to the same stimulus for a long time. Hence may be explained a part of the phænomena observed in the effects of habit; altho many things, to the action of which after long repetition we become thus insensible, produce at first, not merely the phænomena of excitement, *but a durable structural change*, whence alone their subsequent inefficiency can be explained. [r]

"*A great error has been committed in classifying the vivifying stimuli with other stimuli, which do not really contribute to the composition of organic bodies, and do not renovate their power.* A mechanical stimulus which modifies the condition of a membrane endowed with sensibility (for example, pressure), excites, it is true, a vital phænomenon—sensation; but does not *vivify*, does not invigorate the organic force; while, on the contrary, the essential vital stimuli, viz.—*nutriment, water, air, light, and heat, really contribute to the formation of organic matter.* The nutriment, in the first place, is not merely a stimulus of the organic body—it is itself susceptible of life; it is a stimulus which vivifies, and can itself receive vitality. [s]

"An endless injury has been done to medicine, and many lives have been lost, thrö the error of confounding all agents which excite reaction in the system, with those which are absolutely essential to life, and *which renovate while they stimulate the organs;* the false notion having been thereby induced, that because certain stimuli feed, as it were, the flame of life, stimulating agents generally are necessary." [t]

Action on the nervous system.

§ 100. The *central* portions of the sympathetic nerves (§ 5) exist in the region of the Chest and Abdomen, in the shape of small knots or 'ganglions,' and of a complicated net-work branching from them distributed to the chief organs of the parts. But other organic nerves

[r] *Physiology*, pp. 57, 60.

[s] *Ibid*, p. 32. [t] *Ibid*, p. 66.

—transmitters of power, like the wires of the electric telegraph—ramify to the remotest regions of the body, so that wherever there is a blood vessel, carrying at once the elements of vital stimulus and repair, *there* is an organic nerve enabling it to fulfil its function. Hence these nerves must exist in the head itself, regulating its circulation and nutrition, and influencing the *amount* or *character* of the mental phænomena of which the brain is the appointed organ. Moreover, this nervous system is itself furnished with blood vessels, and its energy regulated by its organic repair. These are not, however, nerves of special sensation, i.e. they do not, in their normal state, transmit the feeling of *pain*. Nevertheless, they are exquisitely alive to the action of *the vital stimuli* explained by Müller, and manifest their susceptibility of 'irritation' by giving an increased action to the circulating, and therefore to the secreting and excreting, vessels (§ 88). Nerves.

§ 101. Looking at this complicated and connected system of excitable nerves—nerves which interlace themselves with the minute capillary blood vessels at their terminations thröout the body—we can be at no loss to understand the phænomena of Organic Sympathy: how, for instance, a slight inflammation of the foot, or hand, should affect the entire systemic circulation and the brain itself, tho not perhaps in a degree sufficient to awaken a distinct perception of the fact in that organ.

§ 102. This brings us to the question of the stimulus itself. Experiments amply prove that the first result of the application of a stimulating agent to the capillaries is *contraction*, or a lessening of their calibre. This susceptibility, 'irritability,' or power of re-action, differs in degree and mode with the difference of the organic tissues themselves and the nature of the stimulus; but in the case of the blood vessels is very much dependent on their accompanying organic nerves. Vital *contraction* in the capillary blood vessels, forces out the blood which they contain, thus consuming and expending *organic force*—i.e. heat, electricity, and organic tissue. When this occurs as the result of alcoholic fluids, or other non-natural stimuli, the vessels not being renewed by these agents themselves, necessarily fall into a state of *relaxation*. Sooner or later, as Dr Paris says, the "temporary excitement of the arterial and nervous systems, is *invariably followed by a corresponding depression*." Action is not power, and therefore the collapse *must* come—the borrowed life be finally repaid, the books of nature exactly balanced. The amount of waste is in proportion to the intensity of the action, and this, in turn, is measured by the stimulus applied. Moreover, in the degree in which the contraction of the vessels at first *propels*, in the same degree their relaxation now re-admits, and *retards*, the vital stream. Stimulus but a mortgage.

Such is the process of stimulation, and such are its necessary

sequences, thröout every tissue, filament, and fabric of the human body.

§ 103. But let us here contrast the effects of a natural with a non-natural stimulant, on the organic functions of the stomach, etc.

NATURAL.

One person takes a 'moderate' meal—i.e. he so 'controls' his sensuous appetite as to select food which is adapted, both in *quality* and *quantity*, to his real wants. It causes the capillaries of the mucous coat of the stomach first to contract, and subsequently to relax, thus admitting an augmented quantum of blood, the source of the gastric and mucous secretion, which now distils upon the food, and proceeds to dissolve it.

Gastric stimulation sets up an organic sympathy in the brain, which is reflected to every part of the ganglionic system, and therefore reaches every blood vessel in the body, producing that gentle glow which all must have experienced soon after a healthy meal.

This increased vigor of circulation in the brain and body, gradually generates strength thröout the organs, and increases the vigor and cheerfulnes of the mind.

In short, the temperate man reaps the benevolent reward of obedience to the laws of function and structure—he sets up for the purposes of digestion and nutrition, *a healthy stimulation*—appropriate in degree and kind—and the Living Organs therefore 'discourse sweet music' together.

NON-NATURAL.

Another person takes food, rich or plain, but along with, it or after it, *a glass of grog*, or a few glasses of wine. This produces an instant re-action. The blood vessels contract with energy, and subsequently become relaxed. They are exhausted, and like the weakened eye, become congested or *blood-shot*.

But the chemistry of the Capillaries can only be healthfully accomplished by blood of the proper *quantity* and *quality* (§108); this is no longer the case; the gastric secretions are impaired in strength, and effect an imperfect digestion, which ends in imperfect assimilation and deficient nutrition.

Not only is the brain *loaded* with imperfectly formed and depraved blood, but its organic sympathies are violently and exhaustively excited.

The contractile power of the gastric capillaries is diminished, and they rest, *in chronic inflammation*, until they shall have accumulated energy enough to contract again, and expel the lagging blood. But in vain—for the process is repeated, day by day; nervous power is wasted, and often morbid sensibility set up in addition to vascular weakness. Thus it is, that thousands of careful, but constant drinkers, slowly but surely entail upon themselves the penalty of violated laws—Dyspepsia, Hypochondria, and other diseases.

§ 104. If even natural stimulation—which *is* Life—at last wears

down the mental machinery of the frame,—if every inspiration of common air has *some* share in the sum total of effect,—how can a morbid stimulation such as we have described, continued day by day and year by year, fail materially to lessen the powers, and abridge the period, of human life? No matter how strong the original stamina—even if it be an 'iron constitution'—unnatural stimuli *must* break it down before its time, *must* wear out the system prematurely. When we behold the delicate and divine Organism of Man thus played upon, and a stamina completely exhausted in 40, 50, or 60 years, which might have bloomed and blossomed to a 'green old age' of four score years and ten—we are disposed to put the serious question—In what does such a course differ from deliberate suicide? A query.

The *topical* injuries which the continued use of alcohol inflicts, even in small and diluted quantities, have been made matter of demonstration; experiment fully confirms the representations of preceding sections (§ 103, 95 *d*).

§ 105. The constant use of alcoholic liquor, undoubtedly impairs the integrity of the nerves of taste, not merely by its exhaustive action on the cephalic centre, but as a local stimulant. That the glands of the tongue become *more sensitive instruments* by abstinence from alcohol, has been established by the experience of thousands, to whom teetotalism has restored the normal integrity of *taste*, and enabled them to enjoy plain viands with a higher relish than was formerly experienced in the use of rich and spiced dishes. Alcohol does for the palate, what snuff effects for the nerves of smell: it exhausts 'irritability.' All the senses grow dull and unnatural by the use of morbid stimuli. Alcohol impairs taste likewise, by its action on the saliva, which assists taste. Topical effects of alcohol.

Every one knows that when the mouth is dry, or secretes a too alkaline saliva, this sense is not so discriminating as in the healthy state.

§ 106. The experiments of Dr Samuel Wright 'on the Physiology and Pathology of the Saliva,' have established the fact of the importance of that secretion in digestion. He proved that any sudden disturbance of that function, invariably increased the *alkalinity* of the secretion. It was a sort of natural index of evil. Alcohol, pepper, mustard, capsicum, etc., *all* augmented the alkaline nature of the saliva; and the increase of the alkali was nearly in exact proportion to the stimuli—the measure of the mischief, and perhaps partly its remedy. Half an ounce of alcohol, diluted with three ounces of water, in one case *doubled* the alkalinity in three minutes, and in six minutes *quadrupled* it. Dr A. Combe views the result as a merciful provision for "*mitigating the acrimony of stimulants*—a property which alkalies possess in an eminent degree." [u] Action on the saliva.

[u] *Physiology of Digestion*, p. 49 *f*.

Condiments injurious.

§ 107. It has been already shown (§ 72), that even *condiments*, if employed daily, lower the tonicity of the stomach and interfere with the digestion of the food. The same experiments—those of Dr Beaumont on a healthy young man called Alexis St Martin, who had an opening into his stomach, left by a gun-shot wound—establish also the fact, that alcoholic drinks both injure the organ, and retard the process, of digestion. The fact, therefore, urged by Liebig (§ 49), *that the same men as teetotalers have better appetites than as beer drinkers*, is equally in keeping with the laws of Chemistry and Physiology.

The following extracts place this subject in the clearest light:—

Case of St Martin.

"Drinks are nearly as essential to the animal system as the more substantial food. Tho *not subject to digestion*, they enter into the circulation, and become important agents in the ultimate changes that are undergoing in the tissues of the organism. *Simple water*, is, perhaps, the only fluid that is called for by the wants of the œconomy. The *artificial drinks* are probably all more or less injurious; some more so than others; but none can claim exception from the general charge. Even *coffee* and *tea*, the common beverages of all classes of people, have a *tendency* to debilitate the digestive organs. Let any one who is in the habit of drinking either of these articles in a weak decoction, take two or three cups made very *strong*, and he will soon be aware of their injurious tendency. And this is only an *addition* to the *strength* of the narcotic he is in the constant habit of using. [v]

"The *whole class* of ALCOHOLIC LIQUORS, whether simply fermented, or distilled, may be considered as *narcotics*, producing very little difference in their ultimate effects on the system. [w]

"*Water* and *alcohol are not affected by the gastric juice.* Fluids, of all kinds, are subject to the same exemption, unless they hold in solution or suspension some animal or vegetable aliment. [x] Fluids pass from the stomach very soon after they are received, either by absorption, or thrö the pylorus. [y]

"Wine, spirits, water, and other fluids, which *conduce nothing towards alimentation*, are neither coagulated, nor otherwise affected, by the gastric juice. These fluids are not digested; and probably enter the circulatory system without change. [z]

"July 28 (1833), 9 o'clock, A.M.—Stomach empty—not healthy—some erythema [inflammatory] and aphthous [ulcerous] patches on the mucous surface. St Martin has been drinking ardent spirits, pretty

[v] *Experiments on the Gastric Juice*, etc. pp. 49-50. Plattsburgh, U.S. 1833.

[w] *Ibid*, p. 50.

[x] Thus, tho *milk* is popularly classed with fluids, it is really *a mixture* of the simple fluid *water*, and solid matter—butter, cheese and sugar.

[y] *Ibid*, p. 97. [z] *Ibid*, p. 146.

freely, for eight or ten days past—*complains of no pain*, nor shows symptoms of any general indisposition—says he *feels well*, and has a good appetite.

Experiments on a living man.

"Aug. 1, 8 o'clock, A.M.—Examined stomach before eating anything. [Mark the *consequences* of the previous day's drinking.] Inner membrane morbid—considerable erythema and some aphthous patches on the exposed surface—secretions vitiated—extracted about half an ounce of gastric juice—not clear and pure as in health—quite viscid.

"Aug. 2, 8 o'clock, A.M.—Circumstances and appearances very similar to those of yesterday morning. Extracted one ounce of gastric fluids—consisting of unnatural proportions of vitiated mucus, saliva, and some bile, *tinged slightly with blood*, appearing to exude from the surface of the erythema and aphthous patches, which were tenderer and more irritable than usual. St Martin complains of *no sense of pain*, symptoms of indisposition, nor even of impaired appetite. Temperature of stomach 101°

"Aug. 3, 7 o'clock, A.M.—Inner membrane of stomach unusually morbid—the erythematous appearance more extensive, and spots more livid than usual; from the surface of some of which *exuded small drops of grumous blood*—the aphthous patches larger and more numerous—the mucous covering thicker than common, and the gastric secretions much more vitiated. The gastric fluids extracted this morning were mixed with a large proportion of *thick ropy mucus*, [a] and considerable mucopurulent matter, slightly tinged with blood, resembling the discharge from the bowels in some cases of chronic dysentery. *Notwithstanding this diseased appearance of the stomach, no very essential abberration of its function was manifested.* St Martin complains of no symptoms indicating any general derangement of the system, except an uneasy sensation at the pit of the stomach, and some vertigo, with dimness and yellowness of vision, on stooping down and rising again—has a thin, yellowish brown coat on his tongue, and his countenance is rather sallow—*pulse, uniform* and *regular*; appetite good; rests quietly, and sleeps as well as usual. [b]

Delusion of not feeling disease.

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[a] This effect was noticed by Dr R. James, in 1747.

[b] This establishes the delusiveness attached to mere *feeling*, as a test of a healthy stomach. St Martin, it seems, had not drunk to *drunkenness*, but only *freely*. His pulse was not affected. The next observations show the rapidity of his recovery on abstaining. Reader! let us dispel the great and often fatal delusion of supposing that you are doing no injury because you do not *feel* it.

The *Medical Times* of Jan. 7, 1854, records at one meeting of the Pathological Society of London, 5 cases of disease induced by drinking—viz. 3 cases of cancer of the pylorus, with ulcer and perforation; one of systic formation in the stomach; one of enlarged heart. Of the last, it is said—"The patient had not shown *any signs* of disease *until a month before* his death." Of the preceding one, it is said—"The appetite had been bad, but *there were no special*

"August 4, 8 o'clock, A.M.—Stomach empty; less of these aphthous patches than yesterday.

"Aug. 5, 8 o'clock, A.M.—Stomach empty; coats less morbid than yesterday; aphthous patches mostly disappeared; mucous surface

stomach symptoms. Here and there on the mucous membrane, were found minute opalescent spots—the structures destroyed—and a cavity, with nuclear particles and a clear fluid in their place."

The *Medical Review* for April, 1854, contains 'Pathological observations on the bodies of 121 known Drunkards,' by Dr Francis Ogston, of Aberdeen, "deduced from appearances of a *chronic kind* met with in individuals who had perished suddenly, *while apparently in ordinary health and activity.*" They were persons who, had the question been put before their death, How do you *feel?*—would have answered 'All-right.' Was the *fact* so? Dr Ogston's summary is as follows:—

Dr Ogston's cases.

"I. *Abnormal appearances in the Head.* 65 cases, or 89 per cent.

"II. *Within the Chest.* Disease of the heart, 30 cases, (41 per cent)—of the chest, 48, (or 65 per cent.)

"III. *Within the Abdomen.* Stomach, etc. 20 cases, or 27 per cent. Intestines, 10, or 13 per cent. Liver, 30, or 41 per cent. Spleen and Pancreas, 15, or 20 per cent. Kidneys, etc. 24 cases—or 32 per cent. Uterus, etc. 8 cases, or 33 per cent of the sex."

The *Medical Review* for July, 1854, records many similar facts.

Fibroid degeneration: "In certain states of the system there exists a strong tendency to the deposition of a fibrino-albuminous material in the tissue; this *solidifies*, and produces a stroma [or carpet] substance, more or less granular, or fibrillating, containing, besides *debris* of the involved natural structure, a varying proportion of nuclear corpuscles. ... It seems pretty certainly *attributable to a deteriorated state of blood;* INVARIABLY THE PROCESS IS LATENT, AND ONLY BETRAYED BY ITS SECONDARY EFFECTS. ... An evident relation between the *deposition* of fibre in quantity, *with but feeble indications of organization*, and the hypertrophied growth of normal fibrous tissue. The large quantity of blood the liver receives, and the comparative tardiness of its course, account *in some measure* for the frequency of *deposits*, and of chronic changes of the kind."—p. 50.

"G. St., age 32. *Health good within the last 8 months.* A great porter drinker. Had hæmoptysis three months ago; cough, with expectoration. Hæmoptysis recurred, and he died Oct. 13th, in a state of exhaustion. Post mortem shewed ædema of legs and feet, abdomen distended by a ½ gal. of yellow serum, with floating flakes of lymph; *vomica and tubercles in lungs*; *valve of heart thickened*, but efficient; *the liver very dense and hard*, its substance dark, and several little specks on the surface resembling tubercles; spleen soft, capsule somewhat thickened; kidney rather large, apparently healthy. The *microscope* showed that the fibrous tissue in the liver was increased, and had encroached more or less on the lobules. The *minute ducts* appeared somewhat *atrophied*. Central cells of a bright yellow, those on the margin containing either oil or a dark pigment. *The little specks on the surface were commencing granulations.* The cortical tubes of the kidney were extremely infarcted [stuffed]; some fibre formation in the matrix. One can only speak of it as a peculiar *perversion of nutrition.*"

"*Non-granular Cirrhosis.* These livers often present exquisite specimens of the nutmeg appearance. Never so shrunk as the granular ones. The destruction of the *cells* is more or less complete: replaced by an amorpho-granular stromal substance, which contains *debris* of cells and imperfect celloid

more uniform, soft, and nearly of the natural, healthy color; secretions less vitiated. [c]

"Aug. 6, 8 o'clock, A.M.—Stomach empty; coats clean and healthy as usual; secretions less vitiated. St Martin's case.

"He has been restricted from full, and confined to low diet and simple diluent drinks, for the last few days, and has not been allowed to taste of any stimulating liquors, or to indulge in excess of any kind.

"Diseased appearances, similar to those mentioned above, have frequently presented themselves, in the course of my experiments and examinations.

"The free use of *ardent spirits*, WINE, BEER, OR ANY INTOXICATING LIQUORS, when continued for some days, has *invariably* produced these morbid changes." [d]

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particles. *It is a very remarkable and important circumstance, that so grave an alteration should have taken place in livers that exhibit, to common inspection, no very marked diseased condition.*"

"H. R. age 47. An omnibus-driver. Stout, plethoric. *Left work only two weeks ago. General health good.* At post mortem bile was found—the lower lobes of the lungs were both partly solidified, partly compressed. The heart large. *Aortic valves hardened by calcareous deposit;* not efficient. An elongated calcareous deposit on aortic flap of mitral valve. Liver large; *very hard* from fibrinous deposit; surface uneven; patches of fibrinous deposit on surface. Capsule of kidneys *thickened* and adherent; surface granular, congested. The *microscope* showed that the cells in the midpart of the lobules of the Liver contained here and there a *huge oil-drop*; while those adjoining the margin were *utterly atrophied*, reduced to mere traces. The *tubes* of the kidneys were very much broken up.

"The case is a *chronic latent* change in cardiac valves, the liver, and kidneys; *cause unknown*, UNLESS IT BE THE HABIT OF DRINKING"!

[c] *Experiments*, pp. 237-8.

[d] *Ibid*, p. 239. The celebrated Dr Beddoes, in his *Hygæa*, records two experiments on the effects of alcohol on the digestive functions, which it may be worth while to subjoin:—

"Who would not desire to have an accurate acquaintance with the substances, especially if there be any in common use, which impair the coagulating or solvent powers? *We cannot make direct observations upon the interior of the human stomach;* but we have animals very closely resembling man, in having a single and equally thin stomach, and in feeding on flesh and vegetables promiscuously. And what we can observe of the effects in our own species agrees perfectly with the phænomena in animals, so nearly akin to him in this respect. Dr Beddoes.

"The habitual injesta, or substances received into the stomach, that prove most hurtful to its operations, are intoxicating or fermented liquors. In order to observe the first effect of these liquors, when of considerable strength, I caused an equal quantity of the same food to be given to two young dogs of the same litter. Immediately after feeding, three drachms of spirit of wine of commerce, mixed with a single drachm of water, were poured down the throat of one of the animals. In five hours both were opened within a very few minutes of each other. The animal to which the *spirit* was given had its stomach nearly *twice as full* as its fellow. The bits of flesh were as angular as imme-

§ 108. Alcoholic Liquors certainly augment the quantity of fluid which exudes from the gastric follicles, but do not thereby increase the solvent quality of the fluid. On the contrary, their use necessarily lessens its digestive potency. *For what is the true history of this secretion?* The fact that it should be regularly distilled into the stomach on the application of food, *according to the real wants of the system* (not the quantity of food introduced),—which appeared so miraculous an affair to Dr Combe,—is however a very natural adaptation. Indeed, it could not be otherwise, without a miracle. For what *are* the real wants of the system, as regards nourishment? The supply of new matter, *corresponding in quality and quantity to the waste of life*, or action. But the waste of life signifies the metamorphosis of the living tissues, *the disintegration* of which restores their original elements to the blood. The nitrogen, carbon, hydrogen and oxygen, sulphur and lime, disappear respectively thrö organs appointed for their excretion,

History of the gastric juice.

diately after they were cut by the knife at the time of feeding. They were also as *firm* in their substance. In the other dog these angles were rounded off, and the pieces throout much softer.

"Mr Sandford, Surgeon, at Worcester, in his useful and entertaining tract on wine and spirits, relates the following observation, which may be confirmed by thousands equally certain, tho made with less precision. 'A late ingenious surgeon, occupied for a great part of his life in experiments equally well conceived and accurately executed, gave to one of his children a full glass of sherry every day after dinner for a week. The child was then about five years old; and had never been accustomed to wine. To another child, nearly of the same age, and under similar circumstances, he gave a large China orange for the same space of time. At the end of the week he found a very material difference in the pulse, the heat of the body, the urine, and the stools of the two children. In the first, the pulse was quickened, the heat increased, the urine high colored,* and the stools destitute of their usual quantity of bile, whilst the second had every appearance that indicated high health. He then reversed the experiment: to the first mentioned child he gave the orange, and to the other the wine. The effects followed as before—a striking and demonstrative proof of the pernicious effects of vinous liquors on the constitution of children in full health.' The deficiency of bile is full evidence of the injurious effect of the wine upon the digestive organs in this double experiment. And the result itself must be regarded as the more satisfactory, since the author, to judge from the terms in which he is described, could have been no less a person than the late John Hunter."

John Hunter.

The late Professor Sewall, of Columbia College, and President of the American Medical Institute, in his Pathology of Drunkenness (republished in Britain in Dr Lees's *Illustrated History of Alcohol*), gives a drawing of a 'limited' drinker's stomach, which exhibits that organ in a *blood-shot condition*. He contends that it is a fair type of the class; and Dr Hun, of Albany, in disputing some of the Professor's positions, admits that he saw hundreds of such stomachs in the hospitals of Paris. Such a state, therefore, *must* be the result of ordinary *wine*-drinking, since it is not the appearance presented after death, in the case of the confirmed teetotaler.

* The old error of ascribing the *dark appearance* to bile does not affect the significance of the fact.

in the form of urea, fæces, breath, and perspiration—but what becomes of the salts—of the soda, potassium, chlorine, etcetera? They remain *in* the blood, and furnish the elements of the *salivary* and *gastric juices*. In exact proportion, therefore, to the healthy action (or waste) of the system, *must* be the quantum of gastric fluid which can be secreted from the blood. It is not *made* by miracle, or by the introduction of the food, and therefore feeding has no connection with it. It will not *come* because people *cram*—but if they will work—take fresh air and exercise—then it *must come*, for its cause—'change of matter'—is in operation. It then manifests its presence in the shape of *appetite*. Now, as an antiseptic, alcohol opposes the 'change of matter'—as an element of respiration it lowers combustion, and loads the blood with carbonic acid, which decreases function—and as a stimulant and narcotic, it first exhausts and then benumbs the nervous movers of action—thus, in various ways, drying up the *source* of the gastric juice itself.

While alcohol, therefore, as a stimulant, preternaturally excites gastric capillary action, and compels more fluid to ooze out, it does not therefore increase the quantum of the gastric solvent *in* the fluid. Hence the fact, so repeatedly stated by Dr Beaumont, that stimulants *retarded* digestion in St Martin.

Alcohol, in this respect, is much worse than capsicum, pepper, or mustard. For it operates adversely to the digestive process in several ways.

1st. As we have seen, it renders *less capital available* for the creation of the true alimentary solvents, saliva and gastric juice.

Alcohol impedes digestion.

2nd. As we have also seen, it disorders and inflames the digestive apparatus itself. It hardens its coats, it exhausts its nervous and muscular irritability, it lacerates its capillaries,—thus impairing its powers both as a chemical and vital instrument.

3rd. It 'preserves' the food with which it is mixed, counteracting, as an antiseptic, the chemical process of decomposition involved in digestion.

4th. As *out* of the stomach alcohol arrests animal decay, so *in* the stomach. The worn off cells or tissues of the mucous coat, no doubt contribute, as explained by Liebig, to the process of chymification. A *change* of matter does take place (tho neither ordinary fermentation nor putrefaction), which the wasted cells promote by an action *analogous* to that of yeast on a saccharine solution. Alcohol opposes this, by 'preserving' the amorphous tissues.

5th. Alcohol interferes with digestion by altering the character, and diminishing the *regular* secretion, of the saliva.

6th. It also *alters the composition of the gastric solvent itself*. This

fact has been cursorily noticed before by physiologists, and is evident in Dr Beaumont's experiments. Modern chemistry, however, has confirmed the fact. Its *antagonism* of property, as compared with water, is even manifested here:—

"It is a remarkable fact," says Dr Dundas Thompson, "that alcohol, when added to the digestive fluid, *produces a white precipitate*, so that the fluid is no longer capable of digesting either animal or vegetable matter." *

7th. By exhausting the nervous-power of the system, it lowers the *intensity* of the action of the organic-nerves involved in digestion and its changes.

§ 109. As alcohol has not been found in the chyle or the lacteals, it seems certain that most of it passes at once, thrö the permeable walls of the capillaries of the mucous membrane, into the portal circulation. The same tendencies which it displays in the stomach, it unquestionably develops in the fine structures of the spleen, pancreas, and liver. Concerning the pernicious action of alcohol on the latter organ, neither experience, nor physiology, allow room for doubt. On the one hand, its general stimulant property exhausts the excitability of the structures, whilst its carbonizing influence interferes with their nutrition and organic strength. After the first effect passes off, therefore, the circulation is impeded, *congestion* of the gland succeeds, of which *a deficient secretion of Bile is* the inevitable sequence. As the dropping of water wears out a stone, so does the daily stimulus of wine wear out the delicate machinery of the gland, which at last flags in its function, reacting upon the character of the blood, and the general system. The *effects* of the limited use, gradually but surely, *prepare* for the more perceptible mischiefs of 'excess'; when the delicate vesicles of the liver become sealed up, exhibiting the fatty, the nutmeg, the granular, and the cheesey degenerations, and when it becomes enormously enlarged or greatly contracted.

The mode in which the small germs of disease are formed (whether in this or other glands) may be illustrated by a familiar example. On the surface of the body, a small wound or prick, on healing, is found to produce a little *pus* (or yellow matter) around it, beneath the scab (or scarf). This substance was once part of the living blood, which after exuding from the *vital channels*, loses its proper vitality, and becomes decaying or concreted matter. So within this or any other gland, *constant irritation* breaks down the capillary net-work, a minute portion of the serum of the blood oozes out, hardens or concretes within the interstices of the tissues, and becomes a tubercle—*or grain of disease.* In two ways, therefore,—1st, by lessening the quantity of

* *Digestion.* London, 1841. See our Reply to Mr Johnston.

oxygen in the blood, and 2nd, by inflicting structural mischief,—does alcohol act perniciously on the Liver, and tend to diminish its secreting and elaborating power as an organ tributary to nutrition and respiration.

§ 110. The diminished secretion of *bile*, under these circumstances, re-acts most perniciously on other functions. The process of chylification is carried on imperfectly, for want of *bile*, and the action of the kidneys is also lessened, occasioning the retention within the blood of the elements of *urea*. "In those cases," says Dr R. D. Thomson, "where the liver has been organically deranged by unnatural stimulants, both of these substances are deficient." [f]

Alcohol irritates the lungs.

§ 111. In consequence of the imperfect depuration of the blood in the liver, the lungs have double-duty imposed upon them, while, at the same time, they are themselves organically impaired by the stimulus, and less capable of performing their natural amount of work. When we consider that the lungs are an assemblage of delicate air tubes, terminating in not less probably than 150 millions of air cells, on the walls of which an uncountable number of blood vessels are distributed (bringing the blood to be *de*carbonized),—we cannot be at all surprized at the fact, that *bronchial irritation, coughs, colds, and consumption, bear, in every country, a pretty exact proportion to the quantity of alcoholic liquors consumed.*

It also explains the fact, that thousands of teetotalers are now less liable to colds and coughs, and hundreds with a consumptive tendency, less liable to have that tendency developed, on exposure to changes of temperature, than formerly as 'moderate' drinkers. We cannot, it is true, *re-make* the organism of the lungs once destroyed, but, by abstinence from nervous stimuli, we can relatively increase *the vitality* of a weakened or impaired part, and thus enable the organ to *resist* the chemical influence of the atmospheric oxygen. By keeping up the *vital fire* we shall best prevent the bars of the grate from *rusting*.

§ 112. That abstinence from alcohol has a *conservative tendency*, and the most 'moderate' use a contrary one, is proved, not only by the personal experience of the writer of this essay, but by that of many thousands. From many instances on record, we will select the following, in which the two systems were tried thrice in alternation, with exactly the same result. The abrasion of the capillaries of the mucous surface is clearly indicated by the invariable return of the blood-spitting symptoms, on the use of alcoholic liquor.

"The following is an account of my own practical trials of the comparative merits of MODERATION and TOTAL ABSTINENCE.

A postman's experience.

"In October, 1841, I began to carry letters for the Nantwich

[f] *Digestion*, p. 15.

postman (who was ill) in the country district. I was but 19 years of age, and slender bodied, but a quick walker. I walked 5,040 miles in 7 months, or 28 weeks, over 30 townships within the Nantwich delivery. The latter end of 1841 was uncommonly wet, and I frequently got drenched twice a day. I drank nothing but tea, milk, and oatmeal and water, *yet I did not catch a single cold during all the season.* This was the first experiment I made on the principle of total abstinence from 'strong drink'; but I was not the less strong for my teetotalism. The trial begun Oct. 5, 1841, and finished April 19, 1842, i.e. in the wettest and coldest season.

Alcohol occasions blood-spitting.

"The Nantwich postman having now got well, I had less work and walking to do. My 'friends' persuaded me to try just 'a single glass' of ale a day, which I did for the next six months. Nevertheless, I felt even that small quantity to do me harm. I was sensibly *weaker* than when I abstained, tho I had not such long rounds to go. *At last I began to spit blood,* when some of my 'friends' advised me to take wine!—but as my trial of the ale was in no way encouraging, I did not try the wine. On the contrary, I gave up the ale a second time, and drank three pints of milk daily. In a few days the spitting of blood ceased, and I felt quite well again.

"Once more my 'friends' advised me to drink a glass of ale a day, and once more I followed their advice. In a few months I was surprized at *again spitting blood.*

Abstinence cures it.

"Again, therefore, I left off the ale and returned to milk, when in a few days, as before, the spitting of blood *stopped.* After that, I drank milk instead of ale for some months, and found myself *stronger.*

"In the autumn I thought I would give the ale yet another trial. I did so, and the result convinced me of the difference between *stimulation* and *strength.* I found that altho for an hour or so I felt stronger, I was in reality not so; for, in a few hours afterwards I always felt a corresponding weakness, and towards evening became quite languid and tired; whereas, as I recollected, when I drank oatmeal and water, I rather felt myself stronger towards evening. I was determined to let the 'third time pay for all'; I therefore finally gave up the use of intoxicating liquors, and, on the 29th of January, 1844, joined the Nantwich Temperance Society.

"Some of my neighbors pulled a long face, and prophesied that in less than six months I should be in my grave. Of course I heeded not their mistaken notions, feeling convinced that I should be a stronger man without intoxicating drink, and I therefore stood to my pledge. I have now been a teetotaler above FOURTEEN MONTHS, and what is the result? I feel *better able* to bear fatigue; can go thrö my work with *much more ease,* walking about 150 miles a week; and, in

fact, since I have been a teetotaler, I do not know what it is to be tired. I am, consequently, not tired of teetotalism; but, on the contrary, so convinced of the evils of strong drink, that I would not for £5 drink a single glass of it again.

"Having been a swift walker from a boy, I take pleasure in walking against time. The following is an account of some of my pedestrian performances. (I reckoned the time by a good lever-watch.)

Teetotalism and pedestrian exercise.

"Jan. 28, 1844. From Crewe railway-station to Nantwich post-office, 4½ miles, in 39 minutes.

"June 21. Walked 5 miles per hour carrying 100lbs weight.

"June 24. 35 miles in 6 hours.

"June 25. 40 miles in 7 hours, 31 minutes.

"July 4. Again walked 5 miles per hour, carrying 100 lbs weight.

"Nov. 17. From Copenhall to Nantwich, 5 miles, in 43 minutes.

"Nov. 30. From Hospital-street end, Nantwich, to Crewe station, 4 miles, in 35 minutes.

"Dec. 4. 3 miles on the Copenhall road, in 26 minutes.

"Dec. 14. 6 miles under the hour, carrying 2½ stones weight.

"Dec. 18. 30 miles in 5 hours.

"Jan. 13, 1845. 20 miles in 3 hours 15 minutes.

"Jan. 29. From Manchester-street, Crewe, to Post Office, Nantwich, 5 miles, in 42 minutes.

"Jan. 31. From Haslinton to Nantwich, 6 miles, in 55 minutes.

"Feb. 18. From Crewe to Church Copenhall, (1 mile), thence to Nantwich (5 miles), and back from Post-office, Nantwich, to Church Street, Crewe (5 miles); total, 11 miles, in 1 hour 39 minutes.

"These are only extracts from my memoranda. During the 14 months I have been a teetotaler, I have walked 10,107 miles, *at the average rate of five miles per hour*, and, during that time, have carried 10,000lbs weight in parcels, newspapers, and so forth. I earnestly recommend every traveler to shun intoxicating drink, as evidently injurious or poisonous. Since I became a teetotaler I have enjoyed *better* health than ever I did before. A teetotaler, with God's blessing, I ever intend to remain. THOMAS SUTTON, Crewe Postman." [5]

"To Dr F. R. Lees. *Liverpool, December* 16, 1850.

In March 1848, I resigned the situation; which I held 6½ years; and emigrated to America, where I landed in 31 days, from Liverpool, to New York, per ship Constitution, being in that place on the 8th September.

Went out in the country, work on Vanbrych's farm, near Hackensac, 6 weeks. Leave Jersey city, walk to Bardentown, 72 miles in 16 hours; work 6 weeks at Philadelphia. Leave that place for Washington, thrö the city of

[5] *The Truth Seeker.* Douglas, Isle of Man. 1845-6. p. 106.

Baltimore; cannot obtain work on the route; go to Little York, Pennsylvania; thrö Lancaster to Philadelphia; arrive there, having endured much, slept in barns, in the severity of an American winter, and often without meat.

Having only 4 cents, which I wanted to cross the river at Jersey city, I walk upwards of 70 miles, from Philadelphia, without stopping, on my way to New York; sleep in a barn; next day attempt to walk without meat, the remaining 15 miles to New York; exhausted nature refused the task. I fell in the snow, and slept there. Three Irishmen offered me some spirits, I refused; they call me a stupid fellow, and went off in a rage; again I fell asleep, and woke at sunset half frozen; succeeded in getting into a barn, half a mile distant. I slept till noon next day. The people were at dinner; they give me to eat; I had been 65 hours without meat. I washed myself in snow, felt like a young lion, and was soon in New York; where I arrived in good health, on the 25th January, having walked upwards of 1000 miles, in the snows of America, in six States of the Union—Pennsylvania, Delaware, Maryland, Virginia, New Jersey, and New York. My last clothes being gone as security for meat, I saw certain death by starvation. I stowed away, on board the Henry Clay ship, Captain Ward, on Saturday 3rd February, at 1 P.M.

Extraordinary case of endurance.

Sunday, was still on board ship, and having eat a good dinner on Saturday, I felt no inconvenience. Monday, the porters busy loading the ship; rather hungry, and much cramped, keeping perfectly still. Tuesday, very hungry and toes frozen, contractions of the stomach painful; kept up artificial expansion, by holding the breath; this eased me much. Wednesday, hunger gone, thirst great, mind easy; could relish a drink of pure water. The ship sailed about noon, it having lain close to South Street, East River, opposite Fulton market; and I could hear all the bustle of the market.

There was a good wind, and the ship went fast out of the river; by Thursday morning I was more than 100 miles out at sea. Finding that I was walled in by barrels, cotton bags, etc., I made an effort to move some planks, in which I succeeded, and stripping my clothes, with difficulty I got out to the hatchway; was weak and dizzy when I got into the air; they give me some fish, I threw it up; the passengers offered me wine and spirits, which I refused; they strove to prevent me going to the water; said it would kill me. I knew *better*, got a good drink, eat a bit of dry bread, and felt all right. By eating a little every three hours, I was well enough to work on the Friday morning; helping the cook, feeding the swine, and cleaning in the ship; they had no spare bed, so I got two sacks and slept on the floor; and landed at Liverpool after being 20 days on board; 5 days 5 nights and 8 hours, or 123 hours, without meat.

Since that time I have walked much, and have been 9 months in the Liverpool police; which is the severest in its way of working of any in the kingdom, and have walked in 9 years, from Oct. 4th, 1841, to Oct. 4th, 1850, 85,584 miles in the respective situations of Messenger, Postman, and Policeman, including what I have walked for pleasure; and would recommend a small quantity of plain food, with milk for drink, as the best diet for a pedestrian. Two years and four months were experimental, the remaining 6 years and 8 months I was a pledged teetotaler. When I signed the pledge on the 29th Jan-

uary, my friends said it would kill me; on the contrary, nearly seven years teetotalism, joined with exercise, has made me an iron constitution; fearless either of heat or cold. Having had an offer of a situation in California, I am now on my way there, and intend to call, God willing that I should arrive safe, and offer compensation to Messrs Grinnell and Co., for being under the necessity of using their ship without their leave. If you deem this worthy of publication, you can do so; if you think it of no use, you can burn it. I place in your hands some testimonies of character, as the facts are rather extraordinary, and would intimate that a petition of the inhabitants of Crewe was sent in April 1848, to the Postmaster General, for my return at advanced wages, which petition was unsuccessful. Excuse the scrawl as I am all hurry, the ship goes out to morrow, for New York, en route via Panama for California."

The causes of tuberculous deposit in the lungs, as stated by Dr Williams, [h] include the following:—"want of pure dry air, and nutritious food; insufficient warmth and excretion; general depression; medicine (as mercury) which alters the quality of the plasma." We have shown, in previous sections, that alcohol tends in the same direction as all these.

Dr Percy's experiments.

§ 113. Dr Percy, in his 'EXPERIMENTAL *Inquiry concerning the presence of Alcohol in the ventricles of the brain, after poisoning by that liquid*,' distinctly shows (notwithstanding a contrary assumption made by Liebig, and others, on the authority of Müller), that alcohol passes thrö the entire circulation, reaching the kidneys themselves, and entering into the fluid excreted by these organs. In Experiment II, he states—"The brain and the blood from the jugular vein, the *urine*, the bile, and the contents of the stomach, were severally subjected to analysis: *and, in every instance, an appreciable quantity of alcohol was obtained*, as proved both by the test of dissolving camphor, and that of inflammability." [i]

The influence of alcohol upon the *structure* of the kidneys in the case of the 'intemperate' is admitted—and we see not how a *lesser degree* of drinking can be *altogether* without effect on the function, the fabric, and the secretion of these organs.

Effect of alcohol on the heart.

§ 114. If we contemplate the structure of the valves of the heart, and bring to mind the chemical character of alcohol,—if we recollect that this organ acknowleges the presence of even a single spoonful of the fluid within the vital current, by its increased action, and that it promotes the fatty degeneration of the tissues—we shall probably discover some reason for believing, that its unremitting, however moderate use, has an intimate connection with those various diseases of the heart which are now so prevalent—and that, where it does not by

[h] *Principles of Medicine*, § 564.

[i] *Experiments*, etc., p. 23. 1839. At p. 105, he states that he obtained *alcohol* from the urine of a man, 'which dissolved camphor and burnt with a blue flame.'

itself produce them, it favors their production by other agencies. Certain it is, that amongst the Bible Christians, Moravians, Grahamites, and other sects who have always abstained from alcoholic drink, heart diseases are almost altogether unknown.

§ 115. Flourens long ago established the fact, that while a moderate dose of alcohol *acted specifically on the cerebellum*, a larger dose affected other parts of the brain also. "The stimulating fluids of which we have been speaking," says Dr R. D. Thomson, "influence distant organs, and none more remarkably than the *back part of the brain, or that portion with which the animal propensities are supposed to be connected.* Men of passionate dispositions are thus goaded on to excesses, which they can scarce restrain in their sober moments, and are guilty of those disputings and disreputable proceedings, which sink them below the level of the inferior animals." [k]

Alcohol a brain poison.

The Experiments of Dr Percy have revealed a startling fact:—"A remark may here be appropriately introduced, respecting the situation in which the alcohol may exist in the brain. That, to a certain extent, it is diffused thrö the substance of the brain, and that it is not all contained in the cerebral vessels, will, I think, appear from the following circumstance:—namely, that, altho I have subjected to analysis a much greater quantity of blood than can possibly be present within the cranium, yet, I have, in general, been enabled to procure *a much larger proportion of alcohol from the brain*, than from all this quantity of blood. Indeed, it would almost seem, that a kind of affinity existed between alcohol and the cerebral matter." [l]

With such statements before us, we can be at no loss to account for the fact, that alcoholic liquors, even in limited quantities, should tend to inflame sensuality, passion, and lust, and to dry up the finer sensibilities of the soul.

It is at this point that the Temperance Question and Doctrine, unite with the higher Philosophy of Man. As certainly as the afferent Nerves are the instruments of sensation, so certainly is the sensorium the Organ of the Mind. In truth, the Brain is to Man, what the Temple was to the People, and the 'Holy of Holies' to the ministering priests, of Jewry. Man *is* the Temple of God, his Brain the Sanctuary which alcohol pollutes.

"Now," asks Professor Otto, "*to what part* of the brain, and to what class of cerebral organs, is the stimulus of alcohol chiefly applied? The greater part of the exciting influence of alcohol is directed towards the posterior and *inferior* portions of the brain; in other words, *it excites chiefly the organs of the animal propensities*, and according to the law that whatever stimulates strongly one class of cerebral organs,

[k] *Digestion*, etc. p. 16.

[l] *Experiments*, etc. pp. 103-4.

weakens another, alcohol at the same time that it adds new vigor to the propensities, *enfeebles the intellect and the moral feelings.*" [m]

Philosophy and Religion are alike concerned in this question. For, as Plato eloquently argues, "it is only where Reason is known in all her dignity, where she holds the supreme sway *and all the powers follow her guidance*, where a sincere interest in justice and truth prevails, —that a true, pure, and enduring enjoyment is to be found; a complete harmony of all sensations and feelings; a union of all the powers of the soul. The perfection of man consists in the universal harmony of the body and the soul. Perfection is essentially the harmony of manifold qualities; the soul and the body, therefore, which are so closely bound up with each other, must stand in a mutual and HARMONIOUS RELATIONSHIP."

Our task of love is finished, our toil of thought performed: however imperfectly, still earnestly, faithfully. We seek to promote HUMAN HEALTH as the pathway to HUMAN VIRTUE, and both as the appointed conditions of HUMAN HAPPINESS. Should we contribute, in any measure, to this consummation, our labor will not be lost.

So far as the design of this Essay required, it has been our duty to develop some of those simple but harmonious Laws of Life which the Divine Hand inscribed upon the Tablets of the Human Constitution at the very dawn of Time,--Laws whereby are carried on the subtle and complicated movements which have determined the being and governed the growth of every individual of the race since 'the golden age' of innocence—and Laws which, while equally sacred in their source, are still more ancient in their sanctions than those engraved upon the Tables of Stone.

Divine law inflexible.

The Laws of Organic Life are not the mere expressions, but the *manifested power* of an Infinite Mind and Inflexible Will: they are as eternal as the Wisdom, and unchanging as the Love, of God. They cannot, consequently, be violated with the least impunity. If these Tablets be broken, *a scar* must be left, for they are of flesh. Every creature who infringes the smallest of these laws, inflicts injury not only upon himself but his offspring, and defaces the Tabernacle of Life wherein the laws are deposited. It is as impossible to evade the penalty of transgression, as to compound for the crime. 'The dice of Deity are always loaded'—and as there is no chance in Nature, so is there no change in God. [n]

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[m] *Zeitschrift fur Phrenologie*, No. IX. 1845. Heidelburg.

[n] The 16th Report of the Temperance Provident Institution shows that while the average mortality of our country is 20 per 1000, that of the Temperance section is only 6—or the same for all ages as the general average at 15 years. The actuary expresses himself 'perfectly astonished,' that the profits of that section should be 18 per cent higher than the general.

No power of accommodation in matter, no persuasion of sophistry in mind, can bridge the gulf between Good and Evil, Food and Poison. No art can invert the nature, and no habit reverse the primitive adaptations, of the living organism. An agent originally repulsive will never become congenial. As no perseverance can make confinement healthful, or impure air invigorating and wholesome—so can no chemistry possibly convert *alcohol* into a fluid that shall contribute to the weal of man, like the bland and beautiful element of *water*.

"Providence," says Dr Prout, "has gifted man with reason; to his reason, therefore, is left the choice of his food and drink, and not to instinct, as among the lower animals. It thus becomes his duty to apply his reason to the regulation of his diet, to shun *excess in quantity* and what is *noxious in quality*,—to adhere, in short, to the simple and the natural; among which the bounty of his Maker has afforded him an ample selection; and beyond which, if he deviate, sooner or later he will suffer the penalty."

Ancient Scripture and Modern Science, the Experience of all ages and the Humanity of all men, unite in the proclamation—

"WINE IS A MOCKER; STRONG-DRINK IS RAGING;
And whosoever is deceived thereby is not wise."

A PLEA
FOR THE
PRIMITIVE DIET OF MANKIND.

A Prize Essay, 1857.

NOR THINK IN NATURE'S STATE THEY BLINDLY TROD;
THE STATE OF NATURE WAS THE REIGN OF GOD.

Pope.

Introduction.

WITHIN the compass of a score of pages, we cannot pretend to offer an elaborate and exhaustive argument on behalf of vegetal diet. We present simply a few of the leading Facts and Principles involved in this discussion, the importance and character of which may fairly be presumed to determine the solidity of many minor and subsidiary considerations.

The writer is not a member of the Society whose leading principles he here endeavors to sustain by reasons which are perfectly satisfactory to himself; and the fact is stated for the purpose of showing the Reader that no partizan prejudice, nor *esprit du corps*, either stimulates his pen or distorts his perceptions. He writes from the simple love of Truth, and with a sincere desire to contribute something useful towards the settlement of a problem of great practical moment and theoretic interest.

To avoid mistake, as regards the scope of his proposition, Vegetarianism is here advocated on the ground of *the highest-good*, not on the basis that a Flesh-diet is bad. We acknowlege the distinction made in the Laws of Menú, that while abstinence from flesh is '*becoming*,' that from intoxicants is 'necessary.' The former is a lesser-good or partial evil, the latter are simply and essentially poisonous. It is assumed as a matter of course, that the wisest-men will desiderate the best practices, and not be content with the *passable*. What we can barely *do* with, is one thing; what is *perfectly-adapted* to the perfect condition to be aimed at, is another. Our adaptability to get on with second-best circumstances, in nowise alters the truth of *absolute* 'adaptation'; and certainly will not intercept the higher blessings which flow to us thrö the channel of the higher law.

I. *The Authority of Nature.*

§ 2. That the aboriginal diet of mankind was fruit, and that amongst persons and tribes of any degree of sensibility and refinement, *butchering* has been regarded as offensive, disgusting, and barbarous, are facts that indicate beyond controversy, on which side pure Nature and our moral Instincts range themselves in this discussion. * In the early ages, ere the Art of Cookery was invented, unless Man was a savage and an eater of raw-flesh, he was *necessarily* a fruit-eater. But if Man was *not* a savage, then assuredly was he a being created with high physical perfections, fresh from the plastic hand of the Divine power, placed in a prepared garden, and endued with the purest *selective dietetic* Instincts. True, man is a 'progressive' being, in some wise senses of that phrase. Progress, indeed, may be evidenced by ascertaining the laws of Nature and using the power they confer for the increase of our own—but progress cannot consist in VIOLATING the instinctive principles, or despising the original adaptations, of our organic being. † So employed, the word either expresses a fallacy, because involving the conception of a *re*-gressive state; or it is an unmeaning term, used as an unconscious evasion of the argument. Instinct, then, with our pure Parents in Eden, did not simply evince that THEY '*knew* no better' than to be content with the viands of Paradise, as a celebrated physiologist has somewhat loosely affirmed; ‡ it shows, in our judgment, that GOD who appointed it, and knew what things were best fitting his creature's need, also KNEW that it *was* absolutely best. Genuine Instinct is a far more certain criterion of Natural want than Reason, and is in fact of the highest authority as the *direct* witness of hidden but Divine Laws behind it. All the discoveries of modern science serve to illustrate and confirm the veracity of this instinct, as we shall show by-and-bye, but the truth of it did not wait upon discovery; it was attested by the earliest revelation made to man, whereof the substance has been preserved to us in these sacred and remarkable words:—

Nature's institute.

"And GOD said, *Behold, I have given you every herb bearing seed,*

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* WILLIAMS relates, that after some years of Vegetarianism, the missionaries were *disgusted* with the sight and smell of beef, and one poor woman lamented the absence of the relish for English beef as a proof of barbarism! See admissions of *Westminster Review* and *Medico-Chirurgical Review*.

† "Reason and Instinct are but different modes of attaining the same end; nor can the former be more wisely employed than in rendering our habits conformable to the dictates of the latter."—Dr LAMBE.

‡ Professor CARPENTER, M.D.

which is upon the face of all the earth, and every tree in which is the fruit of a tree yielding seed, to you it shall be for food." (Gen. i. 29.)

§ 3. Justifications of the slaughter and consumption of animals founded on the *permissions* of Scripture, prove far too-much. They would not only justify slavery, divorce, and polygamy,—which were equally departures and descents from the original and highest order of social-life,—but they would destroy all faith in scripture revelation itself. Christ, with a Divine indignation, has for ever rebuked and repudiated this shocking style of inference. He taught the perverting Pharisees, that whatever the tolerance of polygamy and divorce by Moses and the Rabbins might logically imply, to *Him* it signified the hardness of their hearts—*not* that the Edenic Constitution of Marriage was from the beginning a *mistake*, and demanded abrogation and repeal. He asserted, that as it was in the *beginning* so was it now, and must be to the end of the world. In the same way, we imitatively assert, that the permission to eat-flesh does not destroy that scripture-declared law and Edenic constitution, whereon the Eternal looked, and *saw* that it was 'very good.' Whatever else it may mean, it can not mean that the first-law was a *blunder*: it cannot alter, therefore, the fact of Divine adaptation. It was, in truth, nothing but a verbal allowance to sink to a lower platform of life, granted to those who *refused* to re-ascend to the higher one—so that, with an inveterate propensity and habit of sensuality, they might not also further profane a *consciousness* of law. SWEDENBORG has a wise passage on this point:—"When men began to grow fierce like a wild beast, then first they began to kill animals and eat their flesh, *and because man was such a character*, it was even permitted; and so far as he does it out of conscience, so far it is lawful; for his conscience is formed of those things which he *thinks* to be true; wherefore also at this day no one is by any means condemned for this, that he eats flesh." This is but saying, however, that man abdicated his aboriginal constitution, and preferred an inferior element of life; but while he sank below the law, the *law itself* as much remains his highest dietetic rule and good, as if he was still a denizen of Paradise. It is true that men *can* live on flesh-diet, and if not so long, so purely, and so nobly as on grain and fruit, still live passably a lower-life. Under choice, as under necessity, man *is* in fact Omnivorous: and this power (or adapta*bility*) to be so, is the very fact involved in the Divine permission. It is Nature saying to us—"You are a free-agent; and since you decline to be *wise*, I shall allow you to be *other*-wise."

Permission not sanction.

> Nature's road must ever be preferred:
> Reason is here no guide, tho still a guard—
> 'Tis hers to rectify, not overthrow. POPE.

II. *The Analogy of Nature.*

§ 4. It has been frequently alleged by the advocates of Flesh-eating, that the organism of man is *intermediate* between that of herb-eating creatures, and that of the purely flesh-eating animals. Now, granting such to be the case, what is the legitimate inference? Is it that half his food must be grass and grain, and half of it blood and brawn? Does not the eating of half-a-rabbit demand the *same kind* of adapted organization as the eating of a whole one? Would not Nebuchadnezzar as much require instruments for *herb-eating* and digesting, the first half of the day as the second?—and if he had them on the first part, would they not equally serve their turn for the remainder of the diurnal cud-chewing? The objector shrinks from the logical conclusion. The fact is, man is *not* constructed either for chewing the cud, or for champing and tearing flesh. The ox is *not* his cousin-organique; the hyæna, even the laughing one, is *not* his brother. Certain generic *types*, or homologies, are to be found in the Skeleton of man, as in his viscera and organs—but the 'forms' of those types which are *special* to the gramnivora and carnivora, are in him only latent, not developed. He has *canine* teeth, so called because they are *typical correspondents* of certain teeth characteristic in the Dog, with which it tears flesh; but in reality, these teeth in man are so *un*developed, so modified, as no more to answer the special use of the dog-teeth than of a wild Boar's tusks. By the same superficial and absurd application of analogy, it could be shown that as Man possessed a nose, which is the *rudimentary correspondent* of the Ant-Eater's snout—ergo, Man is Antivorous!

Osteology of man.

§ 5. What then, we repeat, is the true inference from the fact that Man is neither herbivorous nor carnivorous? A subjective-alteration of structure implies an objective-alteration of conditions. If man's organization is *so* altered that he can neither chew grass nor raw-flesh, then we must expect to find some sort of objective-food that is *neither* flesh nor grass. If his organization is intermediate, *so* must be his food. And so, undoubtedly, the most valuable and the most delicious food of man actually is. 'The staff of Life' is the gift of Ceres—the rich and exquisite dessert, the gift of Pomona!

§ 6. It would be tiresome and needless to summon a multitude of scientific authorities to bear witness of the FACT. 'One is as good as a thousand'—says the proverb: but we will cite that one who is above a thousand, and who is confessedly the great master of Comparative Anatomy in our day—Professor OWEN. "The apes and monkeys, which man nearly resembles in his dentition, derive their staple food from fruits, grain, the kernels of nuts, and other forms in which the most sapid and nutritious tissues of the vegetable kingdom are elaborated; and the *close resemblance* between the quadrumanous and human

Professor Owen.

dentition, shows that *man was, from the beginning, adapted to eat the fruit of the trees of the garden.*" *

§ 7. Experiments (as with St MARTIN) and experience show that every form of vegetal-food is *as digestible*, some more so, than the correspondent element found in flesh.

BOUSSINGAULT found the different substances of the following table, pass in one hour from the intestinal canal into the blood, in the quantities indicated :—

TABLE OF RESORBTION OR DIGESTIBILITY.

Rice (8½ per cent Albumen, 89 starch)	= 4.20	Grammes.†
Dry Cheese (70½ per cent oil)...	= 2.50	
Bacon (96 per cent fat)	= 0.88	
Cacao seed (Cocoa, 48 per cent oil)	= 1.77	
Starch (yielding 2.37 carbon)	= 5.26	
Sugar (yielding 2.36 carbon)	= 5.62	
Beef, boiled and freed of fat	= 1.41	
Dry Casein (curd, or cheesy-principle)	= 1.37	
Dry Gelatin ‖	= 4.40	
Albumen (white-of-egg boiled)...	= 1.25	

Digestion.

As to *time* of digestibility, FRERICHS found that fish and the flesh of *old* animals (whose *cordage* is more developed) form an almost homogeneous mass, very slowly acted upon by the digestive fluids from the surface inwards; the connective tissue having to be first dissolved, before the gastric solvent can reach the openings upon the primitive bundles beneath. In the stomach of a cat, four hours after eating, pieces of raw-beef were but slightly softened on the surface; and *cooking* made but 30 minutes difference, since the breaking up of the tissues was counteracted by the coagulation of the albumen. In an abundant diet of flesh, large numbers of muscular fibres are found unchanged in the fæces.

According to the Dorpat experiments of BIDDER and SCHMIDT, performed on a female Esthonian peasant who had a gastric-fistula in the left side, between the cartilages of the ninth and tenth ribs, the secretion of the *digestive-juice* was 31lbs daily. When mixed with the saliva, it is always either neutralized or alkalized, but when obtained from the stomach directly, by irritating the mucous membrane with peas, SCHROEDER ‡ obtained a clear acid juice, containing free-hydrochloric acid. The gastric juice holds in solution nearly 46 parts per 1000 of the following solid constituents (the remaining 954 parts being water).

* Other analogies in favor of Vegetarianism will be given further on.

† 1 Gramme = (equals) 15½ grains Troy (less .62).
1 Kilogramme = 2lbs 3 oz. 4 dwt. Avoird. (plus .17).

‡ Succi gastrici humani Vis digestiva, etc. Dorpat, 1853.

‖ Gelatin is hardly food; being incapable of nourishment, and slowly combusted.

Analysis of gastric juice.

An albuminate (*Pepsin*) coagulating with heat	0.780
Sugar, *un*coagulable albumen, lactic and butyric acids and ammonia	38.430
Chloride of potassium	0.704
Chloride of sodium (common salt)...	4.263
Potash (combined with the organic acids)	0.179
Phosphate of Lime...	1.030
Phosphate of Magnesia	0.470
Phosphate of Iron	0.010

After vegetal-diet, the latter element is increased. *Vegetal oil* is readily digested, or resorbed, not in the stomach, but in the small intestine, *if taken in small quantities*; and it essentially promotes the digestion of albumen and starch.

III. *History of Nature.*

§ 8. Man is God's work—and man's individual and collective *experience* is the unfolding of the laws which govern his manifold nature—laws impressed upon him by sovereign power and wisdom. As a matter of fact, then, we may ask here—before proceeding to any deeper scientific analysis of man's wants and nature's provisions, and postponing the question as to the absolutely *best*-diet,—"Does the use of common vegetal, or non-animal food, rationally selected, sustain human beings in health and strength, for the easy and satisfactory performance of mental or manual labor?" As to physical-power, there can be little room for doubt. Whole tribes and nations, both in ancient and modern times, have practised the system with very apparent advantage. The standard-works on Vegetarianism give many pregnant examples. But there is scarcely any need to go further than our own country for evidences of its compatibility with a full physical development. The hardy peasantry of Yorkshire—of Fifeshire and the North of Scotland—are sufficient examples. Flesh-meat with them is a rarity—oatmeal porridge and milk, with bread and kail broth, their staple food.

§ 9. Whether the regimen be tried in low latitudes or in high ones, it is found to be equally successful. In one of the early Reports of the Poor Law Commissioners on Education (1841), Mr WILLIAM FAIRBAIRN, of the great Iron-foundries in Manchester and London, gives the following emphatic testimony:—

"I observed, on a late journey to Constantinople, that the Boatmen or rowers to the Caiques, who are perhaps the first rowers in the world, drink nothing but water; and they drink that profusely in the hot months of the summer. The boatmen and water-carriers of Constantinople are decidedly, in my opinion, *the finest men in Europe*, as regards their physical development, and they are all water-drinkers; they may take a little *sherbet* [syrup and water], but in other respects are what we should call, in this country, teetotalers.

"*What is their diet?—Chiefly bread;* now and then a cucumber,

with cherries, figs, dates, mulberries, or other fruits which are abundant there. Now and then a little fish. Turkish porters.

"*Do they ever use animal food?* Occasionally, I believe, the flesh of goats; but *I never saw them eating any other than the diet I have described.*

"*Did they appear to eat more than the European workmen?*—About the same; if anything, *more moderate* as respects the quantity." *

This last remark is important: for instinct infallibly guides men to eat enough: so that these fine large-men find a somewhat less quantity of vegetal food, equal in *satisfying power* to a larger and more costly supply of flesh. Nature, like wisdom, is justified of her children.

§ 10. After all the noise we have heard about the NECESSITY of fat-meat and tallow in low latitudes, Sir JOHN RICHARDSON, M.D., one of the Arctic voyagers, says "that the servants of the Hudson's Bay Company are now finding out by *experience*, that altho wheaten-bread does not give them adequate support, bread composed of *maize-flour* [which contains 10 per cent of oily matter] *answers every purpose;*" 2½lbs being fully equal in sustaining the capacity both for *muscular exertion* and for *bearing cold* to the 8lbs of fat-meat of the ordinary ration.

Let us here remind the medical world of a fact which it seems to have forgotten in its discussions on this topic, but one distinctly proved in the experiments on Respiration by BOUSSINGAULT, † viz. that the organism will not *resorb* that quantity of fat which is adequate for the restitution of the carbon consumed—showing that fat is an exceptional food, required, as it is supplied, only in small quantities. A duck, for example, expired in one hour 1.25 grammes of carbon; but 0.84 of a gramme of fat is all that is resorbed, which contains only 0.7 of a gramme of carbon. But the carbo-hydrates are resorbed by the intestine as fast as Respiration can need them; and what is singular, 5.26 parts of starch and 5.62 of sugar are resorbed in one hour, thus yielding *the same value*; the difference in absorption compensating the difference in composition.

§ 11. As respects individual experience in relation to mental power, philosophic thought, and moral character, the Vegetarian-system is interwoven with the History of Philosophy, Philanthropy, and Religion. Few 'world-*compelling* men,' as the *Westminster Review* observed, have been its disciples: but many glorious, world-*impressing*, world-*improving* men! The laurels of *its* heroes are not crimsoned with blood. The amaranthine wreaths which encircle *their* brows, sparkle

* The luxe-consumption of Flesh, which runs rapidly into decomposition in the system, is in itself much worse than excess of Vegetal-food. As LEHMANN observes, "large quantities of urea, far exceeding the normal mean, are excreted" (iii. p. 360).

† *Ann. de Chemie*, 3 sér. T. 18. p. 444—78.

with the dews of mercy, and are laved in the waters of life;—they are green with unfading hope, and blossom with immortality! The lust of ambition and the love of power, the rage of conquest and the impulses of ferocity, are never fed by the feasts of Nature. Towering amidst a host of famous men—prophets, priests, philosophers, sages, poets, authors, philanthropists, apostles—there are DANIEL and JOHN, PYTHAGORAS and EPAMINONDAS, EPICURUS and PORPHYRY, SIDDHARTA, CYRUS, and MANAHEM, MILTON and SHELLEY, SWEDENBORG, HOWARD, FERGUSON, FRANKLIN, WILLIAMS, and the sainted WESLEY. * If we consult the records of Longevity, we shall also discover that the Vegetarian-practice has been concomitant with many of the most noteworthy instances of the extreme prolongation of a happy, conscious human-life.

Historic names.

§ 12. Even hostile critics have been compelled to concede the sufficiency of grain and fruit to sustain the physical-man. The late Dr SAMUEL BROWN, in the *Westminster Review* article, says:—"We are ready to admit that Vegetarian writers—especially the author of 'Fruits and Farinacea'—have triumphantly proved that physical, horse-like strength is not only compatible with, but also favored by, a well-chosen diet from the vegetable kingdom; and likewise, that such a table is conducive to length of days." Dr CARPENTER, in the *Medico-Chirurgical Review*, says:—"As regards the *endurance* of physical labor, there is ample proof of the capacity of what is commonly called the vegetable regimen, to afford the requisite sustenance. ... The vegetable kingdom is *perfectly capable of supplying the necessary wants of man under all ordinary circumstances.* ... The advocates of Vegetarianism have a wide and secure basis of Experience, such as can scarcely be shaken by any negative testimony—certainly not by the fullest proof of the unsuitableness of vegetable regimen to *individuals*."

IV. *The Dietetic Laws of Nature.*

§ 13. A law is a relationship—a method of action—a procession of facts, after a fixed invariable order. To understand the relation, we must understand the things related, which, in this case, are Man, with his multifarious wants, and Diet, the adapted-means of their satisfaction. Man is an organized being—a warm-blooded animal—intended for action and material conquest. "Go, and subdue the earth," is the primal announcement of his mission: and his body is the machine and enginery wherewith he must accomplish the task. Let us, then, glance at its statics, its structure, and its conditions.

§ 14. All who know anything of the Chemistry of Nature, know that the surface of our globe and the atmosphere which envelopes it—from

* Sir ISAAC NEWTON thought-out and wrote his famous *Principia* under the vegetal-regimen.

soil and sea to azure sky, from the tender grass and 'embattled grain' to the majestic woods—with the myriad shapes of beauty and of sentient-life that creep, or fly, or roam therein—are mainly composed of some few primitive substances. In a different sense indeed from the ancient formula, which made Earth, Water, Fire, and Air into the elemental-bases of the world, we can almost resolve them into the same mystic number. How nature is built-up.

Four elements in one firm band,
Give form to Life—build sea and land. *

The organic Man is no exception: from these earth-born elements he came, and to the same he must return. Vegetal and animal-life are but passing-apparitions of a Power and Will beneath them—an evanescent development of eternal Thought and Love—a step in that golden-ladder which connects the present with the future—the material and fleeting forms of Life with the abiding spiritual Verities.

§ 15. Whether we analyze vegetable or animal-organism, the same result comes out. 1, CARBON—the black-matter of charred wood, bone, or flesh; crystalized in the diamond—the platform or skeleton of organized matter. 2, OXYGEN, the vital, stimulating element of the air we breathe; the magical transformer of all things; the active spring of change, and the *timely* Destroyer and Regenerator of Nature. 3, HYDROGEN—the Light-gas (in combination with a little carbon) with which we inflate our balloons, and the combustible element of our gas-lights. 4, NITROGEN—another gaseous-body, essential to all vital organism,—one which is largely interfused in our atmosphere as chip-in-pottage, and from its low affinity, or negative attribute, seems to be used as a *pivot* of transformation. Yielding itself up to the varying attractions of other bodies, it occasions the rapid breakings-up of organized forms essential to the idea of *life*. Besides these, in the structure of vegetal cells and of blood, we find certain bodies in *minute*, almost infinitesimal quantities, which belong to the Earth-Kingdom—such as iron, lime, phosphorus, sulphur, sodium, chlorine, and potassium.

§ 16. The *bulk* of our bodies, however, consists of the first four elements: not even excepting the bones, which almost entirely disappear under the consuming power of time or heat. What then is the natural history of these elements—up to their becoming a portion of our own frames? The succession of a single-season will show. The Carbon first exists in union with Oxygen, as *Carbonic-acid* (CO_2), being breathed from animals, or arising from combustion of wood and coke, and steaming from the craters of volcanoes. It forms, indeed, but a very small proportion of the atmosphere,—for it is a gas fatal to

* SCHILLER.

animal life,—yet in sufficient quantity for the wants of the vegetable. Oxygen and Hydrogen exist in happy-monogamic union as *Water* (HO), which is distilled from the vast reservoir of the ocean, and descends as dews and fertilizing showers upon the bosom of the longing Earth. Nitrogen exists as the volatile alkali *Ammonia* (NH_3), the result of the decomposition of organized matter, and in small part as *Nitric-acid* generated by the action of thunder-storms in the tremendous laboratory of the clouds. The minor elements exist in the soil. The *cells* of seeds and plants are centres of a peculiar force, which is excited to action under the influence of light and heat. The seed *grows*—in other words, assimilates extraneous matter to itself—enlarges into roots and spires, forming a plant, which branches, and buds, and blossoms, and bears fruit. The plant feeds upon the carbonic-acid, which it decomposes, *fixing* (that is, solidifying) its carbon, and setting free its oxygen for the use of animals. It drinks up the water, which it uses as the solvent of its mineral elements and the diluter of its ammonia, using of each what is needful for seed and structure *after its kind*. Thus within its living cells it transmutes gas, liquid, and earth, into solid-alimentary matter—into wholesome grain and delicious fruit—which, within the higher organism of man, is destined to become a part of his own structure, or of his vital-fluids, fulfilling its temporary purpose of action or of heat, and then to be resolved into gas, water, ammonia, and earthy-salts once more. "Eternal round! wherein Death is quickened and Life appears, but in which Matter changes only its place and its form."

Food of vegetables.

§ 17. Our *blood* is our food transformed and vitalized, not converted, with a certain amount of waste-matter in addition;—our bone, flesh, nerve, and tissue are varied *deposits* from our blood, moulded and modified by varying chemical affinities under vital attractions and forces. It is an expressive fact, that from the remotest periods of history, every nation which has retained the slightest traces of primeval civilization, has enjoined abstinence from blood. Think of a civilized-man—of a lady or gentleman of any taste or culture—feasting on a *blood-pudding*! The very idea is barbarous and disgusting. Man has clearly a true 'natural prejudice' against the custom: and even up to the time of the Christian Apostles, notwithstanding the permission to consume the *carcases* of animals, the prohibition survived against "blood and things strangled." This was ranked amongst the 'necessary' things to be observed. In reality, however, flesh is *more akin* to our own organism than blood, and blood *more akin* to our natural food than flesh. Why we do not equally revolt from the custom of using flesh as from the use of blood, must be ascribed very much to its *being* custom, which has a disastrous power in blunting

Relation of blood.

our perceptions of the truth of things. Besides, the red flesh *contains* blood, and is colored by it.

§ 18. In our blood, therefore, we must find the USE of our food. It is our food naturalized in the new republic of life to which it is introduced—as men from the different provinces of a country, by dwelling in the capital, merge their provincial dialects and habits in a common language and common manners. The *essence* of food and the *essential elements* of blood, are in a CHEMICAL sense identical. They contain the 'elements' of which we have been speaking, united in the following proximate forms :—

Albumen and Fibrine = *Organizable and Organized Matter.*
Oil and Sugar = *Organizing and Heat-forming Matter.*
Potash, Soda, and Phosphate of lime, etc. = *Ash.* *

Essence of food.

§ 19. The ALBUMEN is the great plastic principle out of which our living structures are reared, with the aid of OIL, always present in the primitive cells and seeds of life, and constituting, so to speak, the mortar and instrument of organization. Out of these, and under various essential conditions, our osseous system is constructed—at once the pillars and walls of the temple of Life, and the levers of its power † Out of these, too, are strung and twisted the vital cordage of our muscles, and the tough ligaments which bind them in their places. Out of these our wondrous net-work of Telegraphs, the Nerves of sensation and of motion, are all nourished—and out of these is built-up that Regal habitation of the Soul, the sovereign Head and Brain.

§ 20. There are other structures also, but as these have reference to the *conditions* of life, they cannot be understood until those condi-

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* In 1000 parts of the Circulating stream we have in exact quantities of the various ingredients, as follow :—

Analysis of blood.

Blood Globules (white and red together)	131
Albumen	71
Fibrine	2
Fat and Sugar	2
Chlorine and Salts	5
Water, the vehicle and menstruum of life	789

The *Edinburgh Review* (April, 1855) mistakes in affirming that modern chemistry "abolishes the artificial distinction which mere sense has long established, between animal and vegetable food." In flour and fruit, for example, where do we find the *excretive elements* (matters tending to dissolution) which are present in the juice of meat and in blood? Vegetal-food is the work of *progressive* formation, but Flesh contains the same elements advanced to the *turning point of change*, and mingled with the *results* of actual decomposition.

† To avoid the need of dwelling specially on *bone-nourishment*, we observe that the *blood* of the carnivora of course contains more *phosphates* than that of the herbivora, yet the *flesh* of these latter always contains as much as the flesh of the former. In other words, the excess is *excreta*; and not wanted for nourishment.

What is life?

tions are explained. What attributes are covered by this word 'Life'? What is it *to live*?—to have 'Vitality' as men have? Man is organized, but so is a watch or a steam-engine: for 'organization' denotes the forming and fitting of solid matter to accomplish some special work—as the marking of Time, or the drawing of a Train. Besides organism, there must be added *warmth* and *movement*: and of course all which these involve. Not outside-warmth, which may be communicated, but *central*-warmth, generated from within. The snowy mantle of December is over nature now: but as we look abroad, we note the thawing-influences of vital conditions. On the boughs of the dead-fir in the plantation, the snow-flakes lie thick and unmelted; on the living Deodora and verdant Laurel, it has dissolved under the higher temperature. The snow vanishes from the surface of Vegetation first—because Vegetation is *alive*. Life, therefore, implies heat—necessary alike to its commencement and its continuance—for heat is the great condition of change. On the summits of the Andes and the Alps there is no life—because no heat;—in the ice-waves and pinnacles of the *mer de glace*, we look upon a stereotyped, because a frozen, page of Nature's book. Heat, however, is but an attribute of change—the result of material action and reaction—of slow decomposition or rapid combustion. Hence it is a *passing* state—or in common parlance, it radiates or evaporates. It is a condition dependent on two-factors: adapted *fuel* to burn or change; and *oxygen* (air) to support, with incombustible salts to promote, the combustion. To live, then, we must have warmth, and therefore fuel; air, and (so to speak) a furnace within us, to generate that warmth. In other words, we must have the conditions and the organism needful for inducing change of matter within the body. Without this the blood would as surely cool as does the water in the kettle when removed from the fire. The body may be viewed as an animated Engine for the production of mechanical force. The SUGAR, OIL, and Effete matter are the fuel, from the transmutation and decomposition of which the force is derived—a force always equivalent to that originally absorbed by the food from the solar beams. A strong-man generates every day a measure of heat sufficient to lift 13,500,000 lbs weight one foot from the ground—if *directed* to the production of mechanical power, as in the steam-engine.

Heat and movement.

§ 21. Perpetual *movement*,—organic, if not voluntary,—is the end of heat; and is therefore another essential attribute of the living tissues. Bones and every other part are continually being renewed; because to live is to grow old. Nerves, brain, and muscle perform mental and mechanical work under a voluntary impulse, over and above. Each action brings on its reaction—its fixed inevitable collapse,—because to *do* is to *suffer* change. Daily 'wear and tear' of

the vital-organs needs 'daily-bread' to repair it: needs, not simply fuel to burn for warmth, but food capable of being transformed into the structure itself—in short, plastic nutrient substance, whereof albumen is the type. Food or bread, therefore, must be of a *dual-nature*, adapted to these dual and distinct uses: but Drink of a *single-kind*, like water, its use being that of a vehicle for the circulation, thrö tube and tissue, thrö artery and cell, of the different solids which it holds in solution.

The bodily organism.

§ 22. The organism necessitated by these conditions of the vital structure, may now be indicated. The Respiratory and Arterial system for the conveyance of oxygen thrö all the ramifications of the frame;—the Respiratory and Perspiratory systems for the exhalation of the gas and vapor of combustion, and of the salts;—the Excretory system devoted to the elimination of the nitrogenized, sulphurous, and drossy-elements of our food, so that the waste effete matter may not be retained beyond a certain period;—and finally, the Digestive and Assimilating system for the transformation of food into blood.

Complexity of use.

§ 23. Nature, however, in her infinitude, freedom, and many-sidedness, refuses to be 'cribbed, cabined, and confined' by these rude verbal Outlines of her plan. All we have said as to the *distinctions* and *contrasts* in the use and properties of Food is true indeed—but not the whole truth. Behind and besides the general portrait we have drawn of the fundamental aspect of Chemico-physiology, there is (so to speak) a wonderful elasticity and play of individual features and expression—beneath the broad and profound adaptations we have indicated, there is another deep, in which are displayed contrivances of a more complex and multitudinous description still. For example, while oil is unquestionably an element of Fuel, and not of itself plastic-nutriment—it is *also* a substance essential to the brain, and an agent contributary to the nutrition of every organ—and it has *also* yet a fourth use as a mechanical padder and lubricant, and *also* a fifth use as an auxiliary-digestor of albuminous and amylaceous food. Sugar, again, while correctly placed in the category of Fuel-food, has other important functions; it is essential to the beginning of organization in the egg, where, as likewise in the serum of the blood of man, and even in the fœtus where it is generated, it contributes to the *solution* of the carbonate and phosphate of lime; * and it has, in addition, a kind of preservative-power in the blood, moderating the metamorphosis of organism in the young, who require to be built-up, an use which explains their instinct for saccharine matter; and it has still a further use as the natural 'constituent' of the important Lactic-acid, and of the Fatty-acids, if not of fat itself. The molecular changes which food and

* Vide Barreswil. *Moniteur Industriel.* No. 1542. 1850.

Internal changes.

effete matter undergo in the system may be here *illustrated* in its nature by the transformation of sugar within the body. Recall the composition of Grape-Sugar (*glucose*), whether formed within the body from starch, or preformed in food: C_{12} O_{12} H_{12}. Oxidized—i.e. split-up by the action of oxygen—its 36 atoms may pass into this form:—

Carbonic acid	=	4 C,		8 O
Butyric-acid	=	8 C,	7 H,	3 O
Hydrogen	=		4 H,	uniting with extraneous O as HO.
Water	=		1 H,	1 O

Or two atoms of Sugar (C_{24} H_{24} O_{24}) may be decomposed thus:—

Carbonic acid	=	8 C,		16 O
Caprylic-acid	=	16 C,	15 H,	3 O HO.
Hydrogen	=		4 H,	which combine with O as HO.
Water.	=		4 H,	4 O

By like changes, in the carnivora especially, sugar, whether of the muscles (*inosite*), or of the blood (*glucose*), is derived from the *decomposition* of albuminates and of fibrin; for no matter whether sugar or starch has been given in the food, sugar is still found in *requisite* amount within the body. *Oxidation*, it will be seen from these remarks, is a slow process; yet one which must be extended step by step, and atom by atom, to all the tissues and organized elements of the frame; and not only must it change an atom of Sugar, or of Albumen, but it must do this by discrete degrees and intermediate processes.

§ 24. Here is perhaps the place to notice those elements of the Food referred to as Ash; mineral ingredients which divide, as to use, into three classes: viz. *Physical*, Chemical, and *Incidental*. (Water, it may be observed, is a mineral element of the frame, essential to the play of chemical affinities, and to the development of the properties of certain tissues.)

Amongst the first class, we place Carbonate and Phosphate of Lime, and Magnesia, found in the osseous system, Fluoride of Calcium, for the enamel of the teeth; and amongst the third we put Silica, Sulphates, Carbonate of Magnesia, Manganese, Copper, etc. The second class of substances and their uses, remain to be explained.

Phosphorus is an essential element of the Brain and of the Nervous system; and is associated with what is called Cerebric-acid; and, after this substance and lime, we find the great bulk of the ashes of Food to consist of either one or both of the alkalies, Potash and Soda. These perform an important part in those perpetual molecular movements which occur throöut the body—and are truly magical agents of vital Metamorphosis. How important, may be compre-

Uses of the salts.

hended from the fact, that they are essential to the Digestive Fluids (the saliva, the bile, gastric, pancreatic, and intestinal juices), which are secreted by a man of 10 stone weight, to the extent of 10 kilogrammes (containing 310 grammes of solids) daily. When we recall the fact that the juices of the flesh are acid, and that when two fluids are separated by a membrane, the main current of the interchanging fluids will be towards the *alkaline* side of the partition, we shall see how important it is that the blood should be (what it is) an alkaline fluid, resorbing into it, as it were, the effete-acids and elements of the tissue, by endosmosis, and thus *completing* the circulation, and at the same time *neutralizing* those acids. These alkalies, moreover, are found powerfully to promote *combustion* and change of matter, thus aiding the oxygen in its work. This explains the popular prejudice for green vegetables in spring, which are rich in alkalies; and for the various ways in which they are taken (as the phrase is) 'to purify the blood.' It is nearer the truth than is generally supposed. *

The perfect *sufficiency* of the vegetal-kingdom for the dietetic wants of man, appears as clearly from this analysis of his nature, as it before did from the records of Experience.

V. *Histology and Pathology of Nature.*

§ 25. Amongst the one-sided and extravagant aspects of modern physiology *popularized*, that which has reference to the alleged necessity, utility, or importance of *animal-fat* (from dripping and lard to cod-liver-oil), is the most notable. Addressing ourselves to inhabitants of the temperate climes—the seat of the truest civilizations—we have no call to consider what is either allowable or needful to the squalid races occupying the frigid regions of Nova Zembla, or the dreary wastes of Lapland. Hyperborean latitudes are not within the limits of this argument: we have to do with the choice seats of Industry and Science, and with the most favored sons of Japhet. In providing for these, her advanced children, Nature, which has so nicely adjusted her edible gifts to the varying circumstances of her offspring, carefully *limits* the quantity of oil elaborated in her vegetal productions. For the infant organism, too immature to make much fat for itself,—and of which at all times indeed but a very minute proportion should exist in the blood,—the mother is appointed to prepare the *cream*, delicately mingled with the casein (curd = albumen), the absorption and deposit of which it has to promote. As the organism, however, becomes more

* We take little account of the sulphur associated with the salts in Spa-water, and may parody an old distich:—

It is the *Salts* perform the healing-feat;
Sulphur, if not all, is much of a cheat.

Histology of man.

matured, and the masticating apparatus fitted for the permanent forms of food, the proportion of *ready-formed* oil is lessened. In the dietary now appointed in the order of Nature, starch takes the place of sugar-of-milk, and common saccharine-matter that of much of the oil. Why? Because, in the teleology * of nature, it is best that the stomach and liver should not be disordered or oppressed with an excess of such material, or the general circulating current impeded in its course; and therefore the salivary and pancreatic juices, and the liver, are destined to *convert* starch into sugar. The histology of Nature illustrates the law of gradation and procession—and altogether abhors the stuffing-plan which our fashionable Dripping-doctors so rudely recommend.

§ 26. The practice of consuming fat-of-cattle, or fat-of-cods, is however not more discordant with the analogy of nature, than the *theory* of it with the most certain facts of physiology. LIEBIG had need to have rendered great services to science to make amends for his huge and often pernicious mistakes, amongst which we must rank the representation that *oxygen* is the foe of life, always bent upon 'consuming' the organism, and to be made placable only by burnt-offerings of the 'fat-of-rams' and the fluid oblation of *oleum jecoris Aselli!* The latest *dictum* of science is thus stated in the magnificent work of LEHMANN:

Lehmann on oxygen.

"*There are no acute, and but few chronic diseases in which the oxidation of the constituents of the blood is not* DIMINISHED *or impeded. There is no disease characterized by a* TOO SUDDEN *or rapid oxidation* of the blood." † (The italics are not ours.) *Oxyphobia*—the fear of fresh-air—is a foolish-fear: for oxygen is the necessary correlate of high vitality and health. The use of animal-fat, beyond all doubt, contributes to clog the vital functions, and to retain within the circulation effete matter, and especially interferes with the function of the Liver, which is that of renewing the blood-corpuscles and preparing a more vital-fluid for absorbing oxygen and inducing energetic reaction. Dr CARPENTER, in his strictures, recommends the vegetal-regimen as a cure for dyspepsia, liver complaint, and similar disorders: but the virtue of it, as cure, is negative—it *relieves nature* from accumulated oppression, so that the constitutional forces are at liberty to manifest their recuperative and repairing action. The organism, as a matter of course, returns to its normal functions. ‡ "The first thing," says LEHMANN, "in many diseases, is to furnish a copious supply of oxygen to the blood, *which has been laden with imperfectly decomposed substances*, and

* Teleology is the science of final-causes—of adaptation to purposes.

† *Physiological-Chemistry*. Vol. i. p. 219. † iii. On Respiration.

‡ In *epilepsy*, Vegetarianism always prolongs the interval of attack—often cures permanently.

to remove as speedily as possible the carbonic-acid which has accumulated in it." *

§ 27. The fact is, that the amount of oxygen absorbed depends much upon the *quality* of the blood, as the right condition of *that* upon the nature of the food. Now we have striven to impress upon the reader the fact, that in the beautiful adjustments of the organism, the great thing for health is *balance*. Each organ has, in its appointed task, enough to do; while none can permanently have *extra* duty imposed without disturbance and disease. We insisted on the continual-creation of effete matter; not only the gases, vapor, and ashes of the directly 'fuel'-food, but of that resulting from the metamorphosis of the tissues. The old-furniture of the house, so to speak, is wisely broken-up and used as fuel, on the road towards final elimination. (These bodies consume a portion of oxygen for the oxidation of their hydrogen, which is given out as water.) Now it must be obvious, that blood made out of animal flesh and juices *already loaded with effete elements in the act of change, and on their passage and descent towards the excreting organs of elimination*, must be of a morbid description, *susceptible* of more rapid transformations of a regressive character, and absorbing therefore more of the vital oxygen. Vital balance.

It is a remarkable confirmation, that the bodies of Vegetarians after death, do not decompose and putrefy nearly so rapidly as those of flesh-eaters. Sir EDWARD BARRY, by feeding on Partridge for a few days, developed a strong tendency to putrefaction.

It is worth remembering the remark of LEHMANN, that blood *fibrin* is "formed by a process of oxidation from albumen." True, "the augmentation of fibrin in inflammation is *due to a diminution in the supply of oxygen;*" but that arises simply from the fact, that the short respirations are incompetent to convey *enough* of oxygen *completely* to oxidize certain substances, which therefore remain and accumulate as *fibrin*. Flesh-diet *increases* fibrin by robbing the system of oxygen originally designed for other purposes. Now, as LEHMANN says, "an Fibrin.

* BIDDER and SCHMIDT and NASSE have shown that a *flesh-diet* induces a much more copious secretion of Bile than vegetal, amylaceous food. A dog, fed on bread and potatoes, daily secreted 171 *grammes* of bile, containing 6¼ grammes of solid matter, but when fed with Flesh, 208 grammes of fluid, containing 7 grammes of solid bile. An *exclusive* fatty diet was found to have no influence on this secretion; but the *addition* of animal fat to the ordinary diet greatly increased the bile. NASSE makes the important remark, that the mineral (and essential) substances secreted in definite times remain nearly constant, the variations in the solid constituents are chiefly induced by the *organic* matters. Over-feeding was found to increase both fluid and solid by 1-5th the amount over that secreted after a simply abundant meal. Flesh-diet, therefore, is equivalent to *overloading and overworking* the hepatic system with partly effete organic matters. (The secretion reached its maximum about the 14th hour after the last meal.)

augmentation of the fibrin *coincides* with those states in which nutrition and renovation are most affected; and is found to be increased when *more* albuminous food has been consumed than *could* be applied to the reparation of effete tissue." The truth is, *fibrin* is albumen TREMBLING UPON THE VERGE OF DECAY—which sufficiently explains the proclivity of Flesh eaters to putrid and inflammatory disorders.

§ 28. One of the greatest blunders of LIEBIG as a physiologist, was associated with one of his greatest chemical triumphs: we refer to the substance (obtained from chopped flesh, from the smooth muscles, from the blood, and the urine) called *Creatine* (C_8 H_9 N_3 O_4 , and to its alkaloid *Creatinine* (C_8 H_7 N_3 O_2), which is ammonia conjugated with a highly nitrogenized substance, containing one atom less of hydrogen than Caffein. It is found like *Creatine* in the muscles, the blood, and the urine, where the two occur in an inverse ratio—(*Creatine* never in *putrid* urine)—facts which clearly indicate that *Creatinine* is the derivative. Yet how confidently was this substance, for a season, bruited as the NUTRIENT-ESSENCE of beef!—ready made nourishment—and the solid fibre cast to the credulous cats! Under the guise of beef-tea, or gravy soup, and commended as the at last discovered *Elixir vitæ*, gentlemen and ladies drank basins of *Excretive-soup!* The poisonous stimulus which it gave to the weakened system, was, as in the case of strong-coffee or alcohol, mistaken for strength! "This substance" (Creatinine), says MOLESCHOTT, "may be considered as decidedly *an excrementitious body, which has passed into that stage in the tissues themselves.* * The acid *peculiar to the flesh*, technically called *tyrosinic acid*, which is to be found in the muscles associated with lactic-acid, most probably belongs also to the products of regressive transformation." *Tyrosine*, says LEHMANN, is formed during the *putrefaction* of albumen, fibrin, and casein: formula C_{16} H_9 NO_5. †

Liebig's blunder.

Creatine.

As vegetal-food is rich in oxygen, its changes necessarily become an *internal* source of supply to the blood. ‡ Thus experience shows Vegetarian divers can remain longer under water than Flesh-eaters; and that Vegetarians do not suffer so severely from deficient ventilation as consumers of flesh.

§ 29. Here, then, it must be apparent, the flesh-eater has no advantage over the vegetarian as regards the albumen and fibrin of tissue—which is essentially the same in both kingdoms,—but in absorbing its juices, he adds to his own living system the *excrementitious* materials of the dead organism whereupon he feeds! Morbid reactions must be

* *Lehre der Nahrungsmittell* (Theory of Nutrition), § 25. Erlangen, 1853.

† "LIEBIG'S investigations," says LEHMANN, "constrain us to regard *creatine* as a PRODUCT OF EXCRETION."—*Phys. Chem.* i. p. 139.

‡ For example, where, for conversion into CO^2 (carbonic acid) and HO (water), 100 parts of muscle require 147 parts of extraneous oxygen, and Fat 202, starch only wants 118, sugar 106, and fruit-acids 83.

set up, and unnatural wasting excitement and oppressive labor follow as a matter of course. It is precisely this fact which explains the great exemption of fruit-eaters from *zymotic* and infectious disorders—the ferment of the floating poison finds no adapted factor for development in the pure and thoroly oxygenated blood of the Vegetarian.

§ 30. The multiform and perpetually increasing diseases of our people, and their strange complication, are exactly what we might expect from such universal habits of diet, and the concomitant, and *partly* consequent, indulgence in strong-liquors. (See § 39.) In other words, blood-corruption united with constant excitement of the nervous system, must result in constitutional proclivity to disease, in strange and varied lesions of the internal organs, and in sudden stagnation of the vital-powers.

A new disease of stimulation.

Take, by way of example, that new, terrible, and increasing disorder, the *bronzed or copper skin*—a disorder which, in every instance known, has terminated fatally. It is associated with disease and tubercle of the Supra-renal-Capsules—which, if not also blood-perfecting organs, are undoubtedly in close relationship with the nervous system thrö the solar plexuses. Here is the last case we have met with.

"A Lady, aged 58, of remarkably tall and robust frame. Her habits of life were peculiar, especially in her partiality for fat, and *her abstinence from farinaceous diet.* She was also a considerable consumer of porter and wine." *

Up to January, 1855, she believed that her diet and drink did her good: and her acquaintances would refer to her as an undoubted illustration of 'good-living.' But mark the sequel—observe the ravages which had been slowly but surely effected, during the course of years, in that robust frame!

"She first consulted me in Aug. 1855. Her chief complaint was debility: appetite bad: nausea and pain in the stomach. Her hands resembled those of a creole. I examined the heart, lungs, and the urine: but the only conclusion I could come to was, that I had a case of general decadence of the digestive powers from over-stimulation, with fatty degeneration of the heart. She made no satisfactory progress; and the bronzy discoloration deepened. I informed the friends of my conviction of its fatality. The *post-mortem* exhibited the heart in a state of fatty degeneration: the liver softened: stomach dilated, coats atrophied and destitute of rugæ: kidneys congested and flabby: the supra-renal-capsules enlarged, and filled with *tuberculated deposit* of various consistency; some portions almost cartilaginous, others of the fluidity of scrofulous pus."

§ 31. The inference is unavoidable from the facts detailed—that

* Dr RANKIN in *Ass. Med. Journal*, Aug. 9, 1856.

Premature bankruptcy.

while Nature seeks to avert disease and œconomize vital-power to uses beyond itself, by reducing the REGRESSIVE COMPOUNDS of the blood to a *balanced minimum* both as regards their sum and the time of their circulation, the flesh-eater establishes a *maximum* which cannot fail to clog and overwork the excretory organs, to impair the general nourishment, and by continual morbid excitement to exhaust the constitutional power of the system.

VI. *The Æconomics of Nature.*

§ 32. There is nothing in the organized tissue of the animal which was not in the plant—*save the excrementitious elements of itself.* 'All flesh is grass'—and something more: otherwise all grass would be flesh, which it is *not*. The three kinds of Aliment—1, the inorganic; 2, the fat constituents of fuel and organization; 3, the nitrogenized or plastic nutrient substances—are originally contained in the products of the field and orchard. To procure them thrö the blood and intercession of an ox or a hog—after months of feeding and fattening, during which the body of the beast has been, many times over, burnt-up and dissipated in the processes of combustion and waste necessarily involved in eating, breathing, and living—is certainly a circuitous and wasteful method, which would demand very weighty compensations to vindicate it. As a matter of clear calculation, to select a medium example, it can be shown that £3 worth of wheat would restore as much the waste of the body as £12 worth of English beef.* By adapting

Flesh wasteful.

* TABLE OF COMPOSITION OF FOOD.

100 lbs of each of these articles of diet.	CONTAIN		SUPPLY TO BODY.			
	Solid Matter.	Water.	Flesh-forming principle.	Heat-forming principle.	Ashes.	Starch excluding wax' fat, etc.
	lbs	lbs	lbs	lbs	lbs	lbs
Turnips ...	11.0	89.0	1.0	9.0	1.0	—
Red Beet Root	11.0	89.0	1.5	8.5	1.0	—
Carrots	13.0	87.0	2.0	10.0	1.0	—
Potatoes	28.0	72.0	2.0	25.0	1.0	—
Butcher's meat	36.6	63.4	21.5	14.3	0.8	—
Bread (stale) ...	76.0	24.0	10.7	64.3	1.0	—
Peas	84.0	16.0	29.0	51.5	3.5	38.8
Lentils	84.0	16.0	33.0	48.0	3.0	39.0
Barley-meal ...	84.5	15.5	14.0	68.5	2.0	64.0
Wheat-meal ...	85.5	14.5	21.0	62.0	2.5	66.0
Beans	86.0	14.0	31.0	51.5	3.5	37.3
Sago	88.0	12.0	3.4	84.0	0.6	—
Maize-meal ...	90.0	10.0	11.0	77.0	2.0	66.8
Oat-meal ...	91.0	9.0	12.0	77.0	2.0	37.0
Rice	92.4	7.6	8.4	82.0	2.0	86.0
Onions	—	93.7	7.5	—	8.5	—

the productions of our soil to the wants of man as indicated by Instinct and demonstrated by the analyses of Science, we could support an increasing population in comparative affluence, add prodigiously to the industrial wealth of the country at large, and give at once a new direction and a vast impetus to its agricultural improvement.

§ 33. MOLESCHOTT, who confounds a vegetal-diet with a diet of green-vegetables!—concedes, again and again, both the positive and negative basis of our plea.

Moleschott's admissions.

"The legumes," says he, "are *superior* to meat in the abundance of solid constituents which they contain; and while the amount of *albuminous* substances may surpass that in meat by one-half, the *constituents of fat*, and the *salts*, are also present in a greater abundance. ... Meat, *bread*, and *leguminous* seeds are serviceable in supporting the *nutrition of the brain*. ... Blood, flesh, milk, etc., are *abundantly formed* by peas, beans, lentils; and for this reason they are the comfort of poor-people, to whom flesh is so seldom and so sparingly allotted. ... Potatoes, combined with a certain proportion of *white-of-egg* [albumen], becomes as nourishing as milk or flesh. ... The growing-youth should be provided with cooling aliments, fruits and vegetables, water and acidulated beverages; and if then his mind is sufficiently occupied, and he takes abundant recreation in the open air, the *tissue-change* will harmoniously promote the proportionate development of every part."

§ 34. He even recognizes the evil of stimulants, both in general and particular. "An excess of stimulants is more dangerous than a superabundance of nutriment. ... The Roe, leading in the woods a free and active life, takes in a greater quantity of oxygen, which transforms the nitrogenized bases of the tissues into *creatine*. ... The excitation of the activity of the heart, observed after a copious meal of venison, is due not only to the abundance of albuminous matter in the venison, but also probably to the proportionately large quantity of *creatine*. ... The sexual impulse is more excited." *

VII. *The Ethics of Diet.*

§ 35. It is time we ceased to consider this question from the low ground of chemical-equivalents and exchanges: or from the standpoint of the Prize-show or Cattle-market. It is not how much fat and flesh a given fodder will enable us to lay upon the carcase of a *beast*, but how shall we best subserve, by our regimen, the great moral and social

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There is probably but one or two things which can be referred to as a *Model food;* such as the Grape in a temperate region, and Mother's milk. Accepting this last as a standard, as regards its solids, then a near approach to a *perfect diet* would include the following parts and proportions:— Perfect diet.

Albumen 10; Fat 10; Sugar 20; Salts 0.6 of a part.

* *Theory of Nutrition*, § 58. § 42. § 97. § 89.

purposes of *Human-life*? We do not live to eat, but eat to live: and, therefore, whether we eat or drink, we are bound to have some reference to the honor of the Divine Law and the happiness of our fellow creatures. The crowning organisms of man are the sensorium and the brain—the seats of consciousness and of the Moral Will: and the point to be determined is, what relation does a carnivorous diet bear to this momentous and mysterious part of our being—the very 'Holy of Holies' in this Temple of Life?

§ 36. It cannot be denied that the sight of slaughtered and quartered beasts, nay, the very scents of the *abattoirs*, are revolting to the unsophisticated taste. "Animals living on plants," says MOLESCHOTT, "*not unnaturally* convey the impression of a greater purity upon our *fastidious senses*;" and no doubt, could we look apart upon ourselves, we should desire to retain the same associations in connexion with our own diet. "Whether food has a yet higher influence," says FORSTER, in his dissertation on the utility of the bread-fruit tree, "whether mind and heart may directly or indirectly be tuned by it, will be left to our grandchildren for discussion. *We only know that gentleness, love, and sensibility of heart, are the prominent traits of the people living on bread-fruit.*"* The instinct is more than justified by the fact. But there is another phase of the experience. "If we consider," says MOLESCHOTT, "that even now the Pastoral tribes are the gentlest,—that the character of the beasts of prey is softened by getting accustomed to a mixed or vegetal-diet,—why should it sound fabulous if we connect the noble tenderness of heart and pacific meekness of the pastoral tribes, with the milk and the fruits whereon they subsist?" †

Forster and Moleschott.

§ 37. It is an established fact, familiar to observation, that not only does beef with its abundant *creatine* (or gravy) primarily *excite* the heart and vascular system at large, but it exercises, secondarily, a very sensible *narcotic* effect, disinclining to mental effort, and inducing an almost irresistible drowsiness. This is evidently a frequent condition of the Carnivora, but one hardly indicated as proper to man. What *must* be the effect of such a morbid, and necessarily excessive stimulus, upon the blood and brain of man? ‡ One fact will serve to show the

* See our *Paradise of the Pacific* (Works, vol. i) for the beautiful history of the Pitcairn Islanders.

† *Theory of Nutrition*, § 71.

‡ Experiment will show, in 9 cases out of 10, that a generous dinner of Flesh *indisposes* for mental efforts. But if literary men persist in their pursuits, under the stimulation of alcoholics and of flesh-suppers conjoined, a most fatal disturbance of the mental balance will sometimes follow. The late HUGH MILLER is a melancholy illustration. Several of the deceased contributors to *Punch*, illustrate the influence of flesh-eating and wine in breaking down and paralyzing prematurely the organic system.

essential-connexion between material conditions and general social departures from the normal state. QUETELET has fully shown that the stimulation of the summer season is always attended by a large increase of Insanity and Crime: a circumstance only explained by the supposition, that where there is a proclivity to passion, the augmentation of a vital-stimulus will destroy in many the balance of self-control. He has also demonstrated that age represents an important factor in crimes of a certain kind: that factor is but another form of the preceding condition:—namely, *the summer season of life*, when the brain is most matured. (The maximum for men is the 25th year.) Thousands of our people whose passions are morbidly excited by stimulants, beyond all self-control, and who pass thrö society like Plague-ships, carrying disaster and pollution in their path, might, under the mild and beneficent *regime* of Vegetarianism, postpone the development of erotic impulses to a later age, when discipline and culture would be adequate to rule and direct them aright.

Quetelet.

§ 38. The most certain, positive proofs exist of the direct connexion of flesh-diet with some of the saddest and most incurable affections of the nervous-centres. We will go to New Zealand for an illustration: citing the admirable papers of Dr ARTHUR THOMSON on the Diseases of the New Zealanders. *

"Far elevated in virtues, altho debased by many vices, above other races. ... The great prevalence of diseases of the lungs arises from *badly-ventilated* houses, insufficient clothing, etc. ... Europeans are as liable to affections of the liver as in England. I attribute the *rarity of the disease* amongst New Zealanders to their not using any fluid containing alcohol, the injurious effects of which, when taken to excess, or in habitual moderation, on the functions of the liver, are now well known.

Thomson on the New Zealanders.

"*Diseases of the Stomach and Bowels.* The exciting causes are excess in eating food, often bad in itself (as maize and potatoes in a state of decay) and badly cooked, long abstinence from food, cold, exposure, wet. *Rheumatism* is common."

We give these particulars to show that their exemption from other disorders cannot be ascribed to their generally happy circumstances.

"*Diseases of the Brain.* The small number of cases of apoplexy, I attribute to the New Zealanders not using wine, spirits, or beer as common drinks, *the use of a vegetable diet*, etc. ... Paralysis, the result of cerebral disease, is almost unknown. ... *Insanity and idiocy are rare.*

"The exemption of the New Zealanders from *epilepsy* is worthy of the most particular attention. From the absence of epilepsy, we may infer that the *proper treatment for that malady is to be found in the use*

* *Medico-Chirurgical Review*; Oct. 1854. p. 461 et seq.

of a vegetable diet, without any stimulants. ... Many of the attacks in Great Britain arise from eating and drinking too much. ... It may be said that the Polynesian race are little liable to disease of the brain, but this is not the case; for among the Malays in Ceylon—a similar race—apoplexy, epilepsy, mania, paralysis, and delirium tremens, are all to be seen; but if they do not drink alcohol [which they *do* in toddy], they stupefy themselves with opium.

"The exemption of the New Zealanders from *Dropsy* and *Kidney* disease, may be chiefly attributed to their abstinence from spirituous liquors; and part to *Scarlatina* being as yet almost unknown among them."

Such facts are proper to remind us that our sufferings as a nation are self-inflicted—not the result of some inscrutable Providence, but the penalty most wisely and justly attached to our wilful persistence in evil.

Favorable to other temperance.

§ 39. Amongst the ethical reasons for preferring vegetal to animal food is the fact, that while a free flesh-diet *tends* to intemperance in liquor, the use of vegetal-oils, or the *constituents* of fat (starch and sugar), give a distaste for alcoholics, since the two substances would retard each other's combustion. Vegetarianism, therefore, is a physiological guarantee of fidelity to Temperance. *

§ 40. The intimate bond which exists between the food, the blood, the nerves, and the brain, is never questioned by reflecting men. Nay, even physiologists will admit the truth of our theory in relation to certain persons or classes, but make some door of escape for men in general! They cannot be made to see the absoluteness of a tendency, or the essence of a principle.

The fact of the relation between *creatine* (or gravy-essence) and *caffein* has been already stated: and to show how impossible it is to rank such substances amongst nutrient matters, we will give Professor LEHMANN'S experiment:—

Coffee.

"Five persons, one of whom was Prof. BUCHHEIM, now at Dorpat, after taking from 5 to 10 grains of this substance, *were unfit for any business the next day.* †

"It may be assumed that Nature would not suffer substances even more highly nitrogenized than creatine, as creatinine, to *escape thrö the kidneys*, if they could be employed to further advantage in the organism; since we find so careful a providence over recognized nutrient matters, as for instance, albumen, etc., that even in disease they are only rarely found to escape with the excreta."

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* "Those who take much fat, *butter or oil*, cannot take wine, and feel *no desire* for it."—Prof. GREGORY'S *Organic Chemistry*. 1852.

† *Physiological Chemistry*, vol. i. p. 142.

§ 41. That food of an exciting character, or improper kind, beclouds the intellect and depraves the disposition, is generally admitted in reference to *peculiar* temperaments: but how is it that men do not perceive, that all persons have fundamentally the same physical susceptibilities and proclivities to depravation—and that this 'peculiarity' simply expresses a prominent degree of a common quality? It has been sufficiently shown that flesh-food, from its very nature, contains in itself, and creates and retains in the system, a large amount of obstructive and regressive-matter. Let MOLESCHOTT explain how this operates on the nutrition and functions of the brain:—

Moleschott on stimulation.

"The limited size of our lungs, and the definite range of our movements, restrict the power of the change-of-matter. If man introduces *more than he excretes*, the tissues become over loaded, endangering their activity,—fat is collected beyond the normal quantity which the oxygen should consume,—*and the albuminous substances and salts* assume a *fixity which at once enfeebles the intellect and destroys the pleasure and power of thought*, diminishing at the same time the strength of the muscles and the inclination for movement.

"The more vivacious the disposition, the more readily is the man excited by stimulants. With individuals of this habit, too nutritious or *exciting-food* is to be avoided, because it increases their nervous irritability. *Vehement, passionate natures become still more ardent from partaking of game, beer, wine, spirits, etc.* By these more fermenting-aliments the circulation is accelerated; *the tissues, especially the brain, are overladen with blood.* This heat is moderated by cooling aliments and beverages. FRUIT AND VEGETABLES, therefore, with lemonade and similar drinks, are *more advantageous* for irritable constitutions." *

§ 42. These principles apply with increased emphasis to the diet of Woman—woman, our companion and civilizer—but more especially to woman in her holy character of Mother.

The Mother.

"It is no empty prejudice to state,—nay, it is a real belief in the general prevalence of a demonstrated natural law,—that the nature of the mother is communicated by the milk to the child. And there is no thought more natural than the belief, that on the breast of its mother, the infant may imbibe, together with the milk, her very nobility of soul, with the love which devotes that food to the most sacred uses, and fastens still more strongly around the feeble child and the tender mother the ties of their endeared relationship." † Let Chris-

* *Theory of Nutrition*, § 97.

† *Idem*; § 95. A simpler diet, in economizing the labor of woman, would free her from the drudgery of "fattening household sinners," and leave her more of leisure to be devoted to the instruction of her children and herself. The *Cooks* of England are hardly dealt with, tho no Hood has yet given us the 'Song of the Spit.'

tian mothers keep pure the fountain of life, and they will be rewarded by the health and purity of their offspring.

§ 43. Without exposing ourselves to the charge of sentimentalism, we may be allowed to refer to the needless and systematic slaughter of our animated fellow-creatures. As the fields advance, the forests must recede: the higher good justifies the infliction of the evil of death; just as the old generation must retire for the tenancy of the new. It would be another thing, however, if the young, *by choice*, put away the 'old-people'—as some Indians are said to do—a thing indicating, or tending to, hardness of heart. If the Lion is in your path, by all means kill it—if you can—but do not set up the life of Mr GORDON CUMMING as that of the 'model-man'—do not attempt to defend the frivolous fallacy, that Lions exist *for the sake* of sportsmen, and are therefore to be *perpetuated*. Butchers have been called 'the helots of civilization': but while we admit the helotism, we may be suffered to doubt the civilization, and to regard the fact as a mark of barbarism not yet erased. Without stopping to defend the 'rights' of 'dumb-driven cattle'—tho rights they have—we object to beastly slaughter and all the horrid paraphernalia and adjuncts of the system, *for the sake of Man himself*. It is a sort of practical education which tends to blunt our finest feelings and to lower the æsthetic taste and moral tone of all connected with it. This was strongly expressed in a sentence ascribed to PYTHAGORAS:—"He that has hardened himself by killing a sheep, will with less reluctance shed the blood of a man."

§ 44. And at this point we close our brief but earnest Plea for the primitive Food of Man,

Thomson.

> While yet he lived in innocence, and told
> A length of golden years,—unflesh'd in blood,
> A stranger to the savage arts of life,
> Death, rapine, carnage, surfeit, and disease,—
> The LORD, and not the Tyrant, of the world.

Starting in search of the regimen which would best promote the sound-mind in a sound-body,—examining into the authority and significance of Nature's testimony,—carefully consulting the archives of a broad and varied experience,—analyzing the conditions and laws of Diet in their multiform aspects,—observing the histological methods of Nutrition and the contrasted Pathological symptoms,—entering into the æconomics as well as the character of supply and demand,—and, finally, pursuing the relations of food to the ultimate purpose and highest aspirations of human life,—we come to the clear conviction, not only that Vegetarian Regimen is compatible with bodily-strength and mental-vigor, but that a return to the normal-diet of mankind,

> "Woven with sunshine and etherial fires,"

would, *par excellence*, be a return to that which is most consonant with the greatest amount of enduring toil, with the deepest reach and clearest perceptions of the human intellect, with the highest purity of moral feeling, the utmost serenity of temper, the completest mastery of passion, and, by consequence, accordant with the truest development of Christian feeling, and the most permanent Civilization which is possible to the nature of Man.

ILLUSTRATIONS.

It is almost superfluous to add examples of the experiential results of Vegetarianism, in regard to varying climate, labor, circumstance, and age, but we have not seen the following published in any accessible work, and therefore give them as they have turned up in our reading:—

EGIDIUS GIRS, in his *Swedish Chronicle* (1581), observes upon the obstinate defence of Wesenberg by the Russians—"Their valor in defending fortified places arises from their being habituated to rough work, while few things are needful to their subsistence, such as *flour*, *salt*, and *water*."

PHILIP BALDÆUS, minister of the Word of God in Ceylon, in his *Description of the East India Coasts of Malabar, etc.*, (published at Amsterdam, 1672, and London 1703), observes in regard to the habits of the Dutch in the Indies as follows:—"Strong liquors are not much used by the *wiser sort* in the morning. It has been found by experience that *cauwa*, or coffee, increases the gall, and *chocolate* nourishes too fast, whereas *tea* is much more moderate in its nature, notwithstanding which its immoderate use hinders the concoction of the stomach (especially taken after dinner), which is the reason the Chinese never take it after meals. I have found by experience that four or five cups make one light headed" (p. 660). Hindoos.

"The *Brahmans* are, for the most part, men of great morality—sober, clean, industrious, and obliging—and *very moderate* both in their eating and drinking. They use no strong-liquors. If you tell them of the Christian liberty in victuals and drink, they reply, that as the essence of Christianity does not consist in eating and drinking, so *they did not feel themselves obliged to feed upon such things as are contrary to their nature and education*, being from infancy used to much tenderer food,—*which agrees best with their constitutions, and makes them generally live to a great age*" (p. 814).

Colonel PINKNEY, the American, in his *Travels* (London, 1814), says of the Diet of the French Peasantry:—

"*Bread* and *fruit* is the constant summer dinner of the peasantry of the Loire" (p. 242). "They are *temperate*, unceasingly gay, and sufficiently clad" (p.247) French peasantry.

Of the Touraine peasantry he says:—

"Average daily wages, 1s. They are allowed 3 *pints* of the [weak acid] wine of the country" (p. 297).

"In Ireland, how many robust bodies are nourished solely on *milk and potatoes:* now chesnuts and grapes, and turnips and onions in France, are what potatoes are in Ireland. The breakfast usually consists of bread and fruit, dinner of bread and an onion, his supper of bread, milk, and chesnuts. Sometime s a lb of meat may be boiled with the onion, which, with management, will go thrö the week" (p. 299).

"The abundance of fruit gives an air of great plenty. The *health of the peasantry may perhaps in good part be imputed to this vegetable abundance.* It is a constant maxim with physicians, that those countries are most healthy, where, from an ordinary laxative diet, the body is always kept open. Half the diseases in the world originate in *obstruction*" (p. 373).

In contrast with this, we make an instructive extract from an article on 'The last Census of France,' in the *Edinburgh Review* for April 1857:—

"It is however certain, with the exception of some departments which are suffering from exceptional causes of distress—such as inundations or failure of crops—the general aspect of the French rural population [as to comfort] shows a marked improvement in the last 20 years. Every new house is better built and better arranged than the old cottages. The blue linen blouse is not the only garment of the peasant, winter and summer, but it is worn over good woollen clothing; the bread of the common people is whiter and purer [*not therefore better*], and *the consumption of meat increases.* Five and twenty years ago in a small market-town of Normandy, which we have sometimes visited, there lived but *one* butcher, who earned a precarious subsistence from the neighboring gentry; in the same town there are now *nine* persons living by the sale of meat. The same progress is even more striking in Touraine, Picardy, and the environs of Paris. But this progress in the well-being [flesh-eating] of the community has not led to any corresponding increase in the population. On the contrary, whether the doctrines of Mr MALTHUS are followed or not in that country, *some such check as he contemplated seems powerfully to operate against the rapidity* of increase; and the more the advantages and luxuries of increasing wealth are felt and enjoyed, the less disposed are the French to meet the demands of numerous families" (pp. 348-9).

C. H. SCOTT, in his recent *Travels in the Black Sea*, observes:—"We particularly noticed the power of endurance, while subsisting on scanty fare, of our Volga boatmen, who worked hard day and night, while living literally on *black bread, salt,* and *water.*"

In conclusion, we shall only observe that the preservation and extension of human-life is the gravest of all problems in Social Œconomy, while the removal of the causes of disease *within* the body, tho often ignored by noisy sanitary reformers, is the most important of all the branches of Sanitary Law. We commend to the sincere Patriot and simple Christian, a pregnant passage from the *Census Report*:—

"As there is no apparent reason why the mean 'lifetime' in England should be 40 years, and as it is found to range in extent, under different circumstances, from 25 years in Liverpool and Manchester, to 45 years in Surrey, and *in other*

localities to a number of years still higher, there is good ground for believing that it may gradually be raised yet nearer to the complete *natural* lifetime. The way is not closed to great and immediate ameliorations; but as it has pleased the Author of the universe to make the food of mankind chiefly the product of labor, their clothing of skill, their intellectual enjoyments of education, their purest emotions of art—*so health and the natural lifetime of the race are, in a certain sense, evidently to be the creation of the intellect and the will;* and it is only with the observation, experience, science, foresight, prudence, *and decisions of generations of men at command, that the battle of life can be fought out victoriously to the end.*"



ON LONGEVITY.

"THE INSTANCES OF LONGEVITY ARE CHIEFLY AMONG THE ABSTEMIOUS."
DR ARBUTHNOT.

PRETENTIOUS philosophers, fond of paradoxes, have lately contended that the tendency to long-life is a peculiar and *inherited quality*, quite independent of diet and temperance!—and have exaggerated and emphasized, in support of their hypothesis, the cases, 'few and far between,' of centenarians who have been dissipated or drunken. Another school, the scripture verbalists or fatalists, as if to show how extremes will sometimes meet, allege that man's days are *fixed*, and that he must die when his time comes—which last is a truism in words, and a falsity in application. We hold, with the ancients, that while a Sinner cannot '*prolong* his days,' he must, in sinning, materially shorten them (Eccles. viii. 12);—that the promise of long-life is to the *obedient* (Exodus, xx. 12);—that a man's time for death, is when the latent powers of the constitution are exhausted, and therefore that the time when the last cheque drawn upon the Bank-of-Life *shall* be dishonored, depends essentially on what has been drawn before;—that whatever in the psalmist's days might have been the average of life, yet '*by reason of strength*' (xc. 10) others did far exceed that average;—and hence that whatever decreases vitality, must diminish the chances of longevity. Long-life is no more a peculiar quality than a sound Constitution—is indeed the *manifestation* of *that*, which was the attribute of our common Father, and the original inheritance of all his children. That quality has become rarer, just in PROPORTION as men have *departed* from the aboriginal habits and laws of life; and may therefore be gradually recovered and extended by a *return* to them.

Theories.

We agree with M. FLOURENS, if not in his alleged physiological law, at least in many of his miscellaneous remarks, as, for example, when referring to 100 years as the normal duration of the life of man.

Flourens.

"Few men, it is true, attain that great term; but how few men are there who do what is needful to attain it! With our way of living, our passions and vexations, *man does not die*—he *kills* himself. *

"To prolong life, that is to say, to make it last as long as the *constitution* will bear, there is a means, and a very certain means, and

* *De la Longevité Humaine:* par P. FLOURENS. Paris, 1854.

that is, *to live soberly*—by which I mean, a well-ordered, well-conducted, reasonable life."

That some persons, inheriting a vast fund of the reserve or radical force called a Strong-Constitution, should live long *in spite* of a profligate expenditure, proves nothing against the theory of sobriety. If they live to be 100, or 120, the likelihood—nay, the certainty is—that (accident apart) they would have survived 30 or 50 years longer, and enjoyed, in the previous epoch, a fuller, purer, and *intenser* life. The value of temperance as an aid to Long-Life, has been noted in the remotest periods, but by none more emphatically affirmed than by the most observant of men and the greatest of poets—SHAKSPERE. ADAM, in 'As you Like it,' at fourscore is made to say—

Shakspere.

> Tho I look old, yet I am strong and lusty;
> For in my youth I never did apply
> Hot and rebellious liquors in my blood;
> Nor did with unbashful forehead woo
> The means of weakness and debility:
> Therefore my age is as a lusty winter,
> Frosty, but kindly.

From perusing many hundreds of notices of extreme long-life, we arrive at the conclusion that in 8 cases out of 10, they were examples of plain and active living, and *nearly one half of them* instances of Teetotalism or Vegetarianism.

I.

We present some facts as to the absolute *numbers* of individuals of ages transcending a century, in order to illustrate the 'possibilities' realizable to the race in general, by the gradual obedience to the inflexible *conditions* of Long-life.

Illustrations of the numbers of centenarians.

SPAIN. "*Asturia.* Altho subject to such a variety of endemical diseases, few countries can produce *more instances of longevity.* MANY live to the age of 100, some to 110, and others *much longer.* The same observation may be extended to *Galicia*, where, in the parish of St Juan de Poyo, 1724, the curate administered the sacrament to 13 persons, whose ages together made 1499 years, the youngest of these being 110, and the oldest 127.

"But in Villa de Fofinanes, one Juan de Onteyro, a poor laborer, died in 1726, aged more than 146 years" (Cooke's *Geography*, ii. p. 667).

LAPLAND. "Their *common-drink* is water. Brandy is very scarce with them, but they are extremely fond of it" (p. 252).

"They live frequently to a great age, 80, 90, and 100 years, and *are able at this time of life to traverse the highest mountains* and most impenetrable forests: so that whenever they die, it is generally more from years than distempers" (p. 251).

In the diocese of Aggherus, in NORWAY, there were reckoned, in

1763, not less than 150 couples who had lived together upwards of 80 years. Of these 300, therefore, most of them must have been upwards of a century old—many older. In 1761, out of 6,929 persons buried in the district of Christiana, no less than 394—or 1 in 18—had lived to 90; 63 had reached 100; 7 were in their 101st year. In the diocese of Bergen, out of 2,580 deaths, 18 were those of persons who had reached 100 years; two were women of the respective ages of 104 and 108.

In RUSSIA, in the year 1801, out of 726,278 deaths, there were registered 216 of persons who had reached a century; 220 above that age; and 4 of 130 years old.

"The generality of the DANES," says the *Highland Physician*, in his celebrated Letter on the decay of the Highlanders (1750), "drink hard when they meet together to converse; but I take upon me to affirm, that not one of those Danes who make a common custom of sotting, ever see the age of 80; whereas their more sober countrymen *frequently* number 100 years of sound health and sense, and drop into the grave without pain or anguish, by the mere decay of nature."

Wherever we find the simplest-diet, we find, other conditions being the same, the greatest number of examples of long-life; and *vicé versâ*.

In FRANCE, according to the census of 1851, there were, out of a population of 36 millions, only 102 persons whose ages exceeded a century, or *one* person in 360,000. So much for French universal wine-and-coffee-drinking!

France compared with the U. States.

In the UNITED STATES of North America, there was, in 1850, exactly 2555 persons who had passed a century—or *one* in 9000. Here there are more drunkards, but far less *universal* drinking than in France. An Indian woman had passed the age of 140—another Indian had reached 125 years;—a Negress 111, and two others 110 each;—a Mulatto male 120;—*several* whites ranged from 106 to 114;—ALL in North Carolina. In Layfayette, Louisiana, a Negress had lived 120 years. In several States, persons, both white and black, had reached 110 and 115 years. There were about 20,000 persons, still alive, who were living at the time of the Declaration of Independence in 1776.

Our own Census of 1851, gives facts which sufficiently evince that the notion of the *old-age-power* in man being something occult, peculiar, or exceptional, is a member of the *fudge*-family of Fallacies.

In the whole of GREAT BRITAIN, containing 20,959,477 inhabitants, only 319 people are returned as 100 years of age and upwards. This is in the country of Beer and Spirit, *generally* and *constantly* consumed.

Britain compared with Ireland.

In IRELAND, however, where the masses of the people cannot drink constantly or generally,—where their propensity for whisky is gratified only *occasionally*, and very *rarely* as regards the country-districts—and notwithstanding they are under-fed and badly-fed,—but on

vegetal-food chiefly—we find, out of a population of 6,552,386, not less than 711 persons who had reached or passed a century. The oldest was 121. Out of the whole, Ulster furnished 214; Leinster 193; Munster 188; Connaught 116. Every one knows that the *Females* of Ireland drink much less than the Men—many rarely drinking at all.

Now mark the following result:—The persons in Ireland between 95 and 100 years of age, numbered 2000 (less 3), or 1 in 3,250 of the population—*the females having a vast majority*—whereas in the whole of Great Britain, we find of that age only 2,033—or 3 dozen more—being at the ratio of less than 1 in 10,000. Of the 711 centenarians in Ireland, 219 were males and 492 females.

It is worth consideration whether the superior average age of Women in England as compared with Men (47 to 44), is not explainable by the fact of their superior sobriety. They are weaker in body than men, and exposed to peculiar diseases and dangers, which is more than a set-off to the accidents and wear and tear incident to the life of Men.

Another fact, or rather comparison of facts, will serve to show that old age is not positively and generally dependent upon some *peculiarity* inherited by the individual. In Denmark, for example, out of 1000 deaths, only 187 are of persons above 70 years of age; in the Färoe Isles, among the same number, 349 have passed that limit. In Denmark, the annual mortality is 1 to 41, in Färoe, 1 to 64. These people are of the same race: but the Färoese peasants are exempt from many evils which operate in Denmark, and amongst others, the power to purchase brandy, and from the temptation to drink it; which happens only on festive occasions.

II.

We will next give examples of the dietetic *habits* which have characterized some notable centenarians. Under this head we include illustrations of the power of individuals to *prolong* their life by œconomic means, as well as several examples of Long-life *suddenly cut off* by intemperance.

B. C.

Moses, the Jewish lawgiver, was in Egypt and the Wilderness a water-drinker. At 120 years of age "his eye was not dim, nor his natural force abated." 1600

Epimenides, the poet, seer, and priest—above 100: some of the ancients say, 154. 590

Herodicus,—physician and gymnast—104. Cured his patients by diet and exercise. Was the Tutor of Hippocrates.

Gorgias, of Sicily—105. At an advanced age he was sent as an ambassador to Athens, to solicit protection for his colony against the threatening power of Cyracuse. His oratory even at that age was very powerful. See *Plato.* 380

Zenophiles, lived at Athens, before Christ, 380, and was in perfect health and great repute as a musician, in the 105th year of his age. He was a disciple of Pythagoras, a water-drinker and vegetarian. (Pliny, vii. 50.) Lucian gives the account of his longevity from his pupil Aristoxenus, the musician, a philosopher of the Peripatetic school, and disciple of Aristotle.

B. C. 357 Hippocrates, the great physician—age about 104. His personal habits may be gathered from his *cautious* use of vegetal physic, which induced the after reproach that he suffered his patients to die by doing nothing. *Diet* and *regimen* were often his sole remedies. He was the author of the celebrated aphorism—"Life is short, Art is long."

Isocrates, the Athenian orator—99. This patriot wrote much of his 'Pan-Athenæai' in his 94th year; and seemed likely to live far into his second century, when, in grief for the subjugation of his country after the battle of Chæroneia, he made away with his own life.

Apollonius, of Tyana—100. A Pythagorean, and abstainer from flesh and wine. Tho his *Life* by Philostratus is full of marvels and fables, he was undoubtedly a man of singular ability.

A. D. 221 Claudius Galen, born at Pergamus, A.D. 131. Scholar, critic, and physician. Born with an infirm constitution, he yet, by a regular plan of living, attained to the age of 90.

St. Anthony the Great—105. Lived 80 years in the wilderness, on bread, herbs, and water.

Paul, the hermit—115. Spent 100 years in the desert, living for the first 40 on dates and water, and for the remaining time on bread and water.

356 Epiphanius—104. Lived austerely, on bread, herbs, and water.

500 Attila, king of the Huns—124. He was hearty and strong until the day before his death, when he married a beautiful princess; and died the day after *from excess of wine.*

In the *Travels of Ibn Batūta,* several remarkable examples of long life are found amongst the oriental water-drinkers.

1330 "In Erzeroom I saw one of the *Society of Youths,* whose age exceeded 130 years. He was still in possession of all his faculties, and could walk wherever he wished.

"At Kastamūnia, a large city, I saw an aged Sheikh, whose age amounted to 162 years.

"In Sivastan I met the aged Sheikh Mohammed of Bagdad, who told me that his age was 140 years.

"At Bakar I met the pious Sheikh Shams Oddin Mohammed of Shirāz. He was more than 120 years old.

In Sin Kilan (in China) a considerable personage was in that neighborhood who was upwards of 200 years old."

Luigi Cornaro, a noble of Padua—104. His fine portrait by Tizzian exhibits a handsome and most intellectual face, even at a patriarchal age. His errors of youth had apparently ruined his constitution irretrievably at the age of 36, when, with indomitable resolution, he reformed his life, and practiced a severe regimen, which restored him to health. He wrote an able treatise on a sober Life at the age of 83, and a famous letter on Long-life at the age of 95. Addison, in the *Spectator*, refers to him as "the most remarkable instance of the efficacy of Temperance." Cornaro records that he always *fell-off* in health and vigor as the wine grew *old*—i.e. more *alcoholic*,—and the *natural* salts of the wine became precipitated. Died A. D. 1556

Thomas Parr, of Winnington, Shropshire—died *prematurely* at Westminster (from a short use of rich food and the *best* wines of the court) * at the age of 152 years. Born in 1483, he lived in the reign of ten kings, and died November 15th, 1635. At 80 he married his first wife; by whom he had two children, who died young. At 120 he 'fell in love' with, and married, Catharine Milton, a widow, by whom he had issue. Ten years later he did penance in the church for the affiliation of a child to him. Taylor, 'the Water-Poet,' has humorously described his habits. 1635

> The Cock his night-clock; and till day was done,
> His watch and chief sun-dial was the Sun.
> He was of old Pythagoras' opinion,
> That green-cheese was most wholesome with an onion;
> Course meslin-bread, and for his *daily-swig*
> Milk, butter-milk, and water, whey and whig;
> *Sometimes* Metheglin, and, by fortune happy,
> He *sometimes* sipt a cup of ale most nappy.
> Cyder or perry, when he did repair
> T' a whitsun-ale-wake, wedding, or a fair;
> Or when in Christmas time he was a guest
> At his good landlord's house amongst the rest;
> Else he had little leisure-time to waste,
> Or at the Alehouse huff-cup ale to taste.
> Nor did he ever hunt a Tavern-fox.
> Thus living within bounds of Nature's laws,
> Of his long-tasting-life may be *some cause*.

He generated a long-living family. His son lived to be 113; his grandson, 109; and his great-grandson, Robert Parr of Kinver, Bridgenorth, died in 1757, aged 124. John Michaelstone, another grandson, lived, 'by *great* temperance and exercise,' to be 127.

* His *prescriptive*-pills of Long-life were composed of three elements.
1. "Keep your head cool by *Temperance*.
2. "Your feet warm by *exercise*.
3. "Rise early, and go soon to bed."

In London, says an old chronicler, he drunk of the best wines, *upon which there could not but soon ensue a dissolution*.

Died A. D.

1652 Dr William Mead, of Ware—near 149. Of great sobriety.

1656 James Bowles, remarkable for regular living—152.

Patrick Makel Wian, Minister of Lesbury—the age of 111. Had new teeth and hair at 109. Describes himself as "of a slender mean habit of body; my diet has ever been moderate; nor was I ever accustomed to feasting and tippling. Hunger is the best sauce, nor do I ever feed to satiety." A native of Galloway.

1660

Kentigern, surnamed *St Mongah*, from whom the famous well in Wales is named—age 185. Spotiswood (1610), in his History of the Church in Scotland, says that the saint never tasted wine or strong-drink, after he came to years of *understanding*.

Henry Jenkins, a fisherman—lived to 169. Born at Ellerton-upon-Swale, Yorkshire, 17th May, 1500. Family remarkable for longevity. Sister lived to be 125. Grandmother, 138. Was fond of Nature, and admired flowers and plants. For diet, preferred herbs, fruits, etc. Occasionally took cold meats and salads, and a little hopped-beer, then newly introduced. "Water was, however, his favorite beverage, and he usually drank half a pint of it when he first arose." Used flannel and warm clothing. Swam rivers at the age of 100 and upwards. Rose early. Never ill until a year or two before his death. In his 160th year, Charles II sent a carriage for him to take him to court; but he preferred to *walk*, which he did. The King enquired by what means he contrived to live so long? He replied—"*Temperance and sobriety of living* had been the means, by the blessing of God, of *lengthening* his days beyond the usual span." He had a pension allowed him, which he enjoyed for nearly ten years. The monument erected to his memory at Bolton church, near Catterick, records "a Patriarch's health and length of days, to teach mistaken man these blessings are entailed on Temperance, a life of Labour, and a mind at Ease."

1669

Jacqueline Fauvel, of Coutance, died of a fright in his 121st year.

1690

Francisco Lupatsoli, "the Venetian Consul at Smyrna, lived 113 years, and had by his wives and other women about 50 children. He drank nothing but *water* and *milk*, sometimes a small sherbert; his usual diet was small soups of flesh, sometimes of bread, water, and figs. He saw at that age, or near it, without spectacles, and could hear well. He drank no manner of tea, coffee, or chocolate, *nor any fermented liquor*. He went upright. He had some new black hairs on his head, and Mr Ray, the English Consul there, told me || that he saw a tooth cut in his upper gum."

|| This and the 4 following cases related by Dr Baynard, 1706.

Richard Lloyd.—"Mr John Bill related too, that Richard Lloyd, born two miles from Montgomery, was aged 133 within two months, a strong, straight, and upright man, wanted no teeth, had no grey hairs, which were of a darkish brown colour; could hear well, and read without spectacles; fleshy and full-cheeked, and the calves of his legs not

wasted nor shrunk, he could talk well: he was of a tall stature: his food was bread, cheese, and butter, for the most part, and his drink *whey*, *buttermilk*, or *water*, and nothing else; but being by a neighbor gentlewoman persuaded to eat *flesh meat*, and drink *malt liquor*, soon fell off and died. He was a poor laboring man in husbandry, etc."

"SETH UNTHANKE, of Bath—90. Used once in a week, or sometimes oftener, to go to a milk-house to fill a great pitcher of new *buttermilk*, but always kept it until it was sour, and then drank of that and nothing else all the summer months; the remaining part of the year he drank either water or *small* beer, tho he told me that in his youth he had *sometimes* drank strong drinks, but they *never agreed with him*. And he also told me, that not above 2 years ago he went from Bath to London on foot, in 2 days, and came home to the Bath again in 2 days more, and that he was then near 87 years of age, as may be seen by the Register. He is a straight upright man, without stooping, and of his great age moves wonderfully nimble. He has an ungrateful name, tho an honest fellow. He was born in Milfield, in Northumberland, in the year 1617, and was baptized in Kirk Newton. He has a brother living ten years older than himself. He has a sister living in Spittle 16 years older than himself. His uncle was 126 years old, when he died; a Pensioner to the Bishop of Durham." DIED A. D. 1690

JOHN BAILES.—"About two years and a half since, lying at Northampton, I desired my landlord to show me the famous old man so much talked of. When I came into his room I saw a short, broad-breasted old fellow sit down by the fireside on a low stool. I asked him how old he was? he answered me, that he was 128 and half. I asked him about a great many memorable things done near 100 years since; some whereof he perfectly remembered. He had a very strong voice, and spake very heartily and loud. He said (not designing it for a jest) that he should never die so long as he could breathe freely, which is no small happiness.

"This old man whose name was John Bailes, told me, that he had buried the whole town of Northampton (except 3 or 4) twenty times over. *Strong drink*, quoth the old man, *kills 'em all*. He told me that he never was drunk in his life, and that Water, small Beer, and Milk, was his drink, sometimes taken *per se*, sometimes mixed, and that his food was, for the most part, *brown Bread* and Cheese; he cared not much for Flesh Meats. He was a sensible old fellow, and had no disease but blindness, which had seized him not above 4 or 5 years."

Mrs HUDSON, mother to Mr George Hudson, a Solicitor in Chancery, lived 105 years, and then died of an acute disease, by catching cold. Her eyes were so very good, she could see to thread a needle at that great age: her food was nothing (or very little else) save Bread and Milk all her life time.

Died A. D.

1739 Margaret Patten—137. Of St Margaret's Workhouse, London. Never ill till within a few hours of her death. For many years lived chiefly on *milk* diet.

1743 Peter Mestanea, of Veniel, in Murcia—130. Never tasted wine; worked hard; and bathed every morning, from spring to winter.

1748 John Hussey, of Sydenham—116. For 50 years had balm-tea, sweetened with honey, for breakfast, and pudding for dinner.

1750 "John M'Alpine," says the *Highland Physician* in his letters, "was a grazier in Jura, whom I am sure you have seen, for I think he was in that hunting match to which you invited me in the year 1738, in the forest of that Island. He lived to the age of 119, and enjoyed sound health, a solid judgment, his memory and senses, to the last moment; and I believe he *might have lived some years longer* had it not been that some of his relatives fell in the last unnatural rebellion. ...When a boy he was but puny, slow in growth, and full of many gross humors ... His dealing in cattle led him frequently to the mainland, and the low countries; and the company he kept obliged him to *drink hard*, and sit up late, which so affected his constitution, that he *enjoyed* (?) for two or three years a very bad state of health. In this state, when turned of 23, in coming out of a boat, he struck his shin against the gunnell; it festered, and became a settled gangrene. The quacks tampered with it for near two years, and while under their hands observed no regimen, and got drunk with *aqua vitæ* as often as he could get company to tipple with him. In this state he came under the care of Dr M'Laughton, of Barragad ... This gentleman obliged the patient to come to his own house, where he forcibly kept him to a *proper regimen*, and by that alone (save common plaisters), perfected the cure in three months, and sent M'Alpine home in a perfect good habit of body, *and impressed with so strong a notion of the great effects of temperance*, that he all his life time observed the same regimen, and from that time never was bled or took *any* kind of medicine. He never drank ale, wine, or punch *but twice a year*, Whitsuntide and Martinmas. Never drunk dry *drams* of any kind. He used tobacco in no shape ... Till his death was as hardy as the youngest man in the country.

"I have conversed with several old men now living in different parts of the Isles and continent, aged from 80 to 100; *and find they all abstain from excess* in strong liquors; none of them drink drams; they eat *sparingly* of fish and flesh."

"One Fairville, a Shetlander," says the *Highland Physician*, "lived to be 180, who *never* drank any *malt liquor, distilled water, nor wine*. I can, from my own observation, mark *a great decline in the general health of the country* ... which I can attribute to nothing else but *the change of diet and exercise* from what it was formerly. ... In half a cen-

tury more, I believe, we shall find no manner of difference between the longevity of the inhabitants of the Highlands, and those of the low and more southern countries. ... In the days of King John, when the Barons were able to give such a check to the regal power, the inhabitants were as the Highlanders were about 50 years ago,—a brave, robust, hardy, temperate, and parsimonious people; dispositions which stuck to them pretty firmly as far down as the reign of Elizabeth. But since that time they have been visibly on the decline, *both in spirit and constitution*. ... The change must be owing to foreign luxury and exotic vices. ... *Most of the old men I ever met with*, and I have seen some in all parts of Europe, ascribed that happiness *to the effects of temperance alone*. ... I have indeed seen *some*, old men from the mere force of a strong constitution, but these, as they did not observe the same rule of temperance, but presumed upon the health of their habit of body, *were old men much sooner than the others*, [who were] more weak;—and their longevity seemed to be given them as a curse, as they passed perhaps the 20 or 30 years they enjoyed above the common age, in torments ... and *were dead*, for the whole space of their supernumerary years, *to all sense of pleasure or reflection*, like the rest of mankind, and measured a wretched existence by the weight of their excessive misery, and the number of their never ceasing groans." Opinion of the Highland Physician.

DIED A. D.

MARGARET HUNTER, of Newcastle—104. Her beverage was mostly milk or water. Only drank 2 gills of Malt liquor in her whole life. 1753

JUDITH BANNISTER, of Cowes—108. Her chief diet, biscuit and apples, with milk and water, for the last 60 years of her life. 1754

ANN MAYNARD, of Finchley—112. Intelligent, and abstemious. 1756

OWEN CAROLLAN, of Duleck, Meath. A temperate peasant. Had 6 fingers on each hand, and 6 toes on each foot. 1764

ELIZABETH MACPHERSON, of Caithness—117. Retained her senses to the last. Her diet vegetal, with milk. 1765

ENGLEBERT HOFF, of Fishkill, N.Y., died prematurely of a fall at the age of 128. Why does not some one defend accidents as innocent, when, notwithstanding, this man was *so old?*

THOMAS WINSLOE, noted for sobriety and regularity—146. 1766

One POLEZEW, says Carey, in his 'Survey of Cornwall,' lately reached to 130 years of age; a kinsman of his to 112; and one BEAUCHAMP to 106. To my own knowlege, adds he, 90 is *ordinary* there in every place, and *in most* persons accompanied with an able use of body and senses.

FRANCIS CONSIT, of Burythorpe, Malton—150. Very temperate and used great exercise. Retained his faculties to the last. 1768

PHILLIP LOUTIER, of Shoreditch, London—105. A French barber, and a water-drinker.

JANE FORRESTER, of Lannercost Abbey, Cumberland, says the

Public Advertizer, of March 9, 1768, is now in her 138th year. "There
DIED A. D. are 6 women in the same parish, the *youngest* of whom is 99."

1770 Baron BARAVICINO, died at Méran, in the Tyrol—104. Married his fourth wife at 84, by whom he had eight children. Walked two leagues per day for exercise nearly to the last. His favorite beverage tea, sweetened with sugar candy.

Mrs BOYCE, of Guildford—107. By temperance she acquired con-
1771 stant health.

PAUL BARRAL, of Nice, a priest—106. A vegetarian.

1772 Mrs CLUM, Lichfield—138. Remarkable for frequent exercise and temperate living. Her youngest daughter survived a century.

1773 ELIZABETH de VAL, of Brussels—101. A vegetarian.

FRANCIS WILKS, of Stourbridge, laborer—109. *Small beer* his
1777 only beverage.

JOSEPH EKINS, of Combe, Berks, laborer—103. For the last 40
1780 years of his life a vegetarian.

HENRY GROSVENOR, Esq., of Inch, Wexford—115. A cheerful companion at 100, when he married his last wife. Very sparing in his diet, and used much exercise.

VALENTINE CATEBY, of Preston, near Hull—116. Intellects per-
1782 fect to the last. Vegetarian.

ANTONY LOYDI, of Amazquet, husbandman—114. Never had any sickness. Aversion to physic. Kept his hearing and teeth to the last.
1783 Abstained from wine and tobacco, and ate bread made of best wheat.

JAMES LE MEASURER, of Navarre—118. Vegetarian.

SUSANNAH GREENFIELD, of Potton, Beds—108. Diet, farinaceous.
1787 Beverage, wine-and-water only.

Hon. Mrs WATKINS, Glamorganshire—110. Remarkable for regu-
1790 larity. During the last 30 years, her chief food was potatoes.

JAMES PETERS, of Dundee, a packman—107. His strongest beverage was small-beer.

791 PASCAL SERIA, of Valentia—111. For many years a vegetarian.

MATTHEW CHAMPION, of Great Yarmouth—111. Noted for his
1793 honesty and sobriety.

Mr SHERWOOD, of Stokesley—105. Used much exercise, and tem-
1794 perate.

JOHN WILSON, of Sosgill, Cumberland—100. For 60 years as a
1799 Blacksmith, his beverage was milk-and-water; with the exception of 3 glasses of strong-drink.

ELIZABETH BULLARD, of Gainsborough—107. Another instance of the advantages of a temperate mode of life. She saw without specta-
1804 cles, and died without pain.

EPHRAIM PRATT, of Shaftesbury—116. A vegetarian. He could mow a good swarth within a few days of his decease. His son, also a vegetarian, reached 103.

DIED A. D.

JOHN MAXWELL, of Kingston, Forfar, living in 1805, aged 104. At 95 married his fourth wife. Lived very temperately, on plain diet, and *tasted no spirits*. For the first 90 years of his life used no tobacco. 1805

JAMES DONALD, of Old Kilpatrick—100. Would thrash a boll of corn before breakfast. Lived on common country fare. Can give no advice for living long, save "*strictly to abstain from whisky*." Exact dates unknown.

FRANCOIS CAILTON, when above 100, could walk a league. Retained his hair, teeth, and memory to the last. His chief diet was rye-bread, his drink water.

LEWIS MORGAN, Radnorshire. Died from a fall at 101. Lived chiefly on vegetal diet, and drank frequently of the famous rock water of Llandridod.

THOMAS LAUGHER, born January, 1700, was living at the downfall of Napoleon—115. His father, who lived at Markly, died at 97, his mother at 108, his son at 80. He was a wholesale wine and brandy merchant in Tower Street, London, but sustained an immense loss by failure of a city house. He never drank strong-beer, small-beer, or spirits; his principal diet being bread, coffee, tea, and spring-water. 1815

MICHAEL BAILEY, of Sherburn, the original of 'The Woodman'—107. Very regular. 1818

JOHN WOODS, Farmer, near Dungannon—122. He lived a regular and sober life, and was very abstemious.

W. DUPE was born January 1st, 1749, near Wincaunton, Somerset, and was living in St Aldates, Oxford, in his *ninety-fifth* year. Seventy years ago he fixed the globe on the top of the Observatory in Oxford. His trade was that of a gunsmith, at which he worked regularly till a little before his death. He ascended with Sadler in his balloon. He has never drank anything 'stronger' than *water*. His life was in strict accordance with the chief laws of health; taking 'coarse' *food*, pure *beverage*, and moderate *exercise*, both mental and bodily. Thus, when approaching the verge of a century, he could conveniently digest food (such as cheese) which would induce a fit of indigestion in many 'wine-bibbers,' not a fourth of his age. At different times he obtained no less than ten patents for various useful inventions. In the summer of 1841 he made a discovery relative to the growth of trees, for which Lord Abinger gave him the sum of five pounds. He taught Sir Robert Peel—the premier—the art of working in iron. His youngest and nineteenth child, Ann Dupe, was born August 5th, 1841. His father was aged 102; his grandfather 108; all three *water drinkers*. 1842

FRANCES HALL died at Walbottle Colliery—93. She walked from one room to another a few days before her death; had never known illness, *never took medicine or any stimulating drink*, rose early, and lived on simple fare. During the last 14 years she had used no spectacles. She could thread the finest needle or read the finest print without the help of glasses. 1854

Our space is exhausted, and we must stop. In the quaint language of Dr Edward Baynard, written in 1706—"A hundred examples of this kind may be found to confirm the *Doctrine of Temperance* and a cool diet, as necessary to the prolongation of life: but if an angel from heaven should come down and preach it, one bottle of Burgundy would be of more force with this Claret-stew'd generation than ten tun of argument to the contrary, tho never so demonstrable and divine."

This is equally true of a generation addicted to factitious Port and Bitter-Beer—the Bottle will overcome the Brain, the Spirituous prove more potent than the spiritual.

Those who choose to consider such experiences, however, can hardly regard as fanatical the prediction of ISAIAH (lxv. 20), in respect to that new social earth when men are wise enough to 'plant vineyards and *eat* the fruit of them.'

"There shall be no more thence an infant of days, nor an old man that hath not *filled* his days: for he that dies an hundred years old shall be [esteemed] a child; and *he that falls-short-of* ‖ an hundred years shall be [reckoned] accursed"—that is, as being destroyed prematurely.

‖ Not 'sinner.'

Need we recur to such objections as are derivable from *exceptional* cases of Intemperance and Long-life? Would any one *so* argue in reference to Cholera occasionally missing the sot and seizing upon the sober? Shall we doubt the *rule*, while of its being such the exception is the proof, because it *is* an exception? Yet, as Dr Baynard has said, "because they see some few old drunkards of four score safe waded through an *Aceldama of their neighbours' skulls*, fallen in the battle, young men presently take *non causa pro causa*, and imitate them in drinking; not considering that this their Precedent, had he trim'd his lamp and wisely managed the flame, might have liv'd to have been an *Old* PARR, or a JENKINS. But alas! where one Claret-professor lives to 80, ten thousand of their tyro's sink under it."

Exceptions.

These apparent exceptions, however, *can* at most but verify the aphorism suggested by Lord Bacon, that the Excesses of Youth are drafts upon Age, payable ten, twenty, or fifty years after date.

We sum up the whole matter of Longevity in words of the highest authority, both secular and sacred:—

"Strength of Nature in Youth passes over many excesses, which are *owing* a man till his age."—BACON.

"Air and exercise; sobriety and temperance; the mind at ease, and a good conscience; are the grand preservers of health and guardians of old age."—Dr SAMUEL JOHNSON.

"The fear of the Lord is the *beginning* of wisdom, and the knowlege of the holy is understanding; for by me *thy days shall be multiplied*, and the years of thy life shall be *increased*."—PROVERBS, ix. 10—11.

A PARADOX.

The author of the *Westminster Review*-article analyzed in the following appendix, frequently amuses himself by palming strange sophisms upon the mental-laziness of the public. In that article he ventilated the paradox that "Food *is* force; Alcohol is force; therefore Alcohol is *food*" *!*—which is logically equivalent to saying, that as "Man is mortal; and an Ass is *also* mortal; *ergo*, an Ass is (*that*) Man." In an article on 'Food and Drink' in *Blackwood*—which first gave insertion to Professor Johnston's physiological blunders—he now outforces his 'Force'-fallacy. The new-paradox which he grinds-up in the old logic-mill, is this:—"That Salt is Food!—that Lime is Food!!—that *Drink* is Food"!!! We wonder he did not plagiarize the *whole* of the paradoxes put forth by Dr Chambers in 1854. (See our first volume, p. cxcvi.) Why not add also, that "*Air* is Food"? Was he afraid of the fallacy becoming *too* conspicuously absurd? No doubt, both water and air *do* chemically unite with tissue; as water with lime in building; but after all, our daily drink is not our 'daily *bread*,' any more than water is 'building-material.' Do not misunderstand us. There can be no objection to an absolutely *new* nomenclature of Essential Materials of the Living Organism—if Mr G H. Lewes thinks proper to attempt one—but pervert and nullify the plain, accepted, and universal meaning of *Words* cannot be excused as a mere literary joke; still less accepted as a contribution towards a philosophy of regimen.

If any teetotaler, however, cares to credit the new physiology, it must be very gratifying to learn, from this '*positive* philosopher,' that Water is more nutritious than Mutton! The people, at last, will rightly appreciate the pump and water-tap; and of course, with hungry men, its cheap-provision will supersede that of the Bread-shop. Like Othello's, the baker's 'occupation will be gone'! In the new Pantheon, Rhea, the goddess of Terra-firma, must yield precedence to Poseidon, the deity of liquids. Scrip in cöoperative Flour-mills will sink, and shares in Water-works rise in a corresponding ratio! The late plan—hastily and ignorantly proclaimed a failure, in adding *only more* of the water of crystallization to flour in the baking—*must* be a success after this! Such bread will now keep its promise to the eye, and not break it to the stomach! Mr Lewes' logic is literally this:—

> "The purpose of Food is to *sustain* the organism.
> "Life will not be sustained if Water be with-held.
> "But life will continue for days without Beef.
> "*Therefore*, Water is more nutritious-Food than Beef!"

No one will suspect *us* of undervaluing water and its *real* uses (vol. i. p. c.): but water is no more food than it is breath—and without *that* we cannot exist many minutes. The purpose of all vital-stimuli

and agencies is to sustain life—and all are essential;—but are the *differences* between air, food, water, light, heat, and electricity, *therefore* abolished? Are they, therefore, all food?

The same writer who garbled his citations from Liebig against the Teetotalers, can now atttack Liebig's authority, and call in question his *dictum* that Fat is not *structure* itself, but a need in the function and nutrition of structure, either enclosed within it, or bearing the relation of a *circum*stance to it. We cannot here discuss the question; and indeed it is sufficient to say, that *call* it what you will, there *is* a broad distinction between Fat and Tissue, which can not be ignored under some absorbing generic term. He uses the fact, that because oil *in* nerve and tissue is *essential*, it is THEREFORE structure; and THEREFORE sugar and starch, which make oil, and oil that *supplies* the place of *fat*, are *Nutritive*-substances! It might just as well be argued, that since *fires* and *lamps* are essential to a Household and its Cookery (=the *Life* of the Household)—THEREFORE there is no broad distinction between the Coal-hole and the Pantry! and THEREFORE Oil, Coal, and Cinders are equally, with Bread, Beef, and Custard, *Nutritive*-Household-substances!! He denies, consequently, the distinction between *Histogenetic* (fabric-forming) and *Combustive* (heat-giving) Food; on the additional ground that the former kind *ultimately* undergoes combustion! By the same paralogism, it might be proved that there was no functional difference between a gentleman's felt *Hat*, and the inner *Soles* of his boot—*because* the latter are sometimes made out of cast-off castors! Or, that an Upholsterer was unphilosophic in *classing* or arranging his Wood (=Food) into (1) Furniture-*making*-Material, and (2) into *Waste*-fragments for Fuel—on the ground that chairs and tables would *at last* have to come to the Fire!

The accredited distinction, even if there were far better reasons for discarding it than have yet been adduced, must give place to one which is *practically* very like it. *Sugar and Starch*, have for their prime and chief *use*, if not exclusively, the warming of the body as COMBUSTIBLE-compounds. *Albumen*, and its cognate-forms, have the first and chief function of REPAIRING the loss of the Albuminous-tissues; tho, in their regressive metamorphoses and oxidation, they will answer the secondary purpose of warming the blood. *Oil* has the intermediate, or mixed function, of first *aiding* the deposit of albumen in all the tissues, second of filling-up certain parts with oil, for the needful performance of their function; third of giving-out heat by oxidation.

Whatever paradoxes may be propounded, in jest or earnest, *the very marked distinction of chemical composition* between Albumen, Sugar, Oil, and Water, will to 'the common-sense of most' clearly evince a corresponding *distinction of use*.

MISCELLANEOUS APPENDICES.

"A *little* alcohol is no more natural or good for the system than a *great deal.* In so far as it acts at all on the healthy body, it tends to *modify* or *pervert* its normal functions; and the question of its injurious effects, is simply one of *quantity* and *time.*"—PROFESSOR CARPENTER (*Scottish Review*, April, 1855.)



FALLACIES OF 'PROFESSOR' JOHNSTON.

[Papers collected from the *Church of Scotland Magazine*, the *Abstainer's Journal*, and other organs, for August, 1854.]

OUR stand-point, as reviewers, may be stated in a few preliminary paragraphs.

§ 1. To the religious philosopher, bent on a comparison of Dietetic custom with the constitution of Nature, with the view of deducing a rule of life from the laws impressed on Food and Drink by the Almighty, no better starting point can be found than the declaration that at the completion of material nature and of man—"*God saw every thing that he had made, and behold, it was very good.*" As we understand it, not only were nature and man individually 'good,' but, in their mutual adaptations, 'very good.'

Perfection of natural Law

Excluding from our present contemplation the ample provision of medicinal herb for the emergency of disease, foreseen as following corruption, let us enquire wherein consists the Divine Providence of Food and Drink for the ordinary needs of healthy man. When we daily pray—"Our Father, which art in heaven, give us each day our daily bread"—what is it that we really mean? What *wants* are implied, and by what *material* and *media* are those wants met and satisfied?

§ 2. Man, tho a mental and moral being, is no less a *material organism* endowed with vitality. He lives and breathes, and has all the attributes of life. Amongst others, he is *warm* and *moves*—warm in his whole organism, in order that he may live and move in every part. But heat radiates from solids, evaporates from fluids, while matter that moves also wastes, or undergoes 'wear and tear.' The vital machinery of man, therefore, momently loses heat, or tends to coldness and death; momently loses matter from its tissues and organism, and thus tends to weakness and decay. The *first loss* of the body is that of heat—hence the *first want* of the body is that of COMBUSTIBLE MATTER AND AIR to keep up the vital flame. The *second loss* of the body is that of the substance of its own tissues (nerve and brain, with which we feel and think; vessels, with which we circulate, secrete, or excrete; muscle, with which we direct action; bone with which we walk and work), whence we see that the *second want* of the living system must be that of the plastic materials of NUTRITION, wherewith to repair continuously the waste of the structures of life. The *third loss* of the body is that of fluid, in respiration, perspiration, and excretion—a LIQUID being the *one* necessary vehicle for the introduction and circulation of the natural alimentary solids in the first place, and for the excretion of their decomposed elements in the second.

Life, its losses and wants.

Corresponding with these three wants, we have a threefold supply of *Food*, *Air*, and *Drink*, of which it may be said, that on the quantity and quality of each the physical Health of Man is chiefly dependent.

Air.

§ 3. Our lungs are the flues and bellows of the vital grate, with and thrö which we introduce fresh AIR (oxygen), the great stimulator of the tissues and the supporter of combustion, without which our fuel-food would not be burned and warm the blood. The oxygen of the air is provided in a fixed and proper quantity for the normal organism—neither more nor less than is required for health, viz. about 20 parts in 100 of the atmosphere, where it is diluted with nitrogen and vapor, and is vitiated also, but unavoidably, with an infinitesimal quantum of carbonic-acid.

Drink.

§ 4. DRINK is supplied to us in a form that has been called 'the blood of Nature'—the *vehicle* of change and movement in moss, and fern, and grass, in field and forest, in insect and bird, in beast and man alike—the one digester and circulator, the one purifier and builder—made chemically subtle and penetrating, and physiologically bland and innocent, that, as the '*Water of Life*,' it might perfect the designs and typify the blessings of Him who is the fountain of *living* Water—who is Life itself.

Food.

§ 5. SOLIDS are primarily supplied to us for Food in the form of Corn, Fruits, and Roots, a beautiful hierarchy of vegetable blessings. * These, when analyzed, are found to contain distinct *kinds* of food—1, such as have their type chemically in the constitution of wood for *firing*, including starch, sugar, gum, etc.; 2, those which are composed of the same proximate elements as the blood, and that furnish *nourishment* to the body—in fine, which build up the living temple. One of the most interesting *varieties* of Food, and indeed one which fulfils a double purpose, are the substances called Fat and Oil. Owing to their great proportion of Carbon, they are the most valuable of all elements as *fuel* for the body; but they have another most important use in the animal œconomy, Fat being both an integral part of the structure of the nerves and brain, and an universally necessary *aid* to the organization of albuminous matter. The peculiar value of Oil for these purposes is left totally unnoticed in the work of Mr Johnston, subsequently reviewed.

Uses of Oil.

§ 6. These arrangements are seen to be wise and good, the more we look into them. "The mercy of God is over all his works." The products of varying climes and seasons vary with the wants of man. Rice, sugar, and sago, furnish a fitting food for the torrid zone, containing carbon loosely packed up as it

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* The *Edinburgh Review* for July, 1854, p. 53, pronounces it to be 'folly' in us, to assert that all natural food is *solid*! Will the reviewer indicate any article of food (whether soup or pottage, mixed with water, or moist, or dry) that is not such by virtue of its *solid parts*? Let him extract the curd, butter, and sugar from the milk, and then see how his children will *feed* on what is left! or try a similar plan with his own soup!

were, because less heat being there radiated from the body, in a day, less fuel is required. In the temperate regions we have more solid grain, as wheat and barley, containing a per centage of oil or fat, that substance yielding on combustion much heat. But farther north, as in Oregon and Canada, where the winters are extremely severe, the *maize* is found to thrive, which, being much richer in oil than is wheat, still better answers the purpose of fuel-food. Moreover, while God imparts this needed chemical constitution to the fuel-food of varying zones, he stamps upon each and all the attribute of physiological neutrality—they are sealed with the seal of innocence. They will warm, but not inflame; they will soothe, but never irritate. Thus, then, for the supply of the double loss of heat and substance consequent upon the actions of life, Providence appoints *Two kinds of Food;*—for the purpose of burning up the fuel-food, and normally exciting the tissues, he gives us *Oxygen gas*, properly diluted;—and for the one end of an universal vehicle or circulator, he bestows the one adapted element of *Water*. To doubt the finished wisdom of such provisions for human wants—to believe that some necessary element has been omitted, and that some new substance was required to perfect the creation of Paradise, would be simple Atheism. It was *not* left for the Brewer and Distiller to crown and consummate creation.

Wise nature omits alcohol.

§ 7. Furthermore, if, under special exigencies of climate or constitution, the most valuable kind of fuel-food is required, Nature is never found to contain a provision for Alcohol. She gives to the food an extra quantity of oil or fat, or "*substances convertible into oily matters by the power of the vital organism*—first, because they are *innocent*, and do not waste the vital force; second, because they give out *more heat* than dear and acrid alcohol. * If God be wisest, Teetotalism must be best, for it is the contented observance of His law."

Alcohol *contrasted* with food.

§ 8. If such considerations vindicate the propriety of abstinence from spirit, there are others that no less demonstrate the positive unsuitability of *alcoholics* as diet. Alcohol is essentially a poison. It destroys alike muscle and nerve, rapidly exhausting the irritability of the one and the sensibility of the other, as we have elsewhere shown. Chemically, it *uses up* the oxygen of the arteries that is given in a special quantity for a special purpose, leaving *in* the body those waste elements which ought to have been sent out. *It robs the blood of oxygen*, and thus lowers the vital tone of the entire system. Again—

"Food was made solid by the All-wise, with the design of being first masticated, and afterwards transformed by adapted organs and *their* functions into the elements of blood and bile. The liver itself, by the same Intelligence, was appointed to *form* and *secrete* * oily

* Such were our words in the *Temperance Gazette*, June, 1851. So the comparison always is between the value of fat, *in* the blood or out, and *brandy*, the strongest form of alcohol that can be used without sudden death.

matters. Did the Creator mistake in all these arrangements? If not, why should we hinder the oxygen from consuming the carbonaceous and hydrogenous substances created for that purpose? When the Infinite Spirit has established a series of processes to *prepare* certain constituents for combustion, why should *we* strive, with such labor and cost, to destroy human food in order to form a new, artificial, and poisonous fluid, that will render the original provision abortive?"

§ 9. The utter unacquaintance of literary men with the facts and principles of physiological chemistry has been evinced by recent examples. In *Blackwood*, for May, 1854, we perused the following incredible statement—"Butcher meat is matter in a more "highly organized form, and more nearly assimilated in composition "to our own frames, than vegetable food. It is in diet *what alcohol* "*is in drink.*"—p. 603.

Astounding errors of literary organs.

Now, the fact is, that all the PROTEIN COMPOUNDS (which nourish the frame by becoming a part of it) are virtually *identical*. How can it be said of either of the three—Fibrin, Albumen, and Casein—that it is more highly organized than the other? The truth is, the body has no power of *organizing* protein compounds for nourishment, being itself built up of what the vegetable *has already* provided for its use. The only difference is, that the fibrin of the beef is nearer the *turning point of decay* than the fibrin of the bread, and contains within its tissues, of course, a portion of waste matter, commonly called *gravy*, destined to be cast out by the kidneys, or consumed by the action of oxygen. Alcohol itself is the result of the *dis*organization of sugar, and so far from being a highly organized drink, is not even drink at all. * It is the water taken with alcohol that alone saves the drinker; the natural drink simply sheathes the mischief of the spirit: it can not transmute antagonistic properties into its own.

§ 10. It was reserved, however, for another contributor to *Blackwood* (if he *be* another) to crown the climax of confusion on this point: we mean Mr Johnston, the author of a serial work entitled *The Chemistry of Common Life*. In the paper on "The Liquors we Ferment," as well as in some others of the series, we find clear proofs that the author is neither 'up' to the latest discoveries in his 'reading,' nor to be depended upon for any thing like an accurate interpretation of the facts.

How to *make* alcohol.

* The *Leader* of March 31, 1855, announces that "it will aggravate the teetotal mind" to learn that Berthelot has discovered "how to *make* "alcohol—not how to produce it by the *decomposition* of an organic sub- "stance, but how to *create* it by the recomposition of inorganic sub- "stances." It afterwards speaks of "the chemist *un*making and *re*making an organic substance." Now there is nothing here to 'aggravate' teetotalers. On the contrary, it shows that we are right in distinguishing between what *nature* makes and what *man* makes; if alcohol *must* be made, it is well that we can do it without destroying food at least.

The Chemistry of Common Life: by JAMES F. W. JOHNSTON, M.A. [Reader in Chemistry to the clerical College at Durham.] Blackwood and Sons, Edinburgh. 1854.

THE conception of such a work as *The Chemistry of Common Life* is excellent: we regret that the execution of the one before us is, in many respects, but indifferent. Not that Mr Johnston has failed to introduce into his serial a large number of interesting facts; for this he undoubtedly has done—but the true and the certain are largely mingled with unfounded hypotheses, and counteracted by semi-apologies for such pernicious practices as the drinking and smoking of various narcotics.

He thus opens his battery against the temperance movement:— Mr Johnston opens his battery.

"In the ardour of this crusade, statements have been hastily made by over-zealous champions of total abstinence, which are *not quite* borne out by chemical and physiological researches.— p. 348.

It is, at least, satisfactory to know that the temperance champions have been *near* the whole truth, even if not so infallible and precise as Mr Johnston himself. Even Liebig's theories have not always been *quite* borne out by subsequent researches: it should not, therefore, surprize us that the earnest, practical advocates of a popular reform have not made those limitations in their broad and popular announcements which would strike the microscopic vision of the man of one-science—the physician or the chemist. But it would have been still more satisfactory if Mr Johnston had named the 'champions' referred to, and cited the veritable statements which he thinks are '*not quite* borne out'—tho almost—by said researches.

"Ardent spirits are little else than alcohol diluted with a large proportion of water, and flavored with a minute admixture of volatile oil. They contain none, therefore, of the common forms of NUTRITIVE MATTER which exist in our usual varieties of animal and vegetable food. *It does not follow from this*, however, as some have *too broadly* alleged, that they are incapable of serving *any useful purpose* in the animal œconomy." Spirits are *un*common nutrition!

Mr Johnston is ambiguous here. Does he mean to say that some teetotaler has alleged that whisky is useless *because* it is not nutritious? Who? It looks rather like the logic of our opponents. We do assert, however, that ardent spirit can answer *no* useful purpose in health; but *not* because it is innutritive. Persons have also asserted, probably, that spirit being destitute of *solid* organized matter, cannot *nourish* the body, or as the vulgar fancy, 'strengthen' it; but it is only Mr Johnston himself who has unfairly put these distinct assertions together as premiss and conclusion.

If Mr Johnston desires to combat the teetotal position, we will

furnish him with the opportunity; we can readily refer him to those broad-propositions of our 'champions' upon which the movement is based; or to the testimonies of those Medical Men who are *not* our champions, equally satisfactory to us. Some years ago, before Mr Johnston commenced his studies in chemistry, Sir Benjamin Brodie, Sir James Clarke, Drs Hope, Chambers, Marshall Hall, Copland, and the great bulk of the London professors and teachers of medicine, testified as follows:—

Testimony of physiologists.

"Man in ordinary health, like other animals, *requires not* any such stimulants as wine, beer, or spirit; and *cannot* be benefited by the habitual employment of any quantity of them, large or small: nor will their use during his lifetime increase the aggregate amount of his labor. They will rather tend to diminish it."

More recently, nearly 2000 medical men have subscribed a similar testimony, including the great names of Arnot, Bright, Brodie, Burnett, the elder Chambers, Clarke, Copland, Fergusson, M'Gregor, Paris, Williams, Alison, Combe, Syme, and Sladen.

These statements are broad enough—are we to discard them for the opinion of a farmer's chemist or an amateur physiologist? We believe that they are *quite* borne out by all chemical and physiological research, *i.e.* by the facts of experience and nature, rigidly interpreted and precisely expressed—Mr Johnston's *ipse dixit* to the contrary notwithstanding.

Foul-air said to be a *necessary* of life.

"It is ascertained of ardent spirits—*First*, That they directly warm the body, and, by the changes they undergo in the blood, supply a portion of that carbonic acid * and watery vapor which, *as a necessity of life*, are constantly being given off by the lungs."— p. 349.

The first part of this paragraph is opposed to fact—the rest is downright nonsense. By 'necessity of life,' Mr Johnston can scarcely mean 'a necessary of life,' or a want of life. It would be very odd to talk of the soot, gas, and vapor that ascend the chimney, 'as a necessity of fire,'—or to speak of the foul air and vapor in crowded rooms 'as a necessity of life.' Yet this is precisely Mr Johnston's style of language in his physiological disquisitions, with this additional absurdity—that he makes the purpose of alcohol to be to *supply* these excretions!

What Mr Johnston intended to say, was probably this—That alcohol, under certain conditions, is decomposed in the circulation, yielding, on union with oxygen, carbonic acid and vapor to the blood, which it is necessary, for the *preservation of life*, should be *expelled* from the system. He unfortunately puts the cart before the horse, however, and makes nature supply the excretion, whereas the thing '*supplied*' is the natural fuel undecomposed, and the thing '*got rid of*' is the poisonous gas. It is one of the strongest objections to the use of alcohol, that it KEEPS IN *carbonaceous*

* Mr Johnston's statement that alcohol supplies carbonic-*acid*, is not accurate. The alcohol supplies the carbon; it is the *oxygen* of the air which combines with the carbon to *form* the acid.

and effete matter, and thus defiles the living stream—so that the carbonic acid is not 'given off' so constantly as otherwise would be the case. Mr Johnston proceeds to draw his inference as follows:—

Concentrated blunders

"They (spirits) so FAR, therefore, *supply the place of food*—of the fat and starch, for example—which we usually eat."

This logic is very curious! 1st, Spirits *warm* the body; 2nd, they supply a poisonous *ex*cretion (carbonic acid) to the blood; 3rd, *therefore* they supply the place of an innocent *in*cretion (food)!

Now, unless Mr Johnston intends a quibble—unless he speaks, not in a broad sense, of the common use of spirits by men and women in ordinary health, but of some exceptional instances, as where food cannot be had, or cannot be digested,—we must give a flat and unequivocal negative to his assertion. *Spirits do not warm the blood*, tho they certainly may burn the organism and produce a *sensation* of heat in the nerves or brain.

For 1st, EXPERIENCE has determined that in the coldest regions the warmth of the body is best sustained by the use of proper food and abstinence from alcohol. 2nd, EXPERIMENT has shown, by the decisive test of the thermometer, that the blood is colder after the use of even small quantities of wine; and that less carbonic acid is breathed out after the use of alcohol, and not more. Prout, Davy, Böcker, and Vierordt have, so far as Mr Johnston is concerned, experimented to little purpose! They have shown that the vital-fire burns *dully* under the influence of alcohol; Mr Johnston persists in asserting that it burns *brightly!* 3rd, CHEMISTRY shows that fat consumed in the body (and in health there is always fat or oil being produced from the food by the liver, even if we do not introduce it,) gives out *more heat* than alcohol, at no expense of nervous force or structural irritation, and at a tithe of the cost; but Mr Johnston announces that the artificial, dear, and poisonous fluid 'supplies the place' of the natural, cheap, and innocent solid! 4th, PHYSIOLOGY demonstrates that alcohol preternaturally excites the nervous system, disturbs the assimilating and excreting functions, inflames the organism, robs the blood of fresh air, hardens the albuminous tissues, opposes change of matter on which healthy life is dependent, and thus dries up the very fountain of the gastric-solvent, as well as precipitates the *pepsin*;—still Mr Johnston is found ignoring all these facts, sneering at those who have the brains to comprehend and the honesty to apply them, and telling his readers that alcohol is both food itself and a digester of food! * Mr Johnston proceeds with his exposition of the benefits of ardent spirits in the following extraordinary paragraph:—

Evils of alcohol.

"*Second*, That they diminish the absolute amount of matter usually *given off by the lungs* and the kidneys. They *thus* lessen, as tea and coffee do, the *natural* waste of the fat and tissues; and they *necessarily* diminish, in an equal degree, the quantity of food *which is necessary* to keep up the weight of the body."—p. 349.

Alcohol said to lessen *natural* waste!

* These experiences and experiments were given in our *History of Alcohol* (1843, 1846).

Mr Johnston seems to be quite unconscious that in this paragraph he is confuting his own assertion in the former! If *less* matter is given off from the lungs, etc., how can *more heat* be produced in the blood? Does heat originate without change of matter? If less coal is consumed in the grate, can more heat be given to the kitchen? If you burn up less oil in the lamp, or less tallow in the candle, will there be more light and heat in the apartment? Tho the carbo-hydrates may be regarded as furnishing the *chief* fuel to the body, yet a very considerable source of heat is to be found in the oxidation, or even separation, of other organic elements; and this source is confessedly diminished by the action of alcohol. Moreover, how can that which lessens *natural* waste and keeps in dead and effete matter, contribute to anything but an *un*natural condition of the body?

How spirits can "*necessarily diminish* the quantity of food which *is necessary* to the body," we can not even conceive. The assertion is positively absurd. Mr Johnston must have meant something else, but his statement is so obscurely and strangely worded, that we can not very well tell what, until we come to the following sentence:—

"In other words, [much needed!] they have the property of making a given weight of food *go further* in sustaining the strength and bulk of the body."

Life lessened to save food.

What is the fact from which this inference is drawn? It is this; that alcohol, as an antiseptic and carbonizer of the blood, *deadens* the system; in short, lessens the sum of vital changes. The inference is—that by this process of *arresting* life, you will make the bread of life *go farther* in sustaining life! Thus, in reality, all that Mr Johnston has said is this—That if you *dispense* with the highest and purest life, by narcotizing the system, you will consequently *dispense* with the food required to sustain it! This would be a very good argument if life was a means to eating; but it is a very bad one in the actual case, since eating is the means to life. As we eat to live, not live to eat or not eat, *why should we lower our life to save our larder?*

"And in addition to the saving of material thus effected, they *ease* and *lighten* the labor of the digestive organs."

If narcotics are to be used to lower life, why seek to increase the digestive powers, and thus increase life? Yet a little farther on, our author, referring to the weakness of old age, says:—

Alcohol and digestion.

"Weak alcoholic drinks *arrest* or *retard* loss of substance (*i. e.* vital change). They greatly stimulate the digestive organs ALSO (!), *and help them to do their work* more fully and faithfully."—p. 350.

First, says Mr Johnston, they lighten digestion by dispensing with the need for so much of it; spirits acting as food, while requiring no digestion! Secondly, they help the stomach to do its work better! Would Mr Johnston condescend to particulars here? Facts are certainly against him. Sir Astley Cooper, after a life-

long experience, said—"We have all been in error in recommending wine as a tonic." Even Liebig admits that teetotalers have *better appetites* than wine drinkers; as they certainly have less 'stomach complaints, and often infirmities.' Will our author explain how that which opposes that vital change which supplies the gastric juice,—which precipitates its salts, and the salts of the blood,—which hardens albumen, the pabulum of living tissue,—and which arrests the natural functions of the organs generally,—can specially promote that of *digestion?*

Grunewald and Schroeder in their experiments on Gastric Juice, refer to a function which is despised by the learned 'professors' who, in our country, seem to think that Nature has mixed the juices according to some bad recipè, and made them *too weak!*—we mean, the great importance of the gastric secretion for the *intermediate* circulation of fluids, and the *intermediate* change of matter, with the view of securing a beneficent œconomy in the living-household, by *prolonging* the series of changes to which animal matter is destined in the organism. Where Nature designs to render matter *gradually* efficient in the discharge of vital processes, our 'professors' step in with their artificial prescriptions *to cut it short!* Now we respectfully submit that when a Wise God made the gastric juice of a dog capable of digesting protein in 2 hours, and the gastric juice of a man capable of doing it only in 3 or 4, he is but a foolish Philosopher who would *contract* human digestion to the canine period.

It would be unfair to Mr Johnston, however, were we to represent him as giving *no* evidence in favor of the temperance principle; we find the following passage cited under "The Beverages we infuse:"—

Coffee better than spirits.

"I have had," says Mr Ward, of Pedang, Sumatra, "the opportunity of observing, for twenty years, the comparative use of the coffee leaf in one class of natives, and of *spirituous liquors* in another—the native Sumatrians using the former, and the natives of British India, settled here, the latter; and I find that, while the former expose themselves with impunity to every degree of heat, cold, and wet, *the latter can endure neither wet nor cold, for even a short period*, without danger to their health." (*Pharmaceutical Journal*, vol. xiii. p. 208.)

If man, therefore, really ever needs an article to stop vital changes, with the least loss of vital power, coffee is infinitely preferable to alcohol; but for our part, we do not hold atheistic views; and we do not believe God has so constructed man, that in the performance of his life-work, he needs his daily-drug along with his daily-bread.

Spirits, the *milk* of senility.

Mr Johnston designates *spirits* as "the milk of old age," and asserts that they "ease and lighten the labor of the digestive organs."

* We have not forgotten his limitation, '*so far*'—afterwards contradicted. It is not enough, however, that alcohol should *warm*, which it does not; it should have the *physiological attributes* of food, whereas it has the pathological attributes of *poison*.

Both assertions are directly contrary to fact. Milk is mild, warming, nutritious, and quenches thirst. Spirit is acrid, burning, not warming, not nutritious, but thirst-exciting. Dr Budd, in his *Lectures on Functional Disorders of the Stomach*, lays down this important principle: "Every kind of power an animal can generate,—the mechanical power of the muscles, the chemical (digestive) power of the stomach, the intellectual power of the brain,—*accumulates thrö the nutrition of the organ* on which it depends." Now Mr Johnston has himself shown, or rather stated, that alcohol *puts a stop* to the change of matter involved in nutrition, thus lessening *organic* power; and also that it is a seductive stimulant which creates a nervous feeling of want, an almost 'unconquerable' appetite. Spirits do not therefore *impart* power, but *mortgage* it, as Sir B. C. Brodie has so well stated in a recent volume entitled *Psychological Inquiries*, p. 141. "Stimulants do not create 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 you were before.*"

Stimulants do not *give* power.

Dr Budd further shows, that the organism is injured by alcohol; that it has *no* 'milky' properties, but only acrid ones. Speaking of the most common of all forms of indigestion—all but universal—he says: "The diet should consist chiefly of MILK and FARINACE-"OUS food. *Alcoholic drinks*, and all stimulating articles, *seldom* "*fail to aggravate the disorder*, and should be strictly forbidden."

Vinum *non* lac senum.

The physiologist of Soils says that *ardent* spirit is old man's milk—the physiologist of Men places it in the category *antagonistic* to mild and milky substances. Nor can spirit make food digestible. It hardens the food, and it disorganizes the gastric fluids. What say those eminent teachers, Professors Todd and Bowman, in their *Physiology of Man*, Part IV. ?

"The use of alcoholic stimulants, *retards digestion, by coagula-*"*ting the pepsin*, and thereby interfering with its action. Were it "not that wine and spirits are rapidly absorbed, *the introduction of* "*these into the stomach, in any quantity, would be a complete bar to* "*the digestion of food.*"

Alcohol antagonizes digestion.

The *pepsin*, the *hydrochloric acid*, and the *lactic acid*, the chief digesting elements, have their fountain in the change of matter, and are therefore *dried up* by the use of alcohol. Further, the experiments of Lehmann and Claude Bernard also show, that "the parotid, submaxillary, and mixed salivary fluids, *coincide in being very strongly precipitated* by alcohol." The latter authority says, also, of the *pancreatic* juice, "small quantities of alcohol *coagulate it* almost entirely." It follows, that the digestive power—nervous, organic, and chemical alike—is diminished by the use of alcohol.

The errors of this book often arise from the purely chemical stand-point of the author. He would manipulate man as he manipulates mud: he applies articles to man much as he would apply guano to turnips—ignoring the higher laws of life. Thus he has another curious prescription for promoting digestion—namely, the use of *decayed and mouldy cheese!* Popular opinion (which just means credulity), and popular experience (which oftenest signifies

confusion of causation), argues Mr Johnston, confirm this doctrine, while Chemical Science *explains* it by the fact that decayed curds produce fermentation in moist substances! We answer—that in this case, *Chemical* Science 'explains' what is NOT Physiological Fact—so that Mr Johnston's science becomes simply ridiculous. The mouldy cheese fallacy.

Common sense is quite sufficient to convince us that *putrid* matter (whether it be decayed flesh or curd, game or rotting-cheese) must be injurious to the body, and an exciting cause of disease. A man in strong health, with abundance of gastric juice, may certainly indulge in such offensive matters with comparative impunity; for it is ascertained that the putrescent fermentation they set up is *counteracted* by the metamorphic action of the stomach juice, so that digestion is delayed until they are rendered sweet; but the *tendency* is evil in all, and dangerous in a high degree to the majority of persons. Mr Johnston, moreover, perpetrates a fallacy in his use of the word 'fermentation,' which does *not* signify the same in its generic chemical sense of metamorphosis, as in its original, popular, and proper sense. *Fermentation* of cheese, sugar, and flesh, is attended with the *liberation* of gases; and hence in indigestion we have flatulence, acidity, etc. Now, whatever originates this kind of decay, directly antagonizes the change which takes place in the *true* digestion of albuminous food (the only food that needs digestion, since starch, sugar, and gum *dissolve* in water); and also sets the saccharine matter fermenting, or in other words, converts the stomach into a brewer's vat!

How any one who truly comprehends the plan of nature—who sees how perfect and unbroken are the steps whereby dead matter becomes organized, and is lifted up from its simple to its binary, and from its binary to its quaternary compounds, as they exist in every vital organ and tissue—how such an one can at the same time believe that the albumen *to which the taint of rottenness is communicated*, is thereby fitted to take its place in the vital temple—is to us inconceivable.

And here we would give the wise caution of Lehmann, a physiological chemist with whom Mr Johnston cannot even be compared: "It is unscientific to rest satisfied with the *fiction* that all exciters of fermentation are substances undergoing changes. All fictions that close the door on enquiry and experiment, are to be rejected, unless they admit of a logical justification"—which Mr Johnston's fiction certainly does not.

Further, the *gastric juice* is very unlike decaying cheese; for, as Lehmann observes, "it remains for a very long time *undecomposed*, and even when a fungous growth (mould) has appeared, it still retains its most essential character." The agent selected by nature for digesting our food is thus very different from the *aid* recommended by Mr Johnston! Need we ask which is likely to be right?

But the recommendation of rotting-curd is grossly inconsistent with that of rum or whisky; for if the former is a ferment or *septic* substance, the latter is certainly an *antiseptic* or preserving element which prevents the fermentation of albumen and fibrin, and is used

for this express purpose by the surgeon who desires to preserve his morbid or normal specimens. Thus our chemist blows hot and cold at a breath!

Mr Johnston, as a mere reproducer of other men's stuff. Incapable of rigid scientific enquiry, but with a strong theorizing disposition, we find him grasping at the weakest and most fanciful notions of others, and reproducing, as *science*, after a long interval, what is only an exploded *opinion!* We will justify this severe verdict by two examples.

The *creatine* or soup fallacy.

In his chapter on "the Beef we cook," he reproduces the extraordinary *soup-recipe* of Liebig, who maintained that the *creatine* (or gravy element) of flesh was its true nutritious part, and that the great mass (or 99 per cent) of the solid matter was just as worthless as chips!

Now Professor C. G. Lehmann has long since dissipated this delusion. Referring to its alleged nutrient character, and to its containing nitrogen (its formula is C_8 H_9 N_3 O_4), he says:

"It may be assumed that nature would not suffer substances even more highly nitrogenized than *creatine* (as the *creatinine* discovered by Liebig in the urine and urea) to *escape thrö the kidneys*, if they could be employed to further advantage in the organism, since we find so careful a providence over recognized nutrient matters (as for instance, albumen), that even in disease they are only rarely found to escape with the excreta. The occurrence of *creatine* in the decoction of flesh affords even *less evidence of its nutrient powers*, for when we consider the small quantity in which it occurs in flesh, and the truly infinitesimal nature of the dose which we take with our flesh meat and broth, we must regard its simultaneous appearance in the urine as a proof that its properties are not very highly esteemed in the organism. . . . Liebig's chemical investigations, indeed, even unsupported by physiological proof, constrain us to regard creatine as a *product of excretion*—a member of the series indicating regressive metamorphosis from the point of the highest atomic weights to bodies of the simplest composition." *

This blunder reminds us of a similar one in regard to Coffee—which Mr Johnston, on chemical grounds exclusively, as with creatine, ranks as nutriment! The great German shall again answer the Durham lecturer.

Coffee not nutritive.

"The analogy which, in its chemical relation, and in its constitution, creatine presents to *Caffein*, might *tend to mislead those who class this substance among nutrient bodies*, from its occurrence in certain kinds of food and in certain stimulants. But *we can not place Caffein among the nutritive agents* without giving a very great latitude to the term. A substance of which a quantity from 2 to 10 grains will produce the most violent excitement of the vascular and nervous systems, *can scarcely be reckoned amongst articles of*

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* *Physiological Chemistry*, vol. i. (Leipsic, 1849).

nutrition, even by the homœopathist, and *certainly not by physiologists*, when they learn how quickly caffein becomes *decomposed* in the organism." *

The style of this book is slip-shod, the reasoning mere rigmarole; and while some of the original phrases (as spirituous milk and '*experience*-born'!) are palpable contradictions, the best passages are wholesale plagiarisms.

The *instinct* fallacy.

The great argument of the book, repeated *ad nauseam*, is this: "Narcotics are a normal *want* in the body, because in all ages and "countries some kind have been sought out or manufactured." † This is both infamous morality and invalid logic. It might be as justly said: "*Sin* is a normal want of the soul, because in all ages and places some kind of sin has been committed"! Or, "Ghosts are objective realities, because in all ages and countries some people have seen, or believed that they have seen, ghosts." The *variety* of the ghosts is to us a decided objection—appearing as they do,

'Black, white, and grey,
'With all their trumpery.'

The disgusting variety of stimulants, from weak tea to strong opiates, and from coffee and mushroom to arsenic and mercury, equally renders it *incredible* that the body has any such *normal* wants.

But that God should really have designed us to use as daily bread *what is pregnant with deception and danger*—that he should have implanted within us an appetite for the 'malignant' narcotics in which various races actually indulge (as they indulge in sin)—seems to us a blasphemous proposition, which we cannot but reject with abhorrence. What does Mr Johnston himself say?

Plagiarism.

"*The peculiar danger* attendant upon the consumption *of intoxicating drinks*, arises from *their extreme seductiveness, and* from *the all but unconquerable strength of the drinking habit when once formed. Their peculiar malignity* appears (where they once have obtained a mastery) in becoming *the parent and nurse of every kind of suffering*, immorality, *and crime.*"

This is one of the best paragraphs of the book—we have only to

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* *Ibid.* The statement that Tea and Coffee *lessen waste* is simply assumption. What is known is, that, like *Tobacco* and other narcotics, they *keep effete matter within* the system. That they *excite* the body is manifest: do these *Tea-tattlers* believe action can occur *without waste?*

† The old adage, *omnium consensus naturæ vox est*, can not be pleaded for strong-drink. Whole nations, for long ages, have been without it, and *nature* has surely not supplied it. She would scarcely give a *voice* without an *object.* Dr Arthur Thomson says;—"The New Zealanders will drink spirits if it is given to them, and they like the excitement it produces; but a New Zealander with a shilling in his pocket *will rather purchase a loaf* than a glass of spirits. Scurvy is a rare disease,"

add, every word in italics is an unacknowledged citation from Mr Edward Baines' well known testimony to the merits of teetotalism, the word 'wickedness' there, being exchanged for 'immorality' here, and the phrase "where they have once obtained a mastery" being interpolated. Now this completely spoils the sense of the stolen words, since the danger does not arise *from* the issue, but from that malignity which *generates* the beginning of the end—from that which de-normalizes the nature, and *thus* obtains the malignant mastery.

THE BIBLE WINE QUESTION.

THAT the true nature and bearing of this enquiry may be apprehended without prejudice, we will place before our readers an imaginary, but perfectly parallel case, concerning a people in the farthest East, suggested by a passage in the narrative of Cook's Voyages in the Indian Archipelago. It is only requisite to premize, that *tuac* or *djuac*, perhaps originally *shuac* (sweet juice), is one of the oriental names for PALM WINE, otherwise called *neera*, *mera*, *gula*, *goor*, *segoor*, *sura*, *shir*, *tari*, and *tadi* (*i. e. toddy*); and that the priests of India, as well as their sages and physicians, had always taught and practised *abstinence* from *intoxicating* toddy. "This liquor" (toddy), says PERCEVAL, "when drank before the sun has caused it to ferment, is very wholesome and cooling; but, upon being fermented, becomes intoxicating; and, *in this state*, is well known to the European soldiers. The Tirinanxes [Priests] are totally debarred from wine." (*Account of Ceylon*. p. 220-2. Lond. 1803.)

The question stated.

Suppose, then, that we had before us some antique sacred book of the age of Buddha or Gotama, in which it was recorded that a prophet had appeared amongst the people of Java and Savu—one whose advent had been foretold by an angelic messenger; who commanded, moreover, that he should, from his birth, neither eat *benj* or *betel*, nor drink *tuac*. Further, suppose, that after this prophet had preached repentance to the people, he gave place to a still Greater Teacher, who, inculcating the doctrines of purity and brotherhood, spoke as never man spake before him; telling of his Father in Heaven, from the bosom of whose eternal love he came forth to announce the great truth of reconciliation, thrö the abandonment of sin and faith in God.

A perfect parallel.

It seemed, however, that, as the teacher of a more universal doctrine, he was, in several respects, *distinguished* from his precursor. While one used only the products of the wilderness, the other came 'eating and drinking' of the common diet of his day; and even had *once*, on the occasion of a marriage feast, transformed *water* into *tuac*, for the service of the guests.

Suppose, now, that after a lapse of two thousand years, the Javanese and Savuans had become lovers of 'strong drink,' and even of those narcotic drugs, *benj*, *betel*, and *opium*; that preferring 'evil to good,' and 'bitter to sweet' (Isaiah v.), intemperance had become so rife, that the very malignancy of the evil had originated amongst the religious remnant of the people, who cared at all for the purity and prosperity of their country, not only a fervent desire for reform, but an *organization* and an *advocacy* for effecting it. The problem is, What truth or soundness would there be in a defence set up for *drugs* and *strong drink*, by the Javanese tipplers, and based upon the following allegations—

The tippler's case.

1. "That *tuac* was a term denoting an intoxicating drink, which had not only been commonly used, but even miraculously created by the Divine Teacher, and must *therefore* be 'a good creature'!

2. "That while the preparatory prophet had *ascetically* abstained from the ordinary articles of diet and drink, the great Master so came '*eating* and *drinking*,' that he had been reproached by his enemies as a 'gluttonous man and a wine-bibber,' and therefore he must have used *all* those things from which his precursor abstained.

3. "That in the writings of the earliest disciples of this great Teacher, his apostles are *silent* as to the sin of eating *benj*, smoking *opium*, chewing *betel*, or drinking *tuac*; and therefore, that an 'eleventh commandment' on this point is unwarranted and presumptuous"!

A Scotch inference.

A people called the Scots may be supposed to have embraced this religion of the East, and to have carried the argument to its climax.

4. "Everybody knows the meaning of *toddy* here, which our dictionaries define as 'a *spirituous* beverage much used by respectable citizens.' It is 'the fruit of the *palm tree*,' in which the great Teacher instituted the sacrament, and the same as the Indian *tuac*, or *toddi*"!

The temperate Javanese, as well as others who had adopted their sacred books in Britain and America, along with the philosophical critic, might contest the accuracy and logical sufficiency of these premisses—

Answers.

First, They might urge, *as a question of language*, that *tuac*, being a generic term for palm wine, examples of its application to intoxicating *tuac*, furnished no proof that it *excluded* unfermented palm wine as one of the species of which it was the generic designation. They might properly insist, that the history of language teemed with examples of the change of words from a narrow to a wide comprehension, and the contrary (as *toddi*, for instance, which, tho it first signified sweetened palm juice in India, and never a *spirituous* drink, now meant exclusively *spirit and water* in Scotland); that, therefore, it was a hasty and unauthorized assumption to put an exclusive or technical sense upon the word *tuac*, especially where we had every reason to believe in a wide difference between its modern and original uses.

1. Lingual fal acy.

Second, They might contend, *as a question of logic*, that the *general* contrast between two persons, one of whom abstained from *every kind* of *tuac*, and from the ordinary diet of men, while the other 'came eating and drinking,' does not imply that one must have used *every specific article* from which the other abstained; but simply, that he took the food and beverage generally used in his own classs and age. Provided he drank *any kind* of tuac, or eat any sort of food in common use, his practice would still *contrast* with that of his forerunner.

2. Illogical contrast.

Third, They might object on *the ground of the moral character of the great Teacher*, that it was exceedingly improbable, and even slanderous, to suppose, that He who came to confirm the teachings of the ancient sages—sages whose writings denounced the practice of using *drugged* liquors, and prohibited to the princes and priesthood of the country even the desire for intoxicating *tuac*—did, nevertheless, use such things Himself, and actually sanction the *drugs* and *drinks* consumed by the sensualists of his day, whose abounding iniquity he came to reprove! Recalling the fact, that the prophets who had preceded him, and the sages and physicians of the continent of India, had

3. Moral objection.

taught the purer and safer doctrine of abstinence, the reasonable doubt would necessarily arise, "Whether *such* a Teacher was indeed superior to his forerunners?" That some mistake had been committed by the authors of this supposition would be rendered probable by the undoubted fact, that the immediate and earliest disciples of this Divine Teacher had *certainly* themselves practised (not ascetic abstinence from *every* kind of tuac and dietetic luxury, but) abstinence from drugged and fermented palm wine, from benj, betel, and other *similar excitants*.

4. False exegesis.

FOURTH, They might *as a question of exegesis and theology* to the third allegation object, that *silence* was not sanction—that revelation concerned great facts and principles, not the manifold details and ramifications of duty in practical life—that knowing the general end of action, it was left to the exercise and development of our *natural* faculties to discover the right means to particular ends, in other words, the fixed *causes* of good or evil—that special revelation did not concern matters of meat and drink, to which experience and science were adequate—and that it was an awful and pernicious opinion to hold, that supernatural revelation was given for the purpose of eclipsing rational light, or abrogating natural law.

5. Mistake of fact.

FIFTHLY, They might establish, *as a question of historic fact*, not only that the allegations of the Sensualists were hypothetically inadequate as proofs, and therefore not entitled to regard, but that they were positively based upon ignorance and falsity. The testimony of a great circumnavigator, ‖ for example, might be cited, * to show that TUAC was a term applied to palm wine *in several different states*—in one of which it was really a saccharine and innocent drink called *tuac manise*—in another, a fermented harsh drink, called *tuac cras*—and in a third, a very strong, bitter, and drugged liquor, called *tuac cuning*. They would readily admit, that the Great Teacher had sanctioned the use of that kind of *tuac* which His Father had created, but sternly deny the libellous assertion of intemperate men, that He—the Holy One—had ever consumed, or created for general use, that which even resembled the *tuac cras* or *tuac cuning*. To the reasoning of the Scottish *toddy* drinker, the same testimony would furnish the fullest refutation, showing, that notwithstanding the identity of name, the Hindoo *toddi* never did signify, nor even include, *distilled* spirit, but denotes first, an innocent, temperate drink; and second, fermented and intoxicating drinks, sought after exclusively by the sensualist.

‖ Captain Cook, 1770.

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*JAVA. "The *arrack* made here is too well known to need a description; *besides which*, the Palm *yields a wine* of the same kind with that which has already been described in the account of the island of Savu. ‖ IT IS SOLD IN THREE STATES. The first, in which it is called *Tuac manise*, † differs little from that in which it comes from the tree; yet even this has received some preparation altogether unknown to us, *in consequence of which it will keep eight and forty hours*, tho otherwise it would spoil in twelve—IN THIS STATE IT HAS AN AGREEABLE SWEETNESS, AND WILL NOT INTOXICATE. In the other *two* states it has undergone a fermentation, and *received an infusion of certain herbs and roots*, by which it *loses its sweetness*, and acquires a taste *very austere and disagreeable*. In one of these states it is called *Tuac cras*, and in the other *Tuac cuning*, but the specific difference I do not know; in both however, it intoxicates very powerfully. (KERR'S *Coll.* xiii. p. 446.)

‖ See vol. ii. p. 148. Also p. 70.

† *Manise*, 'sweet.'

"*Shecar* shall become *bitter*." Isa.

UNBELIEVERS AND THE BIBLE.

WHETHER we regard *the relation of the Bible to the natural truths of temperance* as abstainers, or as Christians, it will be found not only inexpedient, but pernicious and futile, to strive to stave-off enquiry on the subject. As with the question of slavery, so with this. If the friends of the Bible do not settle the matter, its foes undoubtedly *will*. In England and America the attempt to arrest thought at a particular point miserably failed, both on the question of slavery and of strong drink; and at last, when the dilemma was driven home, (by Mrs Stowe, with reference to the one theme, and by some English writers as to the other,) the question was probed to the bottom. In the meanwhile, the alarm of many of the clergy as to the discussion of the question itself, their manifest timidity, their unconvincing dogmatism on the one hand, and their accordance with the sceptic's interpretation of the Bible on the other, served to strengthen the hands of the enemies of purity, of liberty, and of truth.

Modern experience and science have now clearly determined *the essential deleterious character of alcoholic drinks*. From this there can be no successful appeal; and men can only shut out conviction by shutting out evidence. Taking this ground, the immovable ground of physical truth, the modern sceptic revives the objections of the English deists of the seventeenth and eighteenth centuries, but revives them with a terribly-increased power, subtlety, and conclusiveness. Dr Strauss, in Germany, and the *Reasoner*, the organ of Secularism in England, are even now busily engaged in reproducing those objections to holy writ, which, in relation to the marriage at Cana, and the temperance question generally, are intended either to discredit the miracle of the transformation of water into wine, or to place the sanction of scripture in antagonism to the verdict of morality, experience, and science.

Referring to the last edition of the *Leben Jesu* of the German sceptic, and having our attention called to an article on 'the Bible and Teetotalism' in the *Reasoner* for September, 1854, we have been shocked to find that the chief weapons of the Unbelievers are drawn from the armoury of Christian divines, and that the sceptic mocker of the Bible, and the professional expounder of holy writ, are ranged side-by-side against that school of temperance reformers which maintains the *harmony* of the divine word and works. There is not a principle of interpretation, not a single assumption of any importance, which the assailant of the Bible requires for his purpose, that is not borrowed from the books of the orthodox believer! Surely this is a fact which should startle the Christian drinker into reflecting, whether it is not possible that he may have been thoughtlessly occupying, not only a dangerous, but a thoroly *false* position? In the spirit of perfect tol-

eration, and of manly humility, we beseech a renewed and impartial examination of this important topic. A few passages will illustrate the unity of conception, and the identity of stand-point, between the revilers of revelation and the common expounders of it.

1. "*Wine,*" says the Christian drinker, "*is not wine unless it be fermented.*" So objects that arch-infidel of all time, Dr Strauss—"The wine at Cana was *no wine.* 1st. Unless other elements were put *into* the water. 2nd. Unless it was organically *individuated* to the vine. 3rd. Unless it had gone thrö the natural *processes* of growing, blooming, ripening, etc. 4th. Unless it had been artificially *pressed out.* 5th. Unless it had been accelerated by the further natural *process of fermentation.*" The German professor is more subtle than the British drinkers, who make the *last* process essential to their notion of 'wine,' but omit the former. Neander rightly objects—"That we are not justified in inferring that the water was changed into *manufactured* wine; but that Christ substituted his creative power for various natural and artificial processes; that he *intensified,* so to speak, the powers of water into those of wine. Indeed," he adds, "this latter view of the miracle conforms better to its spiritual import than the former. It is the peculiarity of the work of Christianity *not* to destroy what is *natural,* but to ennoble and transfigure it, *as the organ of divine powers.*" The idea of this passage is excellent, but imperfectly carried out. The simple water *is* ennobled by a transmutation into *natural wine*—'the wine of the cluster'—while the 'wine' that 'is a mocker' is *not* the organ of divine, but rather of dæmonic power. He who wishes to be full of the Holy Spirit must not be full of wine. Hence, in Ephes. v. the apostle places them in antithesis.

Dr Strauss' view.

Neander's reply.

2. It is common for divines (take Dr Cumming by way of example), in their explanations of scripture, *to assume that 'wine' and 'alcoholic wine' are necessarily synonymous phrases;* and they illogically put the latter for the former. The writer in the *Reasoner* does so likewise. It is the same fallacy as if he were to change everywhere the word 'spirit' into '*evil* spirit,' or the word 'man' into '*black* man.' No allowance is made for the generic meaning of the word, or for the context, which is nevertheless an important element in every just exegesis. Thus, when Solomon *ironically* refers to the evil custom of drowning dull care with strong drink—as much as to say, "Give strong drink to such, if you will, but let not the really wise and great, or the kings and princes, to whom judgment is committed, even *drink* such things, lest they pervert justice"—the *Reasoner,* like the tippler, quotes it as grave counsel!—adding, "If this be not a licence for a degrading vice, *to drink until you are oblivious of care,* I know not what is." And what answer can the drinker give?

Verbal quibble.

3. Even in condemning the explanations of the teetotalers, the drinking believer and the sceptic are at one; they both pronounce the harmonizing views to be '*flimsy and unsupported by fact.*' Of course, they both fall into the pit of confusion together, commingling texts in the conflict in which the words of the original are altogether different! Instead of 'rightly dividing the word of truth,' *hemer* is confounded with *yayin, ausis* with *tirosh,* tirosh with *gleukos,* and any one of them

Confusion of words.

with *shemarim*, *eshishah*, or *sove!* The distinctions of the document to be interpreted are virtually trampled upon; by the one party, to support a sensual appetite; by the other, to bolster up an opinion.

In Judges ix. 13, says the *Reasoner*, *wine* is spoken of as '*cheering God* and man,' and an irreverent comment is added which we cannot quote. Now, the very same word which is here translated cheering, is applied to *corn* in Zech. ix. 17; so that it can not here mean 'intoxicating'; while in Isaiah lxv. 8, the same word that is in Judges ix. translated wine, occurs with this distinct explanation: "Thus saith the Lord, As the WINE is found *in the cluster*, and one saith, Destroy (lit. ferment or corrupt) it not, for a blessing is in it."

4. As to *facts*, the sceptic and the drinker assume whatever are required. From the simple word '*wine*' in Paul's advice to Timothy, they make it out that Paul recommended Timothy "to *stimulate* his stomach with the moderate use of *alcohol*"! If they would dip into Pliny, or even into Thompson's *Materia Medica*, Moore's 'Letters from Italy,' or Russell's 'History of Aleppo,' they might find *facts* of a quite other sort. In wine countries, the use of grape juice, both fresh and boiled, is a common cure for dyspepsia and debility. But what are facts to those who don't want them?

The *Reasoner*, it is but fair to add, admits a reply which has the obvious effect of modifying the objections of the assailant, and of producing a more reverent tone of treatment. The writer in the *Reasoner*, indeed, confesses to have "a great reverence for the Bible," which we are glad to hear, since otherwise one could never have guessed it from the fact of his invariably putting the *most evil construction possible* on every text commented upon, even where an innocent and probable interpretation was at hand. In this also, he but treads in the footsteps of the orthodox wine-bibber.

THE OBJECTION FROM LIMITED PROHIBITION.

MAN being essentially a *progressive* being, God's revelation of Himself, and of his Will to man, must necessarily partake of the same form. Pearls are not cast before swine, nor are the highest truths declared in the lowest and most sensual ages, or to the weakest and most barbarous races. As the dawn precedes the morning light, and that the meridian glory, so Patriarchalism went before 'the law,' and Mosaism before Christianity. God *permitted* many things to the Gentiles which he did not to the Jews; and he *allowed* also to the Jews, "for the hardness of their hearts," that which was neither seemly in itself, nor the subject of bare *toleration*, much less of *sanction*, in the more perfect dispensation which Christ introduced. Pregnant examples of this are seen in the Jewish practices connected with polygamy and divorce, slavery and strong drink. Neglect of the principle explained gives rise, not only to confused and false criticism, but to practical evils of the most polluting and pernicious character.

For instance, one commentator says that the apostles do not reprobate *slavery* in essence, but only its *abuses;* while another argues that the Bible only speaks against 'the *excess* of wine,' or 'too much,' not against *wine itself*. The arguments are worthy of each other. To see whither they will lead, we have only to put them in the form of a syllogistic sillygism :—

"*What is only prohibited in excess is in lesser degree sanctioned.*
"But only the worst forms of slavery and polygamy were prohibited.
"*Ergo*, slavery in essence, and polygamy in nature, were *sanctioned*."

Logic of Tyrants, Turks, and Tipplers.

Now for another application of the principle, founded on the words of the authorized version of the New Testament :—

"*What is only prohibited in much, is permitted and sanctioned in little.*
"Now PETER, in his First Epistle, reprobates '*excess* of wine,' and '*excess* of riot;' and JAMES, in his Epistle, a '*superfluity* of naughtiness.'
"*Ergo*, Christianity tolerates and sanctions, a *little* wine, a *little* riot, and a *little* naughtiness!"

The facts however are—that in the Bible *all* wine that is a mocker, like *all* drugged wine, is absolutely denounced, tho not in these texts; while, in the use of good wine, *wherein* there is no deceiving quality, the abuse only is prohibited. *

This principle is shown to be absurd by applying it even to proverbial language.

"Despise not thy mother *when she is old*" (Prov. xxiii. 22). Does this imply that it is right to despise her when she is *not* old?

* See vol. ii. p. 95. Classical writers show, that the excessive use of *sweet, unintoxicating* wine, was a vice of the Greeks and Romans.

"Oppress not the afflicted *within thy gate*" (Prov. xxii. 22). Does this imply that it is proper to oppress the afflicted when *out* of one's gate?

Argumentum ex absurdam.

To evince, further, the folly of the assumption, that silence is sanction, or limited prohibition equivalent to positive approval of the lesser degree, we will take a case about which nearly all are agreed.

Weisinger, in his continuation of *Olshausen's Commentary*, has the following apposite passage:—

"1 Tim. iii. 7.] The qualification, *husband of one wife*, professedly implies a special reference to the bishop, FOR THIS IS NOT REQUIRED OF ALL. "And do not νηφάλιος [lit. *abstinent*], σωφρων (*prudent*), κοσμιος (*modest*), "denote qualities such as *especially* befit a bishop?"

Thus the German commentator, reasoning on the false principle that *silence implies sanction*, virtually teaches, that, because the bishops only, here, were required to be the husband of one wife, and commanded to be abstinent, prudent, and modest, all others were allowed to indulge in polygamy, and were *under no obligation* to cultivate the virtues of abstinence, prudence, and modesty!

Some years ago, an advertisement appeared in the Edinburgh papers, from a Baptist deacon, who, having *one* wife already, desired a second: which, as he alleged, was proper for a deacon, *because* polygamy had been forbidden only to a bishop! We certainly admire his critical consistency, while we repudiate the principle on which he argued, as false and immoral. Nevertheless, as to the wine question, his method is followed by great numbers of professing Christians. They might just as well argue, however, that the σωφρων (*prudent*), and κοσμιος (*modest*), are *not* binding on simple Christians, because they are given in the mandatory shape only to Bishops.

The pleas for Slavery and Strong-drink the same.

A plea for American slavery is now before us, entitled *A South-side View of Slavery*, by NEHEMIAH ADAMS, D.D. (Boston, 1854), which is based upon this very principle, namely, that partial prohibition implies the rightfulness of the thing or practice within certain limits, and that it is wrong *only* beyond these. Hear how this divine apologizes for the sum of all villanies!

"When the Hebrew nation was organized by the Most High, he found among the people masters and slaves. But he did not *purge out* the institution by *positive* enactments; he did not cause the dead bodies of the slaveholders to fall in the wilderness, but made slavery *the subject of legislation*, and protected the parties concerned in performing its duties. So also the New Testament, tho it breathes a spirit fatal to *oppression*, counsels no measures against it, *teaches that the relation of slavery is not sinful in itself*, nowhere assails the institution, and instructs and exhorts masters in regard to their duties as slaveholders. The case of Onesimus, a fugitive slave, 'who is sent back to servitude with an inspired epistle in his hand,' is a touching exemplification of the tenderness of the Lord toward the '*principle of ownership*' in human beings."

Such is the conclusion, rightly enough drawn, from the false critical assumption with which Dr Adams starts. But, unfortunately, every part of the argument is equally applicable to *polygamy*. That, too, was not 'purged out'—that, too, had its 'positive enactments': but

was the *relation* therefore RIGHT *in itself?* Answer, Dr Adams, without evasion. Christ declares that it was *suffered because of the hardness of their hearts:* and who will *dare* to contradict a declaration which stamps upon the relation eternally the brand of SIN ?—for what is opposed to the will of God and to the known laws of nature, *is* sin, notwithstanding every quibbling attempt to justify it.

Dr Adams even blasphemes Providence to sustain the iniquity.

Providence cited to rivet the chains of the Slave.

"That small epistle to Philemon, that one chapter, that little piece of parchment, that mere note of apology, that this should have fallen into the sacred canon, and not the epistle to Laodicea, is curious and interesting to those who regard *the providence of God in the canon of Scripture.* That little writing is like a small, firm beach, where storms have beaten, but have left it pure and white. It is the least of all seeds in Paul's epistles. It is a curiosity of inspiration, a solitary idiom in a language, a Stonehenge in a country, a warm stream in the sea; it begins with loving salutations, ends with affectionate Christian messages, and sends back a servant to his master, and to a system of slavery under which this fugitive could, if his master required, be put to death." *

Dr Adams's whole tissue of rhetoric on this point is liable to the objection made to a similar attempt by a president of one of the New-England colleges. "I admire," said a staunch old divine, "the conservatism of the Reverend President. He has even written a book to show that slavery is *sanctioned* by the word of God."

"Ah!" replied the irreverent layman, to whom the remark was addressed, "I fear that if he makes out his case, he may excite a prejudice in some minds against the Supreme Being."

Even so are the pleas for strong drink in this land, based on similar perversions of the Bible, leading to similar issues. Lately, a writer in the *Reasoner*, a writer whom we have learnt is the son of an English clergyman, was engaged in assailing the authority of the Word, wielding the weapons which the Clergy have forged for him, to prove that the Bible *sanctions* what experience, nature, and science unequivocally condemn. At a recent meeting of the Free Church Presbytery of Glasgow, a Rev. Mr Gibson referred to this controversy, and while adopting the *Reasoner's* interpretation of scripture, perverts our language. Against both priest and sceptic, we maintain the counter thesis, that the Divine Spirit does not bless the impure and mocking spirit of wine.

Why the Apostles did not *denounce* slavery.

* The simple fact is, that Paul and the early Christians, laboring under the belief of the near approach of the end of the whole system of social iniquity, could not select a solitary evil for combat and special rebuke. Patience and watchfulness were the virtues taught—*for the Lord was at hand*, who would rectify all wrong at his coming. Their injunctions are directed to the practice of what depends on the *individual* Will.

THE MARRIAGE AT CANA.

THE miracle of the transmutation of Water into Wine at the marriage-feast has engaged the attention of Christian writers from the third century down to the present day, not only by way of exposition, but also by way of vindication.

Olshausen, one of the most clear sighted and able of modern commentators, observes, that "the miracle involves in itself something "very extraordinary, because Christ appears to have wrought a mir- "acle *without a moral end.*" We hope to be able to show, however, that this is a mistake arising from a defective stand-point, and that certain historical facts, generally over-looked, give a moral significancy to this miracle, and free it from all sensual taint.

Difficulties.

And, now, as to the ground of the difficulties connected with this miracle. They arise, firstly, from the supposition of sensual *excess* in the pleasures of a banquet,—aided, secondly, by the assumption that the wine was of an *intoxicating* quality. The charge of excess may be briefly disposed of by three considerations: first, the measure of wine is not definitely known, nor even whether the water in *all* the vessels, or that in the cup only (as Law and Semler contended), * was transmuted into wine; second, *methuskesthai* does not mean simply intoxicated, or 'well drunk,' but also very often *copiously* drank, even of the most innocent liquids. Moreover, the assertion refers to the custom *usually* followed, rather than to a fact concerning that feast. Thirdly, the want of wine on the third day of the feast, after a succession of visitors, in a family of humble life, is easily understood, without supposing that *those present* had consumed wine to any excess, and already got primed with liquor.

The best things brought out to strangers.

The second difficulty will require much fuller consideration. Here every thing must depend upon a just and luminous historical standpoint. No critics have explained this better, *in spirit and essence*, than Neander and Olshausen, tho they have sometimes erred in the practical application and detail.

(*a*) Thus Olshausen, in his comment on Matthew xxvi., says:—

"As in Paradise only the nourishment afforded by plants was made "use of; so the Saviour founded, instead of the bloody Passover, a "bloodless feast of the most simple means of nourishment. Amongst "them, the superior powers of life flowed to man analogously, as he "once, from the eating of the fruit, was subjected to the power of "death."

Olshausen.

(*b*) So again, Neander, in his admirable *Leben Jesu*, book fifth, says—

"It is the peculiarity of the work of Christianity *not to destroy what*

* Law's view is cited at page 59 of the *Standard Temperance Library*.

"*is natural*, but to ennoble and transfigure it, as the organ of Divine "powers ... We are not justified in inferring that the water was "changed into *manufactured wine*, but that Christ, by his direct agency, "*intensified*, so to speak, the powers of water into those of wine." * Neander.

(*c*) Once more, Olshausen, in his comment on Ephesians v. 17-18, even while falling into one error, elucidates in the same paragraph a profound but neglected truth. He thinks that "the μεθυσκεσθαι οἴνῳ "is put, by way of synedoche, for *all* modes of gratifying one's own lusts "[it certainly is the parent of many others!], because it invests *the* "*flesh* (σαρξ) with the government, and brings *the mind* (νοῦς) into a "servile relation. Instead of seeking strength in the *Holy Spirit*, "man, in his blindness, has recourse to the *physical* [unholy] spirit, "*i.e.* to wine and strong drinks: *therefore, according to the point of* The point of view of the Law. "*view of the Law, the Old Testament, in the institution of the Nazarenes*, "RECOMMENDS ABSTINENCE FROM WINE AND STRONG DRINKS, *in* "*order to preserve the soul free from all merely physico-spiritual influen-* "*ces*, and by that means to make it more susceptible of the operations "of the *Holy* Spirit."

Now it would be amazing presumption to assert, on a question affecting moral purity and spiritual development, that *the Old Testament point of view*, so remarkably exhibited in the greatest and last of the prophets under the Law, was a complete mistake, and that the *first* miracle of the Redeemer was designed to repudiate as false the incarnated wisdom of the preparatory dispensation! † We have already seen, indeed, that such was *not* the case, for the great Apostle of Christianity to the Gentiles (not to mention St Matthew, James the brother of our Lord, and Bishop Timothy) long after the day of Pentecost, held to precisely the same view which Olshausen has exhibited in the citation just given. That commentator must, therefore, mistake when, in his exegesis of John ii. 7-10, he asserts that "the Gov- "ernor of the feast, astonished at the *strength* of the wine, tells the

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* Let it be borne in mind, then, that alcoholic or *art*ificial wine can never be made until the natural is destroyed by fermentation. An extract from the *Legends of the Talmud* will further furnish to us the Jewish conceptions of the natural-wine which God bringeth out of the earth. "Joyfully the air saluted "the glowing vine, the heat of the sun penetrated its hard, deep grains, and "prepared that sweet moisture, the most precious beverage of man. Decked "out in the fulness of its rich grapes, the vine bent down to its preserver, who "tasted the *refreshing juice*, and called the vine his friend."

† A revival, however, of an old heresy. Thus (A.D. 130) Valentinus and his followers represent that "there were in Adam the three elements, *dark* "*matter (Hyle)*, light spirit *(Pneuma)*, and the mixture of the two, the soul "*(Psyche)*. The wild material man (the hylic) is subjected and related to the "evil Prince of this World, for the rebellious, dull, sulky soul of the world Dualism. "animates him ... *Law*, and works, and external forms, are all put under "him." (Vide Bunsen's *Hippolytus*, vol. i. p. 152.) Marcionism, again, "in "the past, saw *the principle of evil* in that which was the *preparation* for "the Gospel." (*Ibid.* p. 169.) Now the theory which would convert the miracle at Cana into a repudiation of the doctrine of the Law, is the legitimate offspring of Marcion's dualistic doctrine.

"bridegroom that, contrary to custom, he is giving the *best* last." It is a very gross oversight to suppose that the Taster would in a passing moment ascertain the *spirituous strength* of the wine!—What he would readily recognize would be, not its intoxicating power, but its *excellent flavor*. Moreover, it is an unauthorized and pure assumption that 'strength' was a test of excellence with the sober ancients. Pliny, Theophrastus, and the Rabbinical writings, evince that the contrary was the fact.

See vol. ii. p. 27, 169.

Olshausen, however, goes on to refute himself, remarking that "the "Fathers *justly* observe, that here nothing else occurred *than what is* "*annually displayed in a more gradual development of the vine.*" He refers to Augustin, in Joan. tr. viii., whose words are—*Ipse fecit* VINUM *in nuptiis, qui omni anno hoc in* VITIBUS. But 'the wine *in* the grape' is unfermented and unalcoholic: it is refreshing not intoxicating: like the 'new-wine' of the kingdom which is best when new. * If the Son did by miracle *no more* than the Father does by natural law, then there is no difficulty to overcome; nothing to shock our ideas of his Divine purity, or to conflict with the Old Testament teachings: but if the wine *was* alcoholic, then Christ did both much more than the Father does, and much different. Olshausen proceeds:—

Olshausen's approximate solution.

"The difficulties appear to me to be solved, or at least diminished, "by one observation.

"The first disciples of Christ were all originally disciples of the "Baptist. *His* manner of life—rigid, penitential austerity, and seclu- "sion in the desert—naturally appeared to them *the only one* that was "right. Whilst John dedicated them to a life of *self-denial*, Christ "conducted them to *pleasure*."

Olshausen has here hit on the right *method* of solution, but his facts-of-contrast require to be extended, and his words duly defined and limited. As regards the latter, for instance, Christ taught self-denial in *one direction* quite as much as John,—and the *only* pleasure which He sanctions, is pleasure compatible, in its *causes* and *consequences*, with moral purity and a divinely progressive life. As regards the 'wine' which is 'a mocker,' and the 'strong-drink' which is 'raging,' he brought no *license* for its use in opposition both to nature and the letter and spirit of the old Law. The only dispensation was in reference to *innocent* pleasures.

The history of the time, however, carefully considered, will show that while our Lord's sanction of Wine was designed to *contrast* with some facts and opinions prevalent at the period, it gave no shadow of

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* Bishop Hall (1630) in his *Contemplations* adopts this view, along with many other authors. Trench in his *Notes on the Miracles* (1850), says:— "He who each year prepares *the wine in the grape*, ... accomplished in an "instant what ordinarily he does not accomplish but in months" (p. 105).

Dr Cummings fallacy.

Dr Cumming, who generally follows Trench so closely in words and thoughts, adds however some indefensible remarks of his own. Amongst others, he says that "the secret of Temperance is in the soul." Now the real question is, What is the secret of *In*temperance? and to this we answer—the *physical tendency* of narcotics and stimulants to create a physical craving which antagonizes the moral nature and often abolishes the Will.

discountenance to the just distinctions and inspired teachings of the Ancient Prophets.

First, then, let it be noted that tho the Jewish sages denounced *some* wine as a mocker tending to corrupt the moral nature, they nowhere repudiated the *pure* blood of the grape, or decried the innocent enjoyment of God's good creatures, either at secular feasts or in religious festivals. This point of view is that of the modern Temperance society, and was that also of the Jewish Essenes * described by Josephus and Philo, and of many of the early Christians. Augustin refers to some Christians of his time, who, while denouncing *a* wine as a mocker, inciting to perverse speech and impurity, had no objections to *the juice of grapes*—which he amusingly regards as a very gross inconsistency on their part! The noble Clemens of Alexandria, A.D. 180, in his *Pædagogue*, lib. ii., expresses his admiration of these Christians, who, he says, "avoid wine as they would fire—for hence arise "irregular desires and licentious conduct. The circulation is hastened, and the whole body excited, by the action of wine on the system, "and the body inflames the soul." Bingham, in his *Ecclesiastical History*, refers to certain Christians who, in the sacrament, *used only* such "wine" as they "pressed out of clusters of grapes." Genuine teetotalism.

"Such Christians," says Neander, in his *Church History*, book i., "were called *Encratites* (or the Temperates), the zealous seekers "after Christian perfection, *continentes* (abstinents), ασκηται. Philos- "opher and Ascetic were synonymous." † Now, with the abstinence-from-bad-wine of *this* philosophy, there is nothing in the narrative of the miracle at Cana that in any degree conflicts.

Second, there were both individuals and communities who felt it their privilege and duty to practice an *extreme* abstinence, not from any positive error in respect to the things abstained from, so much as from the necessary limitation of natural knowlege in their æra, and out of regard to certain moral and social considerations appertaining to their special circumstances. We refer, for example, to the motives urging to the faithful and commendable abstinence of the *Rechabites*—to the vow of the Nazarite, and the Law of the Priesthood while Extreme and special abstinence.

* Neander truly observes of the moral and practical fraternity of the Essenes that they had "a profound veneration of the Old Testament." Now, tho in considering the influences that had operated on this celebrated school and spiritual section of the Pharisees, "we find our thoughts," as Neander says, "reverting naturally to old Oriental, to Parsic, Chaldaic elements—many ideas "from that source having been propagated among the Jews since the time of "the Captivity,"—it must be recollected that this could scarcely apply to their TEETOTALISM: because, first, the doctrine was *already* taught by Moses and Solomon in its true form and with its rigid limitations, and because, secondly, their veneration for the Bible which taught that "the fruit in the cluster" was *not* to be corrupted or destroyed "FOR a *blessing* is in it," would prevent the reception of the false exaggerations of the Persian dualist.

† It is also quite true, perhaps, as Hippolytus represents in the second century, (in his Treatise against Heresies recently discovered,) that some of the *Eucratites* held ultra and untenable views: but their doctrines, like those of the modern teetotaler, were also very often misunderstood and perverted.

wearing the sacred garments of their office. In that early unscientific age, *the people* were not likely to learn very readily the distinctions between natural wine and wine in its incipient or completed stages of fermentation—tho they knew well enough the PRACTICAL difference. Nay, we have even seen that at a later period, when the early Christians observed this distinction, the Bishop of Hippo, who could make such refined distinctions in his theological treatises, confounded the quality of the innocent wine-in-the-grape, with the noxious quality of the only wine from which the Law taught emphatic abstinence. Neither the Rechabites, nor the Prophets ending with John, however, ever held the doctrine that *natural wine was evil*, or that its rational use at the diurnal board or the joyous festival was intrinsically unlawful. Our Lord's conduct cannot contrast with the teaching of these abstainers, seeing there is no opposition—no *false opinion* to be overthrown. *

Spurious temperance.

Third, we must recollect another fact stated by Neander—viz., "that there were different kinds of *abstinent sects*." At the period of the Redeemer's advent, a doctrine was widely prevalent, the seeds of which, in spite of the distinct confutation it meets with in the record of this miracle, afterwards took root in the Christian Church and grew up to the poisonous heresy of *Manicheism*. Manes, indeed, but revived a doctrine long taught by the Magi of Persia and by some of the Priests of Egypt. We refer to the ancient doctrine of the *Two Principles*—Ormuzd and Ahriman—which represents the former as the Good-Spirit and father of light, and the latter as the Evil-Spirit, the creator of the *material* world, but the enemy of light and truth. This general notion, we can readily comprehend, would receive an emphatic application when directed to the Vine—the *supposed* source of an intoxicating agent whose connexion with evil has been apparent in every age and country wherein it has been consumed as human beverage. A Turkish proverb says—"A devil lurks in every berry of *the vine*."

The true contrast.

Here, then, was a doctrine and principle which divorced the outward, physical, and organic universe of GOD—the mirror of his perfection, and the instrument of his will—from the Spiritual Essence and Mental powers enshrined within the living Temple of the Body,—a doctrine of abstinence indeed, yet a very *spurious* offshoot from the oldest and most genuine Truth of Temperance, founded upon just and natural distinctions,—a doctrine, moreover, of such a baleful tendency in its relations both to Morals and Religion, that we, for our part, find in the direct and unmistakable antagonism to it of the miracle at Cana, *a wonderful significancy and depth of meaning*. Could Christ, in this *beginning* of miracles at Cana, to show forth the Father's glory, have selected *any form* of teaching more fitting, than one which in practically reclaiming to the sovereignty of THE ONE both the realms of Matter and of Spirit, was at once an illustration of the falsehood, and a prophesy of the final extinction, of Oriental Dualism?

* The fact that Paul, at a later period, still held to the point of view of the law, clearly shows that *he* did not understand the Saviour to have repudiated *all* the *basis* of John's life; much less could he believe the miracle to be designed for a *special contrast* to it, as Olshausen supposes.

It is a remarkable confirmation of the preceding view, that the *record* of this miracle should be found only in the latest of the Gospels, that of John—a gospel which, to every scholar, bears evident marks of *adaptation*, both in form and matter, to the Philosophy and Errors of the last years of the apostolic age.

Why John's Gospel alone records it.

Speculation, for a time suppressed by the portentous and absorbing events of which Judea had been the theatre, had now resumed its sway,—the old question concerning God, the Logos, and the origin of evil, including the Dualistic aspects of the problem, had again been revived, and were, not long after, systematically developed by Basilides, the Ophites, and Valentinus. Let the historic critic here ask himself the question, *Why is the miracle at Cana not recorded in the Catechetical Gospels?* and the true reason will not be very difficult to discover. Had the Evangelists, Matthew, Mark, or Luke, understood the miracle to have been wrought with the view of discountenancing the asceticism of the Baptist's disciples, we do not see why it was not distinctly preserved in their earlier gospels, when it would seem to have been more properly applicable, or why St John, at so late a period, should have selected it from a mass of unpublished material, to reproduce it in so peculiar a connexion. On *our* theory, however, all is transparent. As the Logos doctrine was reserved for a generation to whose philosophy it would be pertinent, so was this Miracle made prominent to meet a revival of the very error which it was originally designed to rebuke.

The knowlege of it orally preserved amongst the early Palestinian disciples, sufficed to check the growth of the Persian and Coptic Dualism; but a new generation has now risen up, a wider field of speculation has opened out, especially at Alexandria, and various foreign elements are mingling with the simplicity of the Gospel. Fragments of traditionary Truth, and aspects of Christian history, which had been excluded from the earlier summaries, are now fittingly recalled to meet the later developments of Theosophic speculation. Hence St John, with admirable appropriateness, in *settling* the question of the Logos (or Divine Reason), by taking it out of the mystical abstract-sphere (wherein the thought of Plato, Philo, and the Alexandrians revolved), and bringing it into the concrete and practical, identifying it with the light-within that enlighteneth every man, endues it with a saving-power—the power of Hope and Trust—at the the same time connects the Oneness of God and the Reason, with the absolute Mastery over Matter; thus illustrating the *great* Truth, first by the mystery of the Incarnation, where flesh becomes the consecrated Temple of Divinity, and second, by the Innocence of the organic, unsentient creation, virtually asserted in the transformation of water into "the *pure* (but aspersed) blood of the grape." As this doctrine was taught in the beginning of the Redeemer's career, so was it illustrated once more in the last social act of His gracious life, when he selected "the fruit of the vine" as the sacred emblem of His redeeming love.

The Logos doctrine.

It is a puerile interpretation which can give no higher meaning to so transcendant an exercise of power, than to suppose that it was put forth out of mere complaisance to Mary, or to please the palate and gratify the curiosity of the passing guests. Besides, while Christ's

ordinary life sufficiently contrasted with the asceticism of his forerunner to inculcate the humaneness of social intercourse, his connexion with a banquet at all requires justification by some high moral end,—since not only his enemies, but his professed friends, have perverted the fact to sensual uses, and shown themselves as eager to fasten upon his example for a feast, as to eschew it for a fast. We may, therefore, well doubt, in the first place, that miraculous power was evoked for the accomplishment of an end so trivial and needless, and, in the second, that Providence, half a century later, suggested the record of an event having so mean a purpose as the vulgar interpretation supposes. Surely there is some nobler and profounder significance in the emphatic ascription of *glory* to this event! Surely, for more than common ends was this miraculous power put forth!

It was to combat and to conquer, at the beginning of Messiah's mission, the great falsity of Dualism, by a practical, antagonistic demonstration of the sovereign, *undivided* 'Glory' of the Father. * Thus, for the same reason that the Master wrought the miracle in one generation, the Disciple records it in another—the one strikes at the root of Dualism by means of a regal Fact, the other summons the miracle from the realm of Tradition, to arrange it side by side with the most august of Truths, in order to confute the most momentous of Errors, which was again rising up to corrupt the church.

Contemplated from this true stand-point of history, the Miracle at Cana not only acquires a new theological import, but presents an aspect in perfect concordance with the scientific as well as moral aspects of Temperance. For, while

The Sensualist selected his wines, from mere taste; and
The Nazarites abstained from *all* alike, for special moral ends; and
The Dualist branded both good and bad, in ignorance:
The Saviour, in his perfection, distinguished.
THE TEETOTALER IMITATES HIS DIVINE EXAMPLE.

* Hippolytus observes, that "the Basilidians had invented endless Principles and Powers, and the 365 Heavens governed by Abrasax."

On the Logic of the Leader.

A London newspaper, *The Leader*, for October 11, 1851, fabricated an article on the Miracle at Cana, out of an impromptu remark elicited at an Exeter Hall meeting, from a celebrated comic artist, by a question put by one of the audience. That gentleman, we are sure, would be the last to put forth his opinions as critical authority, and after all that has been written and deliberately published on this topic by the Teetotalers, in their avowed organs and by *their* accredited *Leaders*, it seems to us that the 'Leader' was more politic than either courageous or candid, in ignoring the elaborate expositions, and pouncing upon a passing remark, loosely expressed and imperfectly reported, as *representative* of 'Temperance Logic'! But our smart friend shall speak for himself:—

"We have often heard this *intemperate objection* raised (that Jesus not only did not order the wine to be removed, but *went out of his way* to turn Water into Wine)—*never satisfactorily disposed of.*

"Mark well, the process of Temperance Logic: it proceeds from the negative to the positive!

'Jesus Christ is not recorded to have partaken of wine:
'*Therefore*, we ought not to drink wine'!

"*Four hundred gospels would not contain a rule of life in which* ALL *that we may partake of, and all that we must* ABSTAIN *from, is set down.* The gospels are not edited by Dr Culverwell; they do not profess to teach us, 'What to eat, drink, and avoid.' Nor was Jesus the founder of a sect, but the Prophet of Humanity."

Gospels not details of duty and diet.

Very true!—this last paragraph states one of our *own* principles, distinctly insisted on ten years before in our 'History of the Wine Question.' We are thankful for the *Leader's* able confirmation: and glad to find that there are some things from which we *ought to abstain* —notwithstanding that he shortly adds—"the man is to be pitied, not accepted as a lawgiver [or critic?], who knows *no mean* between *abstinence* and *abuse*"! Now, if we *are* to abstain from *some* things, and not use *every* thing, as the *Leader* implies—then there *is* no mean between abstinence from bad things and abuse, since the *using* of the bad thing is itself bad.

The *Leader* errs, however, in supposing that what he gives us, is a specimen of Temperance Logic. Let him prefix '*pseudo*,' and he will be nearer the mark. It is not the Teetotaler's logic, but the Drinker's *il*logic, which proceeds from the negative to the positive.

The Bibbler, as we have shown in a preceding article, argues thus:
"Where an act is not explicitly *prohibited*, it is implicitly sanctioned!
"Christ *did not* set up a Temperance Society:
"*Therefore* we ought to drink Port and Sherry!"

We have no such absurdities. *Facts* (of experience and science) convince us that alcohol is dietetically bad. The opponent says—"Christ *made* it and *drank* it." To this we simply answer—"Prove it." As no proof is possible, the proofless assumption crumbles away by its own weight: we have no need to direct our artillery against it.

The explanation of the Miracle, on historic grounds, is another question—one of Criticism rather than of Temperance. We hope, however, that, by *accounting* for it, we have at last "satisfactorily disposed of" it.

Reply to the Leader.

"But *did* He never partake of the juice of the vine? Is it presumptuous to suppose that He may have practically taught the *use*, as distinct from the *abuse*, of His Father's gifts?"

It is not presumptuous: nay, it is our belief that he *did* what is here implied. Our theory supposes it. He taught the *use* of His Father's gift, the *fruit* of the vine, as distinct from the abusive conversion of it into the wine which mocks and deceives; thus rescuing the true gift from the Dualistic aspersion of its being 'the blood of Typhon,' the enemy of light. * *This was the moral and theological significance of the Miracle*—the very fact that redeems it from every taint of sensualness and appearance of triviality, and, by the worth and grandeur of the truth it proclaims, lifts it for evermore above vulgar and intemperate abuse.

St Agustine.

* St Augustine says: "So, at water turned into WINE, who doth not marvel?—though God doth the same *in vines* every year."—(Oxford Edition, 1848.) He gives us the reason of the Saviour being present at the *marriage* feast: "For there were *to be* those of whom the Apostle speaks, *forbidding to marry*." If Augustine had known or considered the circumstances of the time, he would have seen that the principle adopted to explain the sanction of marriage, applied with greater force to the *miracle* of turning water into wine, since an actual, wide-spread error prevailed on the subject of the vine and its products.

CONTROVERSY IN THE 'REASONER.'

WE reprint this controversy on the subject of THE BIBLE AND TEETOTALISM, at the frequently urged request of several valued friends, and against our own original intention. It must be borne in mind, that as we wrote our views *for* the Secularist, and as desiring to impress the truth upon *his* mind, our propositions were sometimes *worded* differently from what they might have been in addressing merely Christian readers—a fact which one uncandid and bigoted Bibbler has so wrested as to subserve the purposes of falsehood and slander. One or two personal allusions, and some very irreverent reflections, made by ZETA, we could not conscientiously reproduce: but no tittle of the *argument* is omitted. The numbers within parentheses indicate the corresponding paragraph.

ZETA'S ARTICLE.

Zeta's attempts to put the Bible in conflict with Teetotalism.

(1) I am a teetotaler—a 'pledged' one—because I believe alcoholic drinks are unnecessary and injurious to health. I believe that drunkenness is a crime and a social evil. But I have not derived this belief from the Bible. I do not find that either the Old or New Testament is consistent in its doctrine on this subject. It does not appear to me that the Bible is so decided in its condemnation of intoxicating liquors as to justify Christians in becoming total abstainers. Quite the contrary. I think that those who sign the total abstinence pledge act in direct opposition, not merely to the letter, but to the spirit of the Scriptures.

(2) Moreover, I can prove that, tho the Bible denounces *habitual* drunkenness, and excludes 'drunkards' from the 'kingdom of heaven,' it does not place any bar against *occasional* inebriety, but rather sanctions and recommends it. A *little* sottishness is, therefore, allowable for an 'orthodox' Christian, and consequently no teetotal advocate can be truly regarded as a 'correct' member of Christ. My reasons for saying this are as follow.

(3) In the Gospel of St John we are informed that the first miracle worked by Jesus was the metamorphosing a large quantity of water into a large quantity of wine, and that, too, at a marriage merry-making, after the company had '*well drunk*,' and may be presumed to have imbibed a sufficiency. Now, had Christ thought that *alcoholic* beverages should not be introduced at festivities, and that the moderate use of them was hurtful physically and morally, here would have been a fine opportunity for inculcating his sentiments. Instead of this, however, he manifests his objections to the wholesome and invigorating water-draught, by miraculously converting several gallons of the simple fluid into a poisonous liquid.

(4) I am aware that it has been argued that this miracle-made-wine possessed no intoxicating property, but the argument is flimsy and unsupported by fact. The anxiety of certain parties to establish this point is very intelligible, * but nevertheless they have not yet succeeded in doing so, and probably never will.

* The allusion is not intelligible to me. The fact is, that ZETA and the 'Orthodox,' as he calls them, *row in the same critical boat.* F. R. L.

Zeta's objections.

(5) Again, we find St Paul, in his Epistle to Timothy (v. 23), saying—"*Drink no longer water*, but use a *little* wine for thy stomach's sake," and he also says that deacons are not to be "given to *much* wine,"—thereby showing that the moderate use of *alcohol* is desirable. * But as no specific quantity is mentioned—as no distinct line is drawn between the 'much' and the 'little'—each man must judge for, and be a law unto, himself. The authority of Paul is, therefore, strongly antagonistic to the teetotal theory and practice. That apostle *rebukes* his brother apostle for adopting teetotalism, and advises him to *stimulate* his stomach with what the teetotaler holds in abhorrence.

(6) We teetotalers affirm that the advocates of 'Moderation' are the worst enemies of the temperance cause, since they keep wide open a door we are striving to shut and bolt. If this be so, then the Bible, which preaches 'moderate' drinking, is likewise hostile to temperance, and, *a fortiori*, the foe of teetotalism.

(7) In the Old Testament, the praises of wine are repeatedly chanted. In Psalm civ. 15, "Wine that maketh glad the heart of man" is placed in the same category with "oil" and "bread which strengtheneth man's heart."

(8) In Judges ix. 13, Wine is spoken of as cheering "*God* and man."

(9) In Proverbs xxxi. 6, 7, occur these most startling words—"*Give* STRONG DRINK unto him that is ready to perish, and wine unto those that be of heavy heart. *Let him drink and forget his poverty*, and remember his misery no more." From which we may infer that to 'drown dull care' in 'potations pottle deep,' is now and then perfectly lawful and right, according to the doctrine of the 'inspired' volume. So that when a poor penniless wretch, half-starved and miserable, can contrive to obtain gin or whisky to make himself *obliviously* intoxicated—in short, dead drunk—he ought to get dead drunk, in order to extinguish the memory of his misery. If this be not a license for a degrading and disgusting vice, I know not what is. That King Solomon should have written such passages as those just quoted is perhaps not astonishing, when we reflect on the extreme laxity of his royal morals on other matters. He was shrewd enough to know that the *habit* of drunkenness was injurious, for he declares that 'the drunkard and the glutton shall come to poverty' and that he 'who is deceived' by strong-drink 'is not wise;' but that a beastly state of drunkenness was occasionally laudable and of utility, he is equally of opinion.

Noah. See Art. 'Wine,' vol. ii.

(10) When we turn to Genesis ix, we there read the story of Noah's drunken fit. This righteous man, whom God had blessed and saved from the general deluge, as soon as he comes out of the ark plants a vineyard, *manufactures* an *intoxicating* beverage, drinks to excess, and falls down blind-drunk in his tent, with his nakedness uncovered. His son, Ham, coming in, finds his worthy father in this disreputable plight, by whom he was subsequently cursed for having beheld the paternal nudity. Yet not a syllable of censure is uttered against Noah—he is not reproved for taking too much wine, and setting a bad example to his posterity. Possibly the author of Genesis, whoever he was, felt that after the forty days of perpetual water, Noah might be pardoned for his hurry to indulge in the fermented juice of the luscious grape!

It would be easy to enlarge on this topic, as connected with the *Christian* Scriptures, but I forbear for the present. My own notions remain fixed; and tho the Bible does sanction drunkenness to a degree or two, I hope never to break the deliberate 'pledge' I have taken to eschew all alcoholic abominations.

ZETA.

* ZETA argues as the *Leader* says that WE do—from the *partial* negative to the *universal* positive! The very *reverse* inference to Zeta's follows from the original, as I have shown in my New Testament lecture, vol. ii. F. R. L.

REPLY OF DR LEES.

ZETA has sent me his article. On some points I accord with him.

Fact the final basis of Teetotalism.

(1) I believe alcoholic drinks are unnecessary, and if of intoxicating strength, injurious to health in a sensible degree. I, too, have derived this belief from experience and science—not from the Bible; and should hold to it if all the Bibles in the world—the Vedas, the Zendavesta, the Koran, and the Jewish and Christian Scriptures—were opposed to it. But my belief is, that no one of them *is* opposed to the doctrine, but the contrary. * It is a matter of fact and of history, and, as such, should be treated and investigated; and I hope ZETA is willing to do justice to the Bible as to any other book. He, and Dr Cumming, Dr Campbell, and others, hold to the view that the Bible is hostile to teetotalism. Now, *I hold that every one of the doctrines of the teetotaler is taught therein.* In short, I believe that "wine is a mocker and strong drink is raging," and that, however, pleasant it may be in its first effects, "at last it biteth *like a serpent* and stingeth *like an adder*"—is, in short, as ZETA says, 'poisonous': and I believe that the Bible contains a declaration to this exact purport. But ZETA says he is prepared to prove to the contrary. Well, I am prepared to show that his proofs are no proofs.

The miracle at Cana.

(3) I admit that the Gospel of St John represents Christ as converting water into wine, tho the exact quantity is not known, and is of no importance. If the wine was really good, the more the better. I deny that there is any authority for affirming that *that* company then present had drunk much wine, or drank much afterwards. The governor merely refers to a proverbial fact, as to the general use,—a fact still true of ourselves, for to strangers we bring out our best things, and *then* that which is more common. At the Jewish marriage feasts there was a succession of company, and therefore no wonder if, on the third day, the wine of a poor family should become exhausted with an extraordinary influx of visitors. This, however, only *en passant*. But by what logic does ZETA change the word *oinos* (wine) into the two terms 'alcoholic beverages'? It is the same fallacy as if he were to change the word 'spirit' into 'evil spirit,' or the word 'man' into 'black man.' He begs the whole question by this magical transmutation of terms. Let him 'prove' what he can: I will not permit him to assume.

(4) ZETA says that it has been 'argued' that the wine possessed no intoxicating property, and pronounces the argument 'flimsy and unsupported by fact.' ZETA puts a false issue before his readers. I at least do not so argue; for I *know* nothing about it as a matter of fact, and I care nothing about it. The question is, Does *he* know that it *did* contain alcohol? If he wants the alleged fact as a proof, let

* I stated this to show that no 'superstition' (as Zeta might call it) prevents me from seeing a contrariety, if it exists. A Rev. Mr Gibson, of Glasgow, in the Free Kirk Presbytery, converts this into "I had *rather* surrender the Bible to the Atheist than Teetotalism to the Bible"!—as if I had some *willingness* in the matter! How *can* a man surrender *Facts* to the Bible? Galileo has answered once for all.

him prove it; at present he only asserts it. I may, indeed, *presume* the wine was not alcoholic?—but I do not profess to be able to prove it. Christ evidently held many of the views of the teetotal Essenes, and good and wise men of that day held many of the views of the teetotaler; and I think, *therefore*, it is not only possible, but probable, that Christ did make the right distinction in this matter. And what is possible, and not opposed to provable fact, I have a right to believe, so that I do not seek to impose the belief dogmatically on others. When I advance the belief as an argument, and not before, ZETA will be authorized to call upon me for proof. So, as he wants the converse for his purpose, I have a right to call upon him for proof.

Medical case.

(5) The medical text in Timothy has nothing to do with the question. A book may approve of wine as physic, but prohibit its use as luxury or food. "Given to much wine" is a phrase as applicable to good wine as bad—and it is again illogical to change the word 'wine' into the word 'alcohol.' Paul, therefore, is *not* antagonistic to our theory. Paul does *not* 'rebuke' Timothy—Paul does *not* recommend him to 'stimulate' his stomach. If ZETA were to peruse Pliny, or even to dip into Thompson's *Materia Medica*, or Russell's *History of Aleppo*, he would find that, in the East, the *sapa vini*, or boiled wine, is medically recommended for dyspepsia and debility. So ZETA draws another assumption from his own *un*knowingness, and calls it 'fact.'

Moderation.

(6) I, for one, do *not* reprobate 'Moderation,' for it is a manly virtue. But then it certainly does not consist in seeking pleasure at the expense of health, or in using as diet what has no dietetic adaptation whatever.

(7) In his criticism on the Psalms and Judges, ZETA most effectually demolishes himself. The wine that the Lord (or, if he likes, Nature) brings *out of the earth* along with corn and olives (or, as the Hebrew has it, 'food and fatness') is *not* alcoholic wine. It is that spoken of in Judges ix. 13, as acceptable to God in sacrifices, and cheering as food. But what says the context? "The Fig-tree said, should I forsake my *sweetness*?" Did that mean *alcoholic*-fig-wine? If not, when "the Vine said, should I *leave* my wine?"—why should that mean an alcoholic-wine that had long before been *brewed* and *bottled?* Clearly, it means either the grape-*cluster* or the grape-*juice*, neither of which is alcoholic. But the fact is not left in doubt. For in Isaiah lxv. 8, we find the *very same* Hebrew word; and what is the distinct explanation? "Thus saith the Lord, As the new-wine *is found in the cluster*, and one saith, destroy it not, for a blessing is in it."

Tirosh in the cluster.

(10) The same changes are rung on the same fallacies thrō the rest of the article, but I have said enough for the Truth-seeker and Truth-lover. One part of our argument is, that the bad wine produced bad results; and ZETA shows that the Bible, as biography and history, illustrates the proposition. *But the intoxicating wine, in no single passage, is represented as a blessing by God, but in many as seductive, deceptive, dangerous, and poisonous.* ZETA's article leaves upon me the disagreeable impression that he reads the Bible under the influence of prejudice.

'ZETA' TO DR LEES.

Zeta's reply

SIR,—I have read your reply to my article with much pleasure. A few words will suffice by way of rejoinder.

(1) The position you assume appears to be this: that *all* the wines mentioned in Scripture were not *necessarily* intoxicating; that those the habitual use of which is sanctioned by the 'inspired' writers, were invariably *un*intoxicating; and that fermented, alcoholic, intoxicating *beverages* are uniformly condemned by the Bible. Now, I am quite ready to grant the first of these propositions—viz. that the wines of Scripture were not all necessarily alcoholic, just as I grant (to borrow an analogy from yourself) that all the 'spirits' spoken of in the Bible were not evil-spirits, and that all the 'men' whose characters are there drawn were not bad men. I say I grant you this much, tho *I defy you to adduce any proof whatever that any one of the Bible wines were free from alcohol.* Whereas, on the other hand, it can be proved, that many of the said wines were intoxicating. Noah's wine was intoxicating, or it would not have made him drunk. The wine which Lot's daughters gave to their father was intoxicating—the result shows it to have been so. *And so on in a hundred other instances.* But what evidence, equally strong, is there for the existence of the *un*alcoholic wine? None. There is *no distinction* made between the Drunkard's wine and the Teetotaler's wine in the Bible. In the case of the Rechabites (Jer. xxxv), the distinction is not drawn between the alcoholic and the unalcoholic juice of the grape. The Rechabites drank *no* wine and planted *no* vineyards. The assumption, therefore, of the Scriptural-teetotalers of the present day, that this distinction of wines *did* exist, is purely gratuitous, and unsupportable *by Holy Writ.*

His 'principles' of criticism.

(2) I deny that the Bible is *uniform* in its condemnation of 'strong-drink.' Proverbs xxxi. 6, 7, supports the denial. I referred to this passage, in my former article, but by some oversight you omitted to notice it in your reply. In that passage, *drunkenness* is sanctioned by Solomon (or whoever wrote the book). Kings and princes are prohibited from tasting 'strong-drink' and 'wine,' lest they should pervert judgment; but the poor and 'those that be of heavy hearts' are *permitted* occasionally to drink to excess.

(3) With respect to Christ's conduct at the marriage feast, you say you do not care whether the wine he made were intoxicating or *un*intoxicating; and you confess your inability to *prove* that it was the latter. But unless you can prove this, or produce the passage where Christ, or his apostle, expressly forbids the use of intoxicating drinks, you are not entitled to affirm that Christianity *proclaims* the teetotal doctrine. You ask by what logic I change the word *oinos* into '*alcoholic*-beverage? Why, by the not unwarrantable process of reasoning, that as 'wine,' both in the Bible and out of it, *generally* means an intoxicating liquor, so it may be *presumed* to mean the same thing in *every* instance, unless special proof can be brought to the contrary. The *onus probandi* rests with you, not with me. As to the observation of the governor of the feast, I will merely quote the *opinion* of Mr Francis Beardsall, who holds your own views on the wines of Scripture:—"If the guests had not freely drunk, then the observation of the master was altogether inapplicable, seeing the good wine was furnished as usual, before men had well drunk."

False presumption

(4) My criticism on Psalm civ is objected to. But your 'argument' is merely an assertion. You say that the wine God brings out of the earth is not '*alcoholic*-wine.' I might answer that God, strictly speaking, brings no wine at all, neither alcoholic nor *un*alcoholic, out of the earth. What he does

give us is 'the grape,' from which both sorts of wine are *made* by man, so that if God does not give 'alcoholic wine,' neither does he give *un*alcoholic wine. Consequently, your argument proves too much, and 'demolishes itself.'

(5) I am sorry you should think I read the Bible 'under the influence of prejudice.' I would be just towards that, as towards any other, book. If I hold that the Bible is hostile to teetotalism, I hold the same opinion as Dr Cumming, and this you admit yourself; yet the reverend doctor's estimate of the Bible is far from being similar to mine. Dr Cumming may be prejudiced against teetotalism, for aught I know, but as for myself, I venerate the Bible, and protest only against what appears to me to be its errors and inconsistencies.

ZETA.

DR LEES IN REPLY TO 'ZETA.'

Dr Lees' reply.

(1) ZETA errs in supposing I assume certain things. I simply pointed out his assumptions, as rendering inferences from them invalid. My own case—showing the positive harmony of the Bible in various ways with the doctrine of teetotalism—I have not attempted, for to do so would absorb many numbers of the *Reasoner*. In volume second of my 'Works' this is already done—I hope to the satisfaction of candid readers. ZETA defies me to produce *any* proof that any one of the Bible wines was *un*alcoholic. All proof possible on such a subject as the interpretation of ancient books, is already abundantly adduced—proof that would be deemed more than sufficient if it concerned the Zendavesta, or the Greek and Roman historians. When we read that the 'treaders shall *tread* [Heb. *darach*] no *wine* [*yayin*] in their vats,' and of soldiers going out to 'gather *wine* and *summer fruits*,' and of the garments of the treaders being 'washed *in wine*,' we see all needful proof that the word, as used by the Hebrews, did include both 'the wine-in-the-cluster' and 'the pure blood of the grape.' Moreover, if philology is to go for anything, we find that several words which in the Greek, Arabic, Hindostanee, etc., express *un*fermented wine, are also found in the Hebrew, as *sapa* or *saba*, *gleukos*, '*mustum*,' *shechar*, sweet-drink. It would be a gross assumption, and neither candid nor conscientious, to assert that what in the cognate or derived languages certainly *included* unalcoholic wine, in the Hebrew *ex*cluded them.

The philology of the question.

ZETA further asserts that it can be proved that many of the Bible wines were intoxicating. Let us see. The words translated 'wine' are as follows—1, *Tirosh*; 2, *Æshishah*; 3, *Shemarim*; 4, *Mesech*; 5, *Yayin*; 6, *Ausis*; 7, *Hhamer*; 8, *Saba*; 9, *Hhometz*; 10, *Shechar*; 11, *Gleukos*; 12, *Oxos*; 13, *Akraton*; 14, *Oinos*. Now, which of these words *exclusively* represented *intoxicating* wine? The first was 'the fruit in the cluster.' The second was a preparation of grapes by fire. The third was grape-jelly, or 'preserves.' The fourth was sometimes syrup and water, and sometimes drugged wine. The fifth included 'gathered wine' (the *vinum pendens* of Cato), and grape-juice. The sixth, as its name denotes, was *expressed juice*. The seventh was the '*foaming* (not fermented) *blood of the grape*.' The eighth was boiled or *syrup* wine. The ninth was acid wine. The tenth was 'sweet-drink' (palm wine). The eleventh was also *un*fermented wine. The twelfth sour-wine. The thirteenth *un*diluted wine, irre-

spective of its nature. The fourteenth included *must* or 'new wine' (*gleukos*). I am at a loss to know, therefore, by what means ZETA is to prove what he asserts. All he can possibly show is (what forms part of my doctrine), that the 4th, 5th, 7th, 10th, 13th, and 14th *terms*, are *sometimes applied* to drinks that intoxicate (either alcoholic or drugged), but certainly not that they *exclusively signify* such drinks. He is falling into his old fallacy again—as if because 'man' could be *applied* to a black man, it must, therefore, *signify* a negro. ZETA should distinguish between terms and things. If the word 'man' had been applied to an Ethiopian for the first time in the Bible, or for the first fifty times, would a Moor be entitled to infer that man signified a black-man? Yet such is ZETA's argument as to the word for wine. He adds—"And so in a hundred other instances." ZETA travels too fast. The whole Bible has not a hundred examples of such an application of the word; it has scarcely a third of that number. ZETA says, "there is no distinction made between the drunkard's wine and "the teetotaler's." How is this? There is a wine described as evil when it is red, when it gives its bubble in the cup, and when it moveth, as with a spontaneous motion (all marks of fermented wine); a woe, also is pronounced upon those who go to *seek* 'mixed wine' (*i. e.* drugged wine); and yet the same writer, who cannot mean palpably to contradict himself, represents Wisdom as mixing her wine (syrup-wine, with water), and saying '*Come* and drink of the wine that I have mixed.' I am amazed that ZETA can believe that one and the same thing can be so referred to. That the Rechabites' abstinence was based upon a wider fact than this distinction, does not prove that the distinction was unknown to them, still less does it prove that there *is* no distinction. ZETA must have a singular facility of belief, if he supposes that the Rechabites did not know the difference between grapes and fermented wine.

Philosophy of generic terms.

(2) Tho I believe that the Bible is uniform in its condemnation of intoxicating wine, and that in a great variety of ways it inculcates and recommends the doctrine of abstinence (like almost all other old oriental books), it is hardly worth while contending for the absolute uniformity, if the general tenor and spirit be allowed. If Prov. xxxi is the solitary exception, ZETA is welcome to the benefit of it, recollecting that the same book describes the (supposed) 'comforter' as a *mocker* and *deceiver*. Confessedly, the Hebrew is difficult: the Rabbins, who had no scruples like ours on the point (tho some of them understood part of it to refer to the drugged death-cup given to criminals on their way to execution), never applied it as ZETA does, following the example of Burns. For my own part, I understand it as inserted *contrastively*, for the purpose of implicit repudiation—as much as to say, "They who would be wise and just, as princes, must not drink wine; if you *will* use it, give it to the poor wretches about to perish, or to those overwhelmed with despair and sorrow, who have no other comforter," * but certainly this is not recommending it *as a*

Proverbs xxxi.

* I omitted to notice this text, because I wished to see if, after exposing ZETA's errors in the *clear* texts, he would still cling to the *obscure*.

BEVERAGE—but only as a mental-medicine or opiate.—Christ had a stupefying cup of wine offered him, but *he* rejected it.

(3) As to the wine at Cana, ZETA mistakes me. As a matter of fact I did not care, because the *unrecorded* fact cannot affect this argument; but *I should be sorry to have to believe* that Christ did sanction the use of intoxicating wine; and tho I cannot 'prove,' I may still reasonably believe, that he was, like so many of his cotemporaries and disciples, a teetotaler. I did not affirm that Christianity 'proclaims' the teetotal doctrine, but both the New Testament and Church history show that its evangelists and apostles were favorable to it. Paul frequently recommended Christians, and especially bishops, to be teetotal—using the verb *neephö*, from *nee*, 'not,' and *pö*, 'to drink.' Timothy was obviously a teetotaler, and a strict one, requiring the recommendation of Paul to use even any kind of wine. Paul also exhorts bishops not to be in the company of wine (*mee paroinos*) or, as we should say, *not to visit public-houses*. † The remark of Mr Beardsall is inapplicable. As Olshausen, the learned and liberal German commentator, says, "the discourse has reference *only* to "what was customary in the world, so that no conclusion can be drawn "from the expression, as to the marriage itself at which Jesus was "present, or as to the use of the wine he bestowed." The point of contrast was the character of the wine *last* given; and that did not depend upon men being 'well drunk' or not, either at other feasts or at this. ZETA's canon of criticism (that the general meaning of a word must be accepted as its meaning in every instance, unless we have special proof to the contrary) is invalid and clumsy. The general meaning can only extend to the general texts, not to *all;* and the frequency in the number of times a word occurs only proves the necessity of its use. A *special* use is as sacred and as proper as any other. Meanings, in short, are not determined by majorities. Moreover, ZETA's false rule would ruin his own argument, for while the context of *Yayin* determines its application to intoxicating wine in thirty three texts *only*, there are more than one hundred texts in which it is *not* so applied. ||

Wine at Cana.

|| See table at end of article.

(4) It is not an 'assertion,' but a fact, that the wine named in Psalms as amongst the *food* which comes *out of the earth*, is not alcoholic wine. ZETA does not speak 'strictly' when he says that God brings no wine at all out of the earth, but that what he does give us is 'the grape.' In Hebrew, the word *is* applied to the grapes themselves, as well as to the juice *in* the grapes and to the juice *out* of the grapes. The question is not how we in England, in the nineteenth century, use the word 'wine,' but how it was used by the ancients. In Latin,

† To show the strong and pure feeling of early *Christianity*, as distinguished from modern *Kirkianity*, we select the following from the *Law Book of the Ante-Nicene Church*.

"54. If any one of the CLERGY be taken eating in a *Tavern*, let him be suspended, except when he is forced to bait at an Inn upon the road."

According to a logical canon already exploded, this law *implies* that Tavern going, because bad for the Cleric man, is good for the Laic!

Greek, and Hebrew, it is certainly applied to 'wine *in* the grapes,' and to *pendant* grapes. Hence my argument does not 'prove too much,' but exactly enough. Nay, in the English Bible the word is also so applied—as 'new wine in the cluster,' and in the text which ZETA has been compelled to abandon—"And the Vine said, shall I leave *my wine*?" The grape, besides, is *as truly a bottle* as is one of leather or glass; and I presume ZETA will not argue that port-wine is only wine when poured *out* of the bottle?

(5) I rejoice that ZETA has not again indulged in the tone of painful irreverence which characterized his first paper, and that he is led to say that he 'venerates the Bible.' This assurance was quite needful, for I should not otherwise have suspected it. I cannot myself understand how a person who invariably puts the worst possible (not the most probable) construction upon a book, *can* look upon it with an unprejudiced mind; but I am glad to learn that he is at least unconscious of any prejudice.

CLASSIFICATION OF YAYIN, OCCURRING 141 TIMES.

[Wine *prohibited* in the texts marked with the hand: and *associated with* Signs of *evil* in those distinguished by the asterisk.]

I.—YAYIN: USED GENERICALLY 68 TIMES.

(1) *For all kinds of Wine: whether good or bad*—51 *times.*

	Numb.	6: 3, 4, 20	Prov.	4: 17	Dan.	1: 5, 8, 16.	
	Deut.	29: 6		21: 17		10: 3	
	Joshua	9: 4, 13		31: 6, 7	Hos.	4: 11	
	Judg.	13: 4, 7, 14	Eccl.	2: 3	Joel	1: 5	
		19: 19	Isaiah	22: 13	Amos	2: 8, 12,	
	1 Sam.	1: 24		29: 9		5: 11	
		10: 3		51: 21		6: 6	
		16: 20	Jer.	13: 12 (bis)	Micah	2: 11	
	Esther	5: 6		35: 2, 5, 6	Hab.	2: 5	
		7: 2, 7, 8		35: 8, 14 (bis)	Hag.	2: 12	
	* Job	1: 13, 18 (bis)	Ezek.	44: 21	Zech.	10: 7	

(2) *For all kinds: good in intention; with no special mark*—17 *times.*

Deut.	14: 26	Numb.	15: 5, 7, 10;	Eccl.	9: 7
	32: 38		28: 14	Cant.	1: 2, 4
Exod.	29: 40	2 Sam.	16: 1, 2		4: 10
Levit.	23: 13	1 Chro.	9: 29	Amos	9: 14
		Neh.	5: 18		

II.—UNFERMENTED YAYIN: PROBABLY 27 TIMES.

(1) *In the sense of Grapes in the Cluster*—12 *times.*

Deut. 28: 39 — 1 Chron. 12: 40 — 27: 27 — Psa. 104: 15 — Isaiah 16: 10 — Isaiah 55: 1 — Jerem. 40: 10, 12 — 48: 33 — Lam. 2: 12 — Cant. 2: 4 — Hos. 14: 7

(2) *For Grape, or other fruit-Juice*—8 *times.*

Gen. 49: 11, 12 — Neh. 13: 15 — Job 32: 19 — Cant. 8: 2 — Hosea 9: 4 — Micah 6: 15 — Zeph. 1: 13

(3) *For Boiled or inspissated Wine* (=Oriental '*Sherap*')—6 *times.*

Prov. 9: 2, 5 — Prov. 23: 20 — Cant. 5: 1 — Cant. 7: 9 — Ezek. 27: 18

III.—INTOXICATING YAYIN: ONLY 34 TIMES.

(1) *Fermented* OR *Drugged Wine, or both*—(but equivocal)—20 *times.*

* Gen. 9: 21, 24 — ☞ Levit. 10: 9 — * Deut. 32: 33 — 1 Sam. 1: 14, 15 — * 2 Sam. 13: 28 — Esther 1: 7, 10 — Psalm 78: 65 — ☞ Prov. 20: 1 — ☞ Prov. 31: 4 — ☞ Isaiah 5: 12, 22 — * Isaiah 28: 1, 7 (bis). — Jer. 23: 9 — Zech. 9: 15 — † Hosea 7: 5

(2) *For fermented, and therefore Alcoholic, Wine*—6 *times.*

☞ Num. 6: 3 — ☞ Prov. 23: 31 — Eccl. 10: 19 — † Isaiah 5: 11 — 1 Sam. 25: 18 — 26: 37

(3) *For Drugged Wine, either pure or fermented*—8 *times.*

* Gen. 19: 32, 33 — * Gen. 19: 34, 35 — Psalm 60: 3 — * Psalm 75: 8 — Jer. 25: 15 — Jer. 51: 7

IV.—YAYIN USED INDIFFERENTLY (for Wine *or* Grapes)—12 TIMES.

(1) *Spoken of as a Blessing*—3 *times.*

Gen. 14: 18 — Isaiah 24: 9 — Isaiah 24: 9, 11

(2) *Spoken of en passant*—8 *times.*

2 Chron. 2: 10, 15 — 11: 11 — Gen. 27: 25 — Neh. 2: 1 (bis) — 5: 15 — Isaiah 56: 12 — Joel 3: 3

CLASSIFICATION OF OINOS (AND OINO) = YAYIN, 36 TIMES.

I.—OINOS: USED GENERICALLY 12 TIMES.

Matt. 11: 19 — ☞ Luke 1: 15 — 7: 33, 34 — John 2: 3 (bis) — 2: 9, 10 (bis) — 4: 46 — Rom. 14: 21 — Rev. 18: 13

II.—OINOS, UNFERMENTED, PROBABLY 16 TIMES.

(1) *For Grapes in the Cluster*: 2 *times.*

Revelations 6: 6 — Revelations 19: 15 (symbolically.)

(2) *For Grape-juice* (=*Gleukos*), 11 *times.*

Matt. 9: 17 (tris) — Mark 2: 22 (quater) — Luke 5: 37 (bis) — 5: 38 — Luke 10: 34

(3) *For Syrup-wine* (=*Siraion*), 3 *times.*

1 Tim. 3: 8 — 1 Tim. 5: 23 — Titus 2: 3

III.—OINOS AS INTOXICATING LIQUOR, 8 TIMES.

(1) *Probably as fermented alcoholic wine*, 2 *times.*

* Ephesians 5: 18 — * 1 Peter 4: 3

(2) *For fermented and drugged wine*, 6 *times.*

* Mark 15: 23 — * Rev. 14: 8 — * Rev. 14: 10 — * Rev. 16: 19 — * Rev. 17. 2 — * Rev. 18: 3

BIBLE TEMPERANCE.

To the Rev. James Gibson, A.M., Glasgow.

Letter to Mr Gibson, in answer to his speech on Bible temperance

Sir;—A friend having posted me a pamphlet bearing your name as author, entitled "*Principles of Bible Temperance:* a speech delivered in the Free-church Presbytery of Glasgow, May 2, 1855," I took the liberty to offer some strictures thereupon in the Trades' Hall of your city on the 25th of the same month. The substance of what I then uttered, I now, at greater leisure, will place on record. As a *speech* delivered before a clerical coterie, and its immediate occasion (the question of the utility or decorum of toasts at the ordination of priests?), I neither care nor feel called upon to notice it; but as a *publication* professing to discuss the wider question of Temperance, and as specially quoting some views of my own for criticism, I feel it a matter of duty, both to myself and to the cause of truth, to submit your statements to an impartial and public examination.

Permit me to assure you, however, that I shall do this in no unfriendly spirit, and that I infinitely prefer your frank outspokenness, even where I think you mistaken, to the underhand, cowardly, and often slanderous, opposition of many Horatios. * Nay, I even rejoice in your publication, for it shows what I have often predicted, that certain questions which some short-sighted, pseudo-politic, friends of the Temperance Enterprize would fain shelve, can *not* be always postponed; and that, as they rise up in the human mind from its invincible love of consistency, the wisest course is at once to proceed to discuss them *thoroly*, as the only means of arriving at a permanent and general (if not universal) basis of action.

To begin, then, at the beginning—I take your seven Bible texts cited as mottos. If they truly illustrate what you mean by 'Bible Temperance,' I do not see any ground of quarrel. You are laboring under some strange hallucination if you suppose that *I*, whom you have selected as the typical-man on the side of the Harmony of Teetotalism with sacred Scripture, have any disposition to overlook any one of those texts. Each of them, I confidently assure you, find their proper place in my System of Harmony: each, in turn, teaches both "the doctrine once delivered to the saints," and the opinions now propagated by myself. Let us see.

1. "The glutton and the drunkard shall come to poverty." [Wrongly cited.]
2. "Be not ..... among rioters eaters of flesh."

Prov. xxiii. 21. Prov. xxiii. 20.

Some vegetarian teetotalers even go further than this, and say—

* As you say, "I have an instinctive antipathy to claws sheathed in velvet: I would much rather see them bare at once. If I am to get a stroke, I would rather be warned by the growling, than thrown off my guard by the purring" (p. 7).

"Be not eaters of flesh" at all. There is, therefore, nothing in teetotalism that can induce us to object to a caution against the evils of gluttony. And certainly, as advocates of Temperance, we have often pointed out that 'poverty' is one of the sequences of drunkenness—nay, of addiction to liquor far short of what is so called. But to give the full sense of the text, you should not have dislocated it from its context, for while the part cited assigns one result of drunkenness, you curiously, I will not say suspiciously, omit the *intervening* exhortation which points to the cause of many *becoming* drunkards—"Be not *among* wine-bibbers." (Greek, *οἰνο-πότης, wine-drinkers.*) *

Eph. v. 18. 3. "Be not drunk with *wine, wherein is excess.*"

I recommend to your notice Olshausen's commentary on this text, which expresses my own view in the main. Unless St Paul wrote bad Greek, *εν ω* (*in which thing*) must be referred to the *οινος* (*wine*). Paul evidently had before him the Septuagint version, which describes *that* wine which is a mocker, as *ακολαστον* † *οινος*, 'Wine is *intemperate*,'—and the drink which is raging, as *ὑβριστικὸν μεθη*, 'methee is *full-of-wantonness*.'

So Paul says—*εν ὡ εστιν ἀσωτια, in which is dissoluteness.* Dr Doddridge says, "Wine is so frequently the *cause* of this, that the enormity is represented, by a very strong and beautiful figure, as "contained in the *very liquor*." Dr Bloomfield, in his paraphrastic comment, has—"In which is a *tendency to* dissoluteness." Both readings come to the same point, and give a bad character to the drink, such as I give myself.

But even suppose *your* understanding of the text to be right,—suppose, as you virtually do, that Paul was confused in his grammatical antecedents,—suppose that there is no antithesis between *methusö* (fou') and *pleeróö* (filled) on the one hand, and between *oinos* (wine) and *pneuma* (spirit) on the other,—suppose the additional absurdity, that the word *oinos* had no force, or that *only* drunkenness with *wine* was prohibited,—in short, prune away all the beauty of the apostolic distinctions and parallels, both verbal and historic, and read the text in the fatuous fashion of the day—"*In* drunkenness *is* excess" (i.e. in excess is excess!)—and what, after all, is there in the truism in opposition to Teetotalism? Do *we* recommend 'excess'?

I Thes. v. 6. 4. "Let us not sleep as do others, but let us watch and be *sober*."

I Pet. v. 8. 5. "Be *sober*, be vigilant."

But will a tumbler of toddy help us to watch, or pray? Where the apostle puts the spirit engendered of wine in *antagonism* to the Divine spirit—will you dare to unite them in *fellowship?* If not—what do you mean by citing this text, and the preceding one, in favor of wine drinking? Is it not a common practice to drink a glass of grog by way of 'night-cap'? Assuredly, in any quantity, alcohol tends to

* For the true reading of this text, however, see vol. ii, Appendix, p. cix. I do not think that *intoxicating* yayin, but *sobhe*, was here referred to. The evil was the *too much* addiction to it.

† Used by Plato (Gorg. 507 C) in opposition to *σωφρων*, 'sober-minded.'

sleep, by *narcotizing* both the blood and the brain. In physiology nothing is more certain. The command, then, to observe the end—involves the duty of the *means*; and of course abstinence from that which tends to frustrate the end.

Meaning of sober.

Again, what do you understand by *sober?* Is it not being in a *natural* state? But after drinking alcohol, neither body nor mind is in a *normal* condition. The system is preternaturally *excited*, not perfectly sober. In a philological point of view, you commit an enormous error in arraying these texts against us: but you certainly keep this error in countenance by the fellowship of a huge fallacy of interpretation. The question is not, what the people of the nineteenth century mean by the word *sober*, but what the ancients meant by it? Now what was meant by the *nox sobrius*, but "a night in which there was *no drinking*"? What did Pliny mean by his *uva sobrius*, but "a grape *not intoxicating*"? The tropical meaning of the word, again, denoted *sensible* or *reasonable* action. But what sense is there in using as diet that which has not the slightest adaptation to the ends of food and drink?

Moreover, I will allow you to attach your *own* meaning to the English word 'sober'; and then I challenge you to show how *excitement*, of any degree, can be smuggled into its definition?

If any argument against teetotalism is incomprehensible as founded on the English word 'sober,' or on its Latin original, an appeal to the Greek word νηφω (*neephö*), translated 'sober' in these texts, most completely upsets your doctrine and establishes ours. *

I scarcely need to remind *you* of the composition of the word, from *nee*, 'not,' and *pínö*, or *pö*, 'to drink.' † *Neephö*, therefore, literally signifies *abstinence*—(understood, of course, of abstinence from bad-wine, i.e. abs-*tem*-iousness—abstinence from *temum*, te-*met*-um, *meth*, wine.)

You may say, "Yes! but νηφαλιος meant spiritually sober." I reply, so much the worse for you, since the tropical use is founded upon the literal, and must have arisen from the perception that *some drink* was incompatible with the realization of the spiritual state so designated. ‡ Unless the word νηφω (*neephö*) in one of your texts is to be understood in a literal sense, why did you cite them as apparently hostile to *our* doctrine of bodily temperance? You can not affect to believe that tectotalers ignore the duty of *spiritual* sobriety, even if some of them illustrate it no better than their neighbors.

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* See Lecture on the New Testament, vol. ii. p. 81.

A parallel.

† A parallel derivation is found in νῆστις (from *nee* and *esthiö*) *not-eating*, i.e. *fasting*. If our critical opponents were consistent, they would interpret Matthew xv. 32, "I will not send them away *fasting*," as meaning this—"I will not send the people away *eating-a-little* lest they faint by the way"! If *neephö*, 'to drink not,' signifies to 'drink-a-little'—why should not *neestis*, 'fasting,' signify 'a *little*-feast'?

‡ This, in truth, was the exact argument of Porphyry (*De abst.* i. 27), *tö de neephaleon men kai aoinon to poton*—'but to be sober, and drink NO WINE.' The Latin paraphrast has—"But *sobriety* will be needful to one who has to keep much awake—*potus sine vino*, drink of which wine forms no part."

I answer, further, that *neephö* was the Greek word employed by classical as well as Jewish authors for this very doctrine of *teetotal* sobriety. It was *so* used, for example, by Sophocles, Æschylus, Plutarch, Philo, and Josephus. Plutarch uses the phrase *neephálíai thusíai*, 'sober sacrifices'—adding "*in which no wine is used.*" Nay, refer to our old school lexicon, and see how Schleusner defines the primary sense of NEEPHÖ? "*Abstineo omnis potus inebriantis usu.*" It is this very word Josephus employs when he says that the priests, on the occasion of entering on their Temple duties, "*abstained* from wine." Now even you will not suppose that *neephö*, 'drink-not,' here meant the allowance of a 'little-sup.'

Meaning of Neepho.

It is still more to my purpose to add that the Apostles use this word as distinctly in its literal, teetotal sense, as in its tropical teetotal signification. In one it implies abstinence from disturbing-wine; in the other absence of disturbing-passion. Take, for instance, 1 Timothy, iii. 2—11. What says Wiesinger, in his continuation of Olshausen's *Commentary?* "Do not νηφαλιος, *spiritually* sober, σωφρων "[sober-minded], κοσμιος [modest], denote qualities such as especial- "ly befit a bishop?"

I do not admit that *neephalios* here signifies 'spiritually sober.—I believe it primarily denotes *abstinence* from lust-exciting drink. Let us look at the virtues and practices enjoined by the Apostle. A bishop is

1 Tim. ii.

Verse 2. To be *neephalion* (abstemious).
To be *söphrona* (sober-minded).
Verse 3. To be *mee par-oinon* (not near-wine). *
But *epi-ikee* (temperate in-soul).

Now the common interpretation jumbles all these beautiful distinctions into one confused notion called '*sobriety*': whereas the first of the terms denotes the sobriety of the mind, and the last the sobriety of the soul:—i.e. *wisdom* and *gentleness*. The other two terms refer to the safeguards of those virtues.

However, Wiesinger soon returns to common-sense. The Deacons are to be, *mee oíno pollö prosechontas*, "not to follow after *much* wine"—showing that when Paul wanted to speak of *excess* in good-things (as of the syrup wines to which the Greeks and Romans were so gluttonously addicted), he knew very well how to express himself.

"V. 2. *There is a reference to prevailing faults*, which are there- "fore particularly specified, as in Titus i. 7, *mee paroinos* [not near- "wine], *mee pleekteen* [no striker]—the second as the consequence of "the first.

"V. 11. Then follows sober [*neephalious*], corresponding to 'not "given to much wine,' * to be understood here of sobriety in the *lit-* "*eral* sense."

Your text, "Be SOBER (*neepsate*), be vigilant," must be understood literally likewise. Paul in 2 Tim. ii. 26, shows that the servants of

* Women under thirty were debarred the use of even *defrutum, sapa, siraion*, and other unfermented wines: and were *totally prohibited* the use of strong-wine at all ages.

the Lord were ensnared of the Devil by means of strong-drink, for the phrase translated '*may recover themselves,*' is *ana*NEEPSÖ*sin*, which literally rendered is, *shall become* NO-DRINKERS again"—(in other words, as teetotalers). So Peter, in the text you cite, has the same idea; urging the Christians to DRINK-NOT (*neepsate*), but be vigilant, for the adversary seeketh whom he may DRINK-DOWN (*kata-piee*). Dr Adam Clarke's quaint commentary is equally striking and just,—and I beg to commend it to your consideration. I Pet. v. 8.

"Satan tempts under three forms:— Dr Adam Clarke.

"1; The subtle serpent, to beguile our senses, pervert our judg-
"ment, and enchant our imagination; † 2; as an Angel of Light, to
"deceive us with false views of spiritual things, ‡ refinements [and
"additions] in religion, *and presumption on the providence and grace of*
"*God.* 3; as a roaring-Lion, ... *seeking whom he may gulp-down.* It
"is not every one that he can swallow down: those who are sober
"and vigilant are proof against him, these he *may not* swallow down.
"There is a beauty in this verse, and a striking apposition between
"the *first* and *last* words, which I think have not been noticed. ...
"Hear this, ye drunkards, topers, tipplers, or by whatsoever name you
"are known in society. ... Strong-drink is not only the way to the
"Devil, but the Devil's way into you; and *ye* are such as the Devil
"particularly *may* swallow down."

On this part of the argument, therefore, I may safely affirm that the Apostles entertained very different views of the relation of wine-drinking to the Christian-life, from those put forth by yourself in this printed oration; and I will add, without meaning any offence, very much wiser. Your reading of the νηφω texts, I can not refrain from remarking, if you will pardon the pun, tho it may have appeared to *your* vision fair as snow, (νιφα), does, on being handled, assume the aspect of *our* water: and the thought naturally arises, that you must have selected your mottos under the shadow of a *cloud* (νεφος), if not a Scotch *mist,* since *neephös* is the basis of our system—but the unsubstantial *niphas* and *nephos* the element and atmosphere of yours.

6. "Be *temperate* in all things." Cor. ix. 25.

The mode in which you quote and apply this word proves that while some persons forget to add temperance to knowlege, you have forgotten to put knowlege *before* temperance.

"Christian Temperance," says the commentator Benson, "includes
"the *voluntarily abstaining* from all pleasure that does not lead to God,
"extending to all things inward and outward." Now-a-days, however, it is perverted into an apology for the lust-of-liquor—for that drinking which results in tipling, and the tipling which ends in that aggravated enormity, British Intemperance! Surely, sir, you must know that the word εγκρατεια both in Acts xxiv. 25, and in 1 Cor. vii. 9, signifies

† Amongst the undoubted effects of strong-drink, as Solomon and experience equally testify.

‡ Religion being exchanged for creeds, and catechisms, and formularies, and scholastic dogmatisms of various kinds.

abstinence; and that it can never denote the use, in howsoever small a quantity, of what is not fitting and proper. To 'be temperate in *all* things' can not mean 'to use some few *bad* things.' But who is he that is temperate in all things? He that 'striveth for the mastery' in the Isthmian games, is Paul's *undoubted* reference and parallel. And what was *his* temperance? If the Christian would not lag in the race, or 'strike the air' and thus miss his aim, he must act like him who contendeth in the games. And how was that? Horace (*de Arte Poet.* 412) will inform you:—

'*Abstinuit* Venere et Baccho.'

Paul thought it prudent to 'bring his body under,' and hence he was *continent*, as εγκρατης signifies. "Had this heavenly man lived in our days," says Clarke, "he would, by a certain class of people, have been deemed a *legalist*; a people who widely differ from the practice of the Apostle, for *they* are conformed to the world, and *feed themselves without fear*."

Moreover, the ENCRATITES were a sect of ancient teetotalers, as you may see in Neander's *Church History:* how, therefore, can the word which is their badge be opposed to their doctrine?

Titus ii. 6

7. "Young men exhort to be *sober-minded*."

As we have no objection to this virtue, we do not see how *it* can well have any objection to us. To be 'sound-minded' implies true knowlege and right-will: but there *is* no knowlege extant which shows that alcoholic liquors are *adapted* elements of diet for persons in health; nay, all certain knowlege runs counter to their use; hence it follows, that he who has a sound Will must *abstain* from their use altogether.

In page 3 of your tractate, you write that "you have ever acted in "obedience to the noble precepts contained in the passages quoted on "the title page, and would venture to recommend their serious consi- "deration to your teetotal friends." Tho I have seriously and critically considered these texts fourteen or fifteen years ago, I have again gone over them at your invitation, and with increasing satisfaction. *Two* of them I have shown to teach teetotal doctrine—while the spirit of the remaining five sustains it,—and thus I *must* doubt that you have acted up to their strict significance, while I may freely allow that you *meant* to do so. And after all, I come back to the old conclusion of Cowper, who has somewhere (in reference to the perversions of scripture words common in his day as in ours) written in this strain:

Men, with a clear and shining light supplied,
First put it out, then take it for a guide!
And e'en the words that bid our lusts obey,
Are misapplied to sanctify their sway.

Habitual use admitted to be wrong.]

At page 12, I find a passage that puzzles me, for it seems to admit the *truth* of Teetotalism; but if so, what means your elaborate attempt to prove from scripture that it is *not* true? You refer to Dr Macfarlane's tract on 'Temperance' (which *I* regard as the opposite of 'valuable') for a distinction that, as you allege, teetotalers seem to confound—viz. between the occasional and moderate drinker and the habitual. You add—"The *habitual* I condemn, as he does, whether

moderate or not." To be frank with you, Teetotalers see no more pertinence in this distinction than between occasional and habitual intoxication, or theft, or any other wrong practice. "The *habitual* practice you condemn"—*as wrong*, we suppose. But if it be *right* to drink a glass of toddy after dinner on Monday, why not right on Tuesday?—and so on thröout the week, month, or year? The chain of *habit* can not fail to be good, if the separate acts which form its links are good. You can not get a *quality* in the whole series which does not adhere to each part. If drinking toddy is in the course of *diet*, then to condemn its *daily* use is as absurd as to condemn habitual dinners. Either, therefore, you and the doctor have failed in stating what you mean, *or* your distinction is one with no difference worth distinguishing.

After a reference, of your 'certain knowlege,' to some clerical brethren who, tho pledged abstainers, nevertheless take Spirit or Wine, comes this passage:—

Clerical ailments.

"Some of the brethren can no more pretend that they use it as a *medicine* than I do. Their health is as good as mine."

Why then *do* you use it yourself occasionally? and above all, why do you condemn its habitual use in others? You say—

The truth granted.

"With the latitude some of our friends allow themselves, they may put *me* down as one [abstainer] also. Our worthy father, Mr Burns, *with my own consent*, publicly quoted me as a man who had some labor mentally, and perhaps bodily, to endure, and [as one] who declared, on his own *experience*, THAT THE LESS WINE OR SPIRITS A MAN TOOK, THE BETTER WOULD HE ENDURE FATIGUE, THE CLEARER AND CALMER WOULD BE HIS HEAD, EITHER FOR THOUGHT OR DEBATE."—p. 12.

If abstinence be the BETTER part, why, I ask, do *you* choose the WORSE? Here you distinctly admit our fundamental position, and I can not but wonder at the singular apology immediately following:—

Scripture set up against Nature.

"*Still*, I will not put down my name in a way that entitles the world to say, I profess to be what I am not—and [what I] do not feel myself bound to be *by scriptural law*."

Are we to refuse to profess the truth, then, because some persons disgrace their profession? Should we not, rather, put down our name to the principle, and *live in such a way* as will compel the world to believe that we *are* what we profess?

Your remark about 'scriptural law' is perfectly astounding; for it is genuine, unmitigated infidelity. First you inform me that Experience, the working and evidence of God's law in the physical frame, has proved that abstinence is *best* for both body and soul—and secondly, you affirm that you do not believe that the Bible teaches you to do what is proved by experience to be *best!* Surely, sir, we had better have no opinion of Scripture at all than one that is dishonoring to it! If it does not exhort us to be ready for *every good work*, wherein consists its excellence or its value? The manner in which you thus use it, shocks my sense of reverence and propriety. I had always thought that scripture *announced* laws previously binding upon us (as the Decalogue), and furnished new aids to a holy-life. While

every new development of science introduces us to a wider and truer knowlege of laws affecting the health and sanity of the world, we may, on your principle, shove them all aside, or ignore them with the cool remark—"I do not feel myself bound to do this by express *scriptural law!*"—So that a book designed to help on humanity in good-works, becomes converted into an incubus upon the knowlege and progress of the race—an excuse and an apology for neglecting the manifestations of the Divine Will thrö other channels than itself!

I pass to page 18 of your tractate, simply observing that neither as a citizen advocating the *Maine Law* for the removal of public temptations, nor as a Teetotaler endeavoring to *persuade* the people of the needlessness and evil of strong-drink, can I object to the discipline used by the Church and State of Scotland in the seventeenth century, so far as it realized the condition described, when "the only complaint of "plain people was, that the *government was so strict, they had not lib-* "*erty enough to sin.* It was thus the Taverners complained their "trade was broken, the people were become so sober."

Root of insobriety.

Now, sir, will you solve me this riddle—why did not this state of things *continue* unto this day? Will you prove to me, that private drinking did not lead to public, and thus religion and virtue decline with the increasing love of strong-drink? Will you prove to me or the world, that *teetotalism* had any part in this declension, and that the drinking system which you advocate had *none*? We know, for certain, that drinking "grows with what it feeds upon:" and what happened with the Monasteries in the Catholic times, may have happened with your Presbyterian Churches. The monks, originally water-drinkers, began to allow wine *occasionally*, as once a fortnight, and especially as *medicine* (vide the charters of Furness and other abbeys), and the upshot was the *habitual* use, which even you allow to be an *abuse* deserving of condemnation—and finally, as occasional led to habitual or *qualitative* excess, so the habitual in turn generated the *quantitative* abuse. I leave you to solve these questions at your leisure, and in the meantime shall rest in the belief that the declension you mourn was owing to the fact that you had only pruned the Upas, so that it again burst forth into renewed virulence and vigor, whereas the extirpating axe should have been laid to the root of the tree.

You rightly enough deny (p. 18) that "forbidding the drinking of healths is the *whole remedy*" for national intemperance—only I never knew any one had affirmed so foolish a proposition. Your observations (p. 19) on the nature of *a vow*—which you define "as made to God alone"—are still more irrelevant—the temperance pledge being simply a *declaration* made to our fellows alone, of intention to act up to our conviction of the truth expressed. If you understood the philosophy of symbolism, you would find that our pledge is really exposed to no objections not holding good against *all* speech, or indeed all human *expression* whatsoever.

The Pledge.

You next come to the wine question, where I presume that I must look for the fuller explanation of your most inapposite mottos. You say, quite rightly—

> "To assert that the *temperate use of wine* is prohibited in the Bible, is as untrue as it is dangerous."—p. 19.

You should have put the word *some* before 'wine,' if you desired to refer to our views—as it is, you are only fighting the shadows of your own prejudices. Having created a 'dangerous' heresy, you go on to make it fixed, refusing to consider the *distinctions* which explode your statement as representative of the temperance doctrine.

"I shall not enter into what I consider the *absurd critical dispute*, whether the wine was the fermented juice of the grape or no."—p. 19.

That is, you will over-ride the *facts* of history, and the clearest distinctions of language, found in the Bible and classic authors—by your own modest *ipse dixit*, that the views of those who *have* considered the question, are simply 'absurd'! To which I can only answer —if Zany *will* tread in the footsteps of Zeta, he must share his fate, for assuredly they will fall into the ditch together. *

"The nature of the prohibitions ... of wine to the Priest (Lev. x. 9) during the time he was in the service of the altar, and to the Nazarite under his vow, show clearly enough the *nature* of *the* wine."—p. 20.

Even where you state a partial truth, you contrive to mix it up with an erroneous inference. It is quite true that the prohibition implies in both cases a reason—and that reason can be found only in the *intoxicating* quality of *some* wine,—but are you ignorant of the fact that *all kinds* of wine (and even *grapes* to the Nazarites) were equally prohibited? But who denies the intoxicating quality of *some* wine?

"Melchisedec brought forth bread and wine—the wine being *what is ordinarily meant* by the word."—p. 21. Fallacy of ordinary meaning.

Are we then to determine what kind of man, or wine, is meant in *one* passage, by what is meant in twenty others? If so—how are we to determine what is meant in *those* others, to begin with? By the context, do you say? Granted—and so in the *twenty first*. I fearlessly appeal, then, to the Bible context, and challenge you to show that the word man, or the word wine, in the Bible, always means *but one character* of man or wine.

I quite sympathize with your remark that an article unfit for *habitual* diet (as you grant) at our common tables, can be very eligible at the Sacramental table: certainly, *we* do not recommend manufactured wine for such use, but the pure 'fruit of the vine'—the wine that is best when *new*—as the Saviour intimated. At the same time, I do not see that you are one whit better off than the weak brethren to whom your remark replies, for might they not parody your language and ask—"How can that which is dangerous or improper if *habitually* employed, be deemed quite safe and innocent when *occasionally* used?" If mere *abstract time* alters quality, I think a *sacred occasion* may be equally

* You give in a note, citations from the late Dr Macfarlane's tract, containing an extraordinary series of critical and other blunders. Most of them you will find answered in my reply to Zeta. All thrö you assume that teetotalers deny the existence of fermented *yayin!* What can be said to such ignorance? You assume that we base some critical argument concerning *yayin* on Gen. xl. 5—19, where it does not occur!—and in § 2 you confound the *tirosh* with the *yayin* texts! Dr Macfarlane's confusion.

potent—and therefore you are the last man who ought to object. I *too*, like yourself, am here reminded of the lines you quote—

Fools rush in where angels fear to tread.

A new argument.

"Had it been *unlawful* to use it, neither Joseph, nor Daniel, nor Nehemiah, would have been *justified* in being cup-bearers to the monarchs they served, who either used or abused it."—p. 23.

I must compliment you on a *new* argument at last, even while I doubt its being a *true* one. Men are 'justified,' I fancy, if they act according to the light they have—and you assume here a principle of guidance for the *ancients*, which we teetotalers have not set up for them, but for *ourselves*. *I* should feel it a sin to hold *you* as a slave, or to serve you as a slave—but I can conceive of states of society when Abraham, Daniel, or Nehemiah would, as indeed they did, feel nothing of the kind. By the way, can you *really* prove against both history and the Bible, that Joseph *did* serve the Pharaoh of Egypt with *intoxicating* wine?—for an ancient writer says that the first Egyptian king who drank such wine was Psametik, centuries after Joseph's time. If you assume that the *responsibility* of Daniel was the same in drinking wine for his own pleasure, and in bearing the cup that contained it at the command of another—will you please show how, when he *refused* it himself, he was 'justified' in retaining his office? The dilemma is of your own seeking.

All sorts of Wine.

You talk of wine as if there were but *one sort*: yet you quote from Nehemiah the phrase "*all sorts* of wine" (*yayin*), and add;—

"I am not disposed to believe that THIS was *mere* unfermented, *sour*, or even sweeten*ed* (!) juice of the grape."

I cannot deal with your 'disposition,' but I may say that we have never asked you to believe that *all sorts* of anything was only *one sort* of thing—whether sour or sweet! This is your own absurdity—not ours. It is also an absurdity purely your own, to change the plural '*all sorts*' into the singular '*this*'—which is the same fallacy as a highland child would fall into, who inferred that 'all sorts of bread' meant *this* thing before him—'oaten bread.' On the whole, I think you do well to eschew critical disquisition. *

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* It is pitiable to see you settling the tastes of all the world by your own taste for toddy or brandied port. A passage from Wilkes' *U. S. Exploring Expedition* may be usefully cited:—"They (the Chilians) only manufacture some grapes into a hard, acid wine, called *masta*,—or *boil the juice down to the favorite drink* of the lower classes called [*dulces*, but] after it has passed through a fermentation, *chicha*"—(i. 68—72). You confound sour wine, boiled wine, alcoholic wine, and grape juice all together!

By the way, a reference to an article on Egypt, in the *Christian Treasury* for 1847, by your fellow citizen, the Rev. Dr Taylor, might be of service to you. He speaks of "*all manner* of bake-meats"; of *hole*-bread (baked in holes); and cites Rosellini as saying that "the Egyptians were accustomed to prepare *many kinds* of pastry for the table. Thus articles are found in the tombs, kneaded from *barley* or *wheat*." You would doubtless perceive the absurdity of a sceptic's argument based upon the assertion that "*he* was not disposed to believe that some royal dish was mere barley-flour pastry, or that the

The citing of Zech. ix. 15; x. 7 will not at all avail, since "the *making of a noise* AS through wine," and the being "filled *like bowls*, and rejoicing AS through wine," is a state very different in quality, when arising from the Divine-spirit and from the spirit of wine; and the *comparison* of the effects of wine with those of religious feeling, rather implies a contrast (as with Paul) than equal approbation of the *causes*. We have often heard as much *noise* in a Methodist-meeting as in a Pot-house: but we may charitably hope that the influences were not at all akin.

In passing to Isaiah xxv. 6, you make an extraordinary bound and blunder, since the words '*wine on the*,' as the old editions of the Bible show, are pure *interpolations* of the modern translator. In Coverdale's and the older versions we had a more accurate translation; *they* speak of "*sweet and most pure things*," to which teetotalers have no sort of objection. Moreover, we do *not* say that wine is an unlawful beverage—but only that *bad*-wine is. In my articles in Kitto's Cyclopædia, reprinted in vol. ii. of these works, I have furnished abundant evidence that *un*fermented wine is also capable of being *refined* both *on*, and from, its lees. (See also vol. ii. p. cxi.) *Shemarim*, however, here signifies 'preserves'—a very different thing from port and sherry.

Wine on the Lees. Isa. xxv. 6.

"Nowhere," you say, "is the temperate (?) *use of the drunkard's wine* denounced, or teetotalism proposed as the remedy"!—p. 23.

I can simply express my astonishment at this assertion. If characterizing *his* wine as a 'mocker,' as 'raging,' as 'biting like a serpent,' as tending to 'excess or wantonness,'—if exhorting the people not to be *near*, or to desire it,—literally, *not to look upon it*,—if this is not both denouncing such wine and proposing teetotalism;—I don't know what is. When among the priests the use of such wine interfered with the *Divine work*, God expressly and for ever *prohibited* it. Is not that a lesson as to how *we* should conduct *our* life-work?

"Christ was called by the Sadducees and Pharisees of his day, a gluttonous man and a wine-bibber. But, to wipe off the wicked reproach, he nowhere forbids the use of it."—p. 23.

For the plainest reason—namely, that they who *invent* libels would not cease to circulate or repeat them because they were refuted. They did not themselves believe them; why, then, should Christ answer them save by exposing the *animus* of the objection, which he effectually did. "John came neither eating (ordinary food) nor drinking (any kind of wine), and ye say he hath a Devil!" Moreover, I never assume that Christ was averse to *all kinds* of wine from which John abstained—the very reverse is my position, as you may see in my answer to Zeta and my historic explanation of the miracle.

"The bloody and unclean follower of the false Prophet forbade it [both dice and drinking indeed]; and he and his followers are a proof to this day, that

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bread which the Pharaohs used on any particular occasion was 'hole-bread,' or barley-bread." But wherein would it differ from your own, except in being *less* absurd?—for the same Rosellini says, that on the sculptures are represented *seven different kinds of wine*, including the preparation of *boiled wines*.

Temperance not something else.

teetotalism will not destroy cruelty and pollution, and can go but a very little way to do it, or to open men's hearts to the Gospel of Christ."—p. 23.

You must suffer me to say that this is a style of talk very unworthy of a candid man: is, in short, a tissue of misrepresenting rhetoric, not a train of fair reasoning. It would be easy to retort, that the "Russian priests and people have adopted *drinking and Christianity*, and are a proof to this day, that (what?) will not destroy cruelty and pollution, and has gone no way to do it, since they are more enslaved, besotted, cruel, and unclean than the Turks themselves." Your argument involves a confusion of cause and effect altogether disgraceful to an educated person. But you do worse than that—you impute to us, by implication, opinions we are further from entertaining even than yourself.

When and where did we affirm that abstinence will *destroy* cruelty and pollution? Who has said that it will alter the constitutional character of men, or change the natural heart? You seem to admit that it may go *a little way* in that direction—whereas I deny that it can go a single-step. A negation can *do* nothing. But abstinence is simply a state of not-doing evil, not a conversion of evil into good. Such a state, however, lets *well* alone—or lets *nature* alone; while drinking perverts and corrupts nature, or changes bad into worse. Can you deny the connexion between drink and cruelty? or between drink and lust? If not—then abstinence must prevent (what it professes) *all* the cruelty and pollution that are commonly excited by strong-drink; and the measure of that transcends and defies human calculation. Nay, you allow after all that "drunkenness leads to pollution and crime" (p. 30).

"It is the *excess of riot* that is pointedly condemned."—p. 23.

Do you then allow a little, *moderated* riot? But I deny that 'excess of riot' is either as often, or as pointedly condemned, as the use of *intoxicating* drink. Go to your texts and array them, and I will *out-number* you many times over.

Your last allusion to the Wine-question is in your closing sentence, and concerns the Rechabites, brought in, apparently, for the sake of the witticism.

"The *whole use* made of their case in the Bible is simply to contrast their obedience to the vow of their Father, with the contempt of the Jews to their covenant with God. If there *be* more, let our friends go through with it. Last winter would have tried their mettle." (Laughter.)—p. 36.

Rechabites.

I don't agree with you. The whole-use of that case, is the whole of the *facts* and the whole of the instruction the narrative contains. In my lecture on the Old Testament (vol. ii. p. 48), I have shown that a good deal more than you choose to see, may be gathered from the record, and also something *less* than you propose, when you say "Go through with their example." If we had said indeed, "We must drink no-wine *because* the Rechabites drank none"—then the same *because* might have been urged for living in tents. But this position, imputed to us, is altogether a fiction of your own; and that is very poor wit which is based upon no reality. The *reason* and

results of their drinking no wine is applicable to *our circumstances*—but the purpose of their having no houses or freehold property in a strange land is *not applicable* to our circumstances,—and therefore, as "circumstances alter cases," it does not follow that in wisely imitating the Rechabite in one thing, we should be equally wise in imitating him in others. Your clerical brethren ought rather to have 'laughed' at your *non sequitur*, than at that which they mistook for wit—the comparison of a nomadic life in sunny Palestine, with the fancy-picture of houseless teetotalers in the bleak climate of North Britain!

Your general explanation of the Corinthian case of *expediency*, in reference to food and drink offered to idols, I am not disposed to controvert. It was certainly a case arising purely from the *subjective* condition of the weak and unenlightened Christian; and had no connexion with the *objective* quality of the wine or victuals to be abstained from. It was, therefore, a local and temporary circumstance, and is unduly stretched when applied to the whole civilized world and to many successive ages. *That* Expedieney is of a *pseudo*-description which implies, that what God in nature made and expressly adapted for *diet*, is too dangerous to be used as such. It is an assumption of being, not only wiser than what is written, but wiser than creation. A religious motive no doubt was expressed by the apostle, and the *spirit* of the declaration is therefore what we must seek to realize, if like-minded with himself. As Poole says, "He declares how much a good Christian *should do* to prevent his brother's sinning against God." Such a principle, it seems to me, ought to lend special support to the rational dictate of *habitual abstinence* from what you admit to be injurious to the physical and mental nature of man. Viewed in this light, therefore, "the coldness and indifference of the Church," *is* at least lamentable, if not altogether incomprehensible. Expediency.

You state that it is your '*opinion*'—even while you believe teetotalers 'will *disclaim*' it—

"That they imply a declaration in the pledge that *something else* than God's own ordinances in the word preached, *in the authority of his law*, in a godly discipline, *and in the ordinance of civil government duly exerted*, is necessary to restrain vice and reform the world."—p. 25. Fancies.

If you won't believe our disclaimer, then I call upon you to justify your 'opinion.' What is there in the Pledge that implies all this which you impute to it? I regard the PLEDGE as an expression *of* law, and thus as an instrument of *utility*. What is there in the Bible, or in Godly discipline, or in Civil-government, that forbids us to employ innocent means for good ends? Suppose some one were to say to you, that the establishment of a Sunday School or a Tract Society implied that something-else than *what was before in operation was necessary*; therefore from those agencies you 'ought to stand aloof'—what would be your answer? I leave you to solve your own difficulty, and to dissipate the terrible train of 'immoralities' which an excited imagination has conjured out of our simple declaration to abstain from strong-drink. If men who have taken the pledge, reason, in breaking it, as you represent them doing,—I can only say that they are very

badly instructed. But as we can only act with such material as we have—it is too bad in the spiritual teachers to cast the consequences of neglected popular training upon *us*.

The craving for drink.

After admitting that, as "a general *rule*, a converted-drunkard should totally abstain," you cite the following passage from a Free-Church Abstainer's tract:—"Conversion can have no more direct "effect upon the *craving* of intoxicating liquor, than upon hunger or "thirst, head-ache or tooth-ache. The craving is itself a *physical evil*." Now, tho I shall state the matter, as I have stated it in my essay on the *Etiology* of Intemperance (vol. i), in a somewhat different manner, I can not agree with your broad denial:—

"This statement I hold to be utterly untrue *in fact*, and a slander on the converting grace and power of the Spirit of God. A converted man has a *power over his will and his craving*, and can RESIST it; but his will can neither *remove* toothache nor headache."—p. 26.

Your comment *admits* the very fact to which you object, for how can a man *resist* what does not *exist*? If I am hungry, I can certainly resist the OBJECT of the craving (eating), but how can I directly remove the craving itself? The blunder is entirely your own, and more worthy a Master of Muddle than a Master of Arts. You substitute the *object* of a craving, for the *craving itself* and its cause.

God will enable sinners to escape the thraldom of the vilest habits *on one condition*—viz. that they break off the *means* and *associations* on which the habit depends. The cases you cite from Brainerd *prove* this—for the converted men he speaks of, *ceased to visit Taverns and keep evil company*, so that they ceased to *feed* the flames of their lust with its wonted fuel, thus enabling their high religious feeling to cope with the slight physical tendency of the guarded and occasional use of strong-drink. But religious men, as the Bible shows, are never *absolutely* safe from its tendencies, while it is used at all.

After all, I find you do not differ from us as to what *is* the best means. Witness the following:—

"Let the drunkard by all means *abstain*, I *believe it is his* BEST SAFETY."

But why recommend abstinence to the drunkard, any more than to me, *in addition* to the grace of God? Why should it be his 'best safety,' if a religious motive is the *only* and the *best* cure? We say, *both* are best, and best both together.

"All SINS proceed from desires of the flesh and of the mind. ... I am unable to see that a teetotal society can present to a drunkard a higher *motive* than I can do." * —p. 28.

As to the 'motive,' we present the same as you do: at least, Christian teetotalers present Christian motives. But the difference is about the *means*, not the motive. And yet not a difference, for you say to

* Your story about Dr Duff, and the *only tribe of teetotalers he knew in India being Devil worshipers*, is absurd; for both Brahmans, Buddhists, and Mohamedans are teetotalers. You say you adduce it to show (!) that "natural self-righteousness does not dispose the heart to receive the grace of God." Does a little drink, then, or drunkenness, mend the matter?

the man with the *strong*-craving for drink, "*no* drink"—tho to the man with the little, incipient-craving, you inconsistently prescribe "a *little*-drink"!

Moreover, it seems incredible that you can mean to affirm that *narcotics*, such as tobacco, alcohol, opium, and hashish, *have* no physical depraving action upon the constitution of man,—and that they generate no *special* appetite for themselves! If you mean this, you are beyond argument; and if you do not mean it, there is no argument to meet.

A moment's reflection might have convinced you, that *we*, least of all men, countenance the bugbear you have raised up, "that moral and religious *motives* will never *hold-back* men from drinking;" for how could men take and keep our pledge, *if the prëexisting appetite for drink were absolutely uncontrollable*? What we say is this—that the craving is artificially created by the physical operation of the narcotic, and that the *difficulty* of keeping sober is immensely increased by the *habitual use* of the stimulant. More impartial persons than yourself can see the truth. The last number of the *Edinburgh Review* admits and expresses this fact in the following emphatic terms:—

Alcohol originates the lust for liquor.

"The passion for fermented drinks ... *is not instinctive* in the same sense as the desire for warm infusions. ... A rare accident taught some sleepless Arabian chemist—torturing substance after substance in his crucibles and alembics—how to extract the FIERCE SPIRIT from these agreeable drinks, and brought up, as it were, from the bottom of Pandora's box, that Alcohol which has since inflicted so many evils upon the world. They exhilarate, they enliven, they stimulate and exalt the mental powers. Some [men] they stupefy, *some they convert into irritable savages*, some into driveling idiots, and some into mere pugnacious animals. All, if long and largely used, they brutalize, prostrate, and, in the end, carry to an untimely grave. ... But more wonderful than these *poisonous* and destructive effects, is *the passion for indulging in them which these liquors awaken* [originate], *in a large proportion of our fellow men*—the irresistible love with which these unfortunates are smitten by them—the *fascinating influence* by which they are charmed. The Will becomes absolutely spell-bound *thrö the action of alcohol on the bodies of some*, and Reason is dethroned, even where it formerly exercised clear and undisputed sway. ... IT IS FROM THIS FASCINATING POWER THAT THE DANGER OF USING THEM PRINCIPALLY ARISES."

I am glad to find that you at least agree with us in thinking that *Drink-shops* should be suppressed.

Mr Gibson proves too much.

"Do our friends think it expedient that there should be no public houses, or dram-shops properly so called, at all? I join them in that.

"Does a man say there is danger of excess in his family? Then by all means let us *put the temptation under lock and key*, nay, roll it out into the gutter."—p. 30.

Still, I cannot understand why the traffic should be bad, if the article trafficked in be *good*: and to your family Maine Law, I must object that it is unwise to defer its operation *until the tempter has got hold of some members of the family*. But in this, as in other arguments, you strangely overlook the fact, that THE BIBLE *no more prescribes abs-*

tinence to the drunkard than to the sober man; * hence either your admission is against the Bible, or the Bible is no more against us than against yourself. Which horn of the dilemma will you take?

Lastly, I have to notice your extraordinary remarks on the controversy between myself and Zeta. (By the way, I do not know you are authorized to call him an *Atheist*, I think you may more safely take it for granted that he is a Deist.) After quoting the introductory passages of Zeta's letter and my reply (see antea p. xxxv-vii), you say:

A false dilemma.

"It may be his (Dr Lees') belief that no one of the sacred books is opposed (to teetotal facts); but then, if he cannot make it good, *he is prepared to surrender the Bible to the Atheists*, RATHER *than surrender his teetotalism to the Bible*."—p. 29. †

This inference is altogether unwarranted, and one which you would vehemently repudiate if employed by a Romanist against yourself. Nothing is more common than this dilemma, as propounded by a French priest:—

"Either the doctrine of transubstantiation is true—or God is an impostor"—[referring to the words of Christ, '*This* is my *body*.']

Applied to a Romanist's dogma of transubstantiation: to Geology, etc.

The short-sighted Frenchman, like yourself in my case, can see but one alternative—yet in the case of Christ's words even *you* can see another, for you would object to the ridiculous assumption of the Priest, and answer, '*The words may be differently interpreted*.' So I answer to you, "There are other alternatives than those you propose,—and the facts may be explained without surrendering the Bible either to Drinker or to Deist."

You are, in point of fact, occupying a position similar to that of Turretin and others, when they opposed the facts of Astronomy by their dogmatic interpretation of the Bible. The facts remain, but where is the *interpretation?* You know the answer of later and wiser divines, both in reference to the Astronomical and Geological dilemma. Take, for instance, that of your own Dr Chalmers:—

Chalmers.

"When Galileo was forced to make his recantations, and on the ground that his discoveries were opposed to the Bible, while we fully sympathize with the eloquent indignation of those who viewed it as an arrest laid on the progress of philosophy, we regard it as a far more grievous and hurtful effect, that the higher reason of the age was placed thereby *into an attitude of antipathy and revolt against the authority of revelation*. The likeliest occurrence to this, in

* The proverb—"Put a knife to thy throat, if thou be a man *given to appetite*"—will not serve your turn—for, first, no *special* kind of food is intended, and second, *abstinence* is not meant at all, since not-eating is not equivalent to teetotalism, but to *not-living*—to suicide. Your comparison, as usual, when fairly looked at, changes into a contrast!

† You abuse my statement—"I think *it is possible* Christ made the right distinction"—by comparing it to another statement which, you say, "*rather* smacks of Neology." Now, tho names do not frighten me, it is right to say that you *know perfectly well* that my conviction on the point is *strong*, not weak; only, of what value, in an argument with Zeta, would be my dogmatic conviction? Not content with dogmatizing yourself, you quarrel with others for not doing likewise.

modern times; was when the speculations of geology came into strong collision with the Mosaic account of the creation of the world: *and when the more enlightened friends of Christianity were put to the blush by certain of its injudicious defenders*, who, in utter ignorance of the theme, ventured on the field of controversy with a crude Natural History of their own." *

Another authority in your own Kirk may be cited, as to the folly of the course which you ask *me* to pursue in a similar case:—

Sir David Brewster.

"In other times, and these not far distant from our own, the wisdom of this world stood in painful conflict with the revelations of the next. The Sage and the Christian were names but seldom conjoined; and when human genius had unlocked the crypts of the primæval world and partially lifted the veil which concealed their treasures, Faith stood aghast amid the monuments of Death, repudiating their lessons as still charged with error, and striving by a spurious ingenuity, or an unworthy compromise, to reconcile truths partially demonstrated with truths fully revealed. *Geology* was thus arrayed against the Mosaic record; and with so powerful an ally, *infidelity took up a commanding* position, wielding weapons of a more lethal edge than she had ever before wrested from the quiver of the blasphemer, or the armory of the metaphysician.

"When an Astronomer or a Naturalist enters upon the study of the celestial or sublunary world, the discovery of truth ... is his single object. Wherever reason leads he *must* follow, whatever mysteries confound him he must strive to remove,—and whether his inductions run counter to vulgar prejudice, or to cherished truths, he must *maintain them fearlessly*, because he believes them firmly. Should the phænomena and laws of nature, when accurately observed and irrefragably established, *invalidate* or even *contradict* the truths of revelation, the Reason of Faith must grapple with the Reason of Philosophy, till truth has been elicited in the conflict. The *voice of God is uttered as articulately in his Works* as in his *Word;* and he is the greatest enemy of religion who would throw a rein over genius, or limit science in the freedom of her range. ... *Learn the real meaning and sterling value of a fact in Science*—that eternal and immutable truth which every man must believe, and which all men may possess—that indestructible element of knowlege which time cannot alter, nor power crush, nor fire subdue,—that self-luminous atom which shines brightest in the dark, and whose vestal fire an intellectual priesthood will ever struggle to maintain." †

You have yet to learn the real meaning of a Fact in science, or you could never have asked me to do so impossible, not to say turpid an act, as to '*surrender*' *a fact*. Woe be to every man and every system that shall stumble against the Rock of Fact, for it must eventually recoil and crush them as to powder. And *our* facts—witness the experiences and experiments detailed in my works as to the poisonous character of alcoholic drinks—are ocular and demonstrable, not mere theories and inferences. You may indeed *wink* at a fact, or refuse to look at it, but it will remain, for all that, just as much a fact as before. The state of mind you cherish is well described by another of your writers:—

"Many a man may boast of the personal integrity which would secure his making an admission that was adverse to his *secular interests* in some pending

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* *North British Review.* No. III. *Art.* "Political Economy of the Bible.'

† *Ibid.* No: VII. *Art.* 'Vestiges of the Natural History of Creation.'

suit or question of right; many—compared with those who possess the moral and intellectual courage that would carry them forward, unflinchingly, on a path that seemed to be leading them away from cherished and sacred truths! Painful occasions are those where the common impulses of integrity, and the best persuasions of the heart and of the mind, seem to be threatening to come into adverse collision! *It is such occasions that try the loyalty of the soul and its native nobility.* Ordinary minds falter and slink away—some into comfortless silence,—some into evasions, shallow and disreputable,—while some *rush* into the jungle of a *conventional* and *professional* jargon.

Mr Gibson's predicament.

"To the traveler, we say, bring us the *entire* results [of your observations]. Bring us these materials faithfully and fearlessly; fearless of those *imputations of atheism and neologism* with which good and weak-minded persons at home may, and *will* assail, the collectors of such evidence, ill as it may comport with the *prejudices* which, in their view, are *inseparable* from sacred truth. Thus it was when, during the course of the 16th and 17th centuries, the modern astronomy was making its way into the convictions of intelligent persons thröout the civilized world, it encountered a determined opposition from 'the church'—not Papal merely but Protestant also. Alarmists affirmed the modern astronomy to be irreconcilable with the express testimony of the inspired writers, and they predicted that, if this heresy of the telescope were permitted to gain ground, Christianity and religious faith would be driven from the world! The church has never shown itself a good prophet, nor was it so in this instance." *

So, when you ask me to deny as heretical, the revelations of the *microscope* and the *mercury*, which demonstrates that alcohol vitiates the blood and lowers the vital-heat, you are asking me to be as absurd as the Popes and Priests ever were. The same writer proceeds:—

"There resulted from the establishment of the modern astronomy one momentous consequence nearly affecting biblical science—the tacit admission and *partial* adoption of a rule of Scriptural interpretation, which common sense indeed might have suggested, and the want of which had given rise to that ill-judged and perilous opposition wherewith churchmen had greeted the early advances of the true philosophy of the universe.

Established facts, and principles of interpretation.

"A mere repetition of the same conflict has occurred in our own times by the well-meant, but ill-considered and ill-omened assault which has been made, and is still made, upon modern geology, from precisely the same quarter, and by individuals of the same infirm temper. Now in view of this second, and still more signal instance, we confidently anticipate the three results as in the first; (1) That the modern geology will not merely keep its ground but advance on its course; (2) That Christianity will nevertheless hold its position and spread itself over the earth; and (3) as an *inevitable* and *much-to-be-desired* consequence of geological science upon biblical interpretation, the GENUINE RULE of sacred exegesis will be *further* ascertained, demonstrated, and carried out, with more extended application to the canonical writings. We have only to add the expression of our belief that a *third*, and not less signal instance, closely analogous to the two already mentioned, is likely to occur as a consequence of unrestricted researches—physical, architectural, and ethnical.

"Whatever attaches to the inspired books, *in so far as they are human compositions*—the writings of men—must, sooner or later, be submitted to the authenticated processes of philological and historical criticism. These severe analyses, these fearless scrutinies, can not but issue in bringing home to the convictions of all men, and with a new and solemn force, a sense of the certainty

* *Ibid.* No. IV. *Art.* 'Palestine.'

of all that is *indeed* 'from heaven.' Such is all true Religion and all genuine Morality; but *geography* is *not* from heaven; nor is geology; nor is astronomy; nor statistics; nor is common and profane history; nor are topographic surveys; all these things, and THINGS LIKE THEM, are 'of men,' and *therefore* are subject to the conditions that *necessarily* attach to whatever is *human;* these things are progressive, ... and whenever they severally reach their last and ripened state, whatever belonged to their infancy must, of course, be 'put away'—or if not, they are conserved only by men—not childlike—but *childish.* David's notions of the relative position, the magnitudes, and the motions of the heavenly bodies, are *no element* of [inspired] truth ... [nor affect] the heavenly theorem, any more than the badness of the paper upon which our Euclid is printed, or any errors of the press, lower the applicable value of his demonstrations, or throw a doubt upon his methods of proof. All this is now pretty well understood—it is a concession that has been *wrung* from theological persistency by evidences which could not be gainsaid."

The sphere of Revelation

Professor Hitchcock, in his *Religion of Geology*, states the case much to the same purpose:—

"We ought to bear in mind the object of Science, and the object of Revelation. And by the term *science* I refer mainly to physical science. Its grand aim is, *by an induction* from [of] FACTS, to discover the *laws* by which the material universe is governed. On the other hand, the *exclusive object* of Revelation is of a moral character. Every other subject mentioned in Scripture is incidental."

Professor Hitchcock.

Now it is precisely an *incidental concordance* on the temperance subject for which *I* have contended, and which you caution me against as dangerous! Permit me, in return, to cite for your edification the following passage from Professor M'Cosh's *Method of the Divine Government.*

"Religion is *unnecessarily raising prejudices against itself,* and is TRULY dishonoring God—while it may PROFESS to honor him—when it would discourage enquiry into those works of *God* which he has spread around us, which are manifestly *inviting* us to look at and admire them, and rewarding us by a thousand discoveries, *when we treat them as we ought to treat God's works,* and investigate them with patience and with reverence. Perilous as it is at all times for the friends of religion to set themselves against *natural science,* it is especially dangerous in an age like the present. *It is no profane work that is engaged in by those who,* in all humility, *would endeavor to remove jealousies* between parties whom God has joined together and whom man is not at liberty to put asunder."—(Part iv.)

Professor McCosh.

In conclusion, I may be allowed to say, that while I am prepared to defend my *individual* opinions against you or any other man, I must protest against the equally dishonest and illogical course which you have pursued in saddling my opinions upon the Temperance Societies—societies which originated quite independently of any peculiar views of mine, and the rules and constitutions of which do not recognize them. My views, if erroneous, furnish quite as good a reason why you should blame Christianity as the Temperance Societies, since I am just as truly a believer in one as the other. Yours, etc.

Meanwood, Leeds, July 4th, 1855.

FREDERIC RICHARD LEES.

Public Postscript.

The proof sheet of the preceding letter having arrived just as I had received a copy of the Rev. W. Arnot's tract in reply to Mr Gibson, I cannot forbear adding a word or two in relation to it.

First, by way of compliment. The Scottish abstainers must gratefully acknowlege the crushing manner in which Mr Arnot has dealt with their antagonist, at once exposing his general fallacies and vindicating the social excellence of their own movement. Mr Arnot has also, with that broad common-sense and Christian earnestness which distinguish him, justified afresh his motion before the Presbytery for the abolition of ordination toasts. On the general question, I regard Mr Arnot's reply as admirably conclusive. He has done as much as is possible from his own point of view.

Second, by way of criticism. The weak and erroneous passages of the tract are to be found in those portions relating to the wines of scripture, the doctrine of expediency, and my controversy with Zeta; but even here Mr Arnot is only partially wrong. Great candor and good sense are mixed up with his slight errors of fact. (1) Physiologically and chemically, the distinction between spirits and wine, or alcohol *in* wine and alcohol *out*—is only one of degree, *not* of 'kind'. The social-facts are also not exactly as stated. Greece, Italy, Syria, Arabia, and India, *have been*, in other days, remarkably intemperate *on wine*; as the West of England *is* yet on cider, and the North on beer. At the same time, I readily allow that the fact of a wide difference, even of *degree* in the toxic-strength of drinks (ignored by Mr Gibson) should both logically and practically affect the conclusion; just as the modified Slavery of Judæa must be distinguished from the blasting and polluting Slavery of Ancient Rome or Modern America. *Nevertheless*, no form of slavery is *right* —none (whatever Mr Arnot may say of some slavery men) ought to be held up for *imitation* in any case. It may be best, in some circumstances, to *tolerate* it, or to modify it before destroying it; but it can never be true or right to *sanction* it,—to teach that it is good. (2) The weakness of the expediency argument is rather of a logical than a practical kind; it consists in the tacit assumption that *a thing* in itself divinely adapted for food or drink *will tend* to drunkenness, or as Mr Arnot words it, will place men "*on the way to it.*" Alcoholic-drink most certainly does this: but THAT VERY FACT is a demonstration that the thing is *not* good. Why, then, predicate that it is? (3) Some remarks as to my debate with Zeta, seem to assume that I have been *conceding* some of the Christian evidences to the Infidel. Now the very *reverse* is the case. I was not arguing the Christian evidences at all, but simply *rebutting* an objection to Christianity founded upon Zeta's assuming as a fact, what I believe not to be a fact.

Zeta says, "Christ made wine"—to which *I* answer, "There is no proof that he made *alcoholic* wine."—Mr Gibson says, "Christ made wine"—to which Mr Arnot replies, "There is no proof that he made *brandied*-wine." Now the phrases imply only a difference of *amount* of alcohol, for *brandy* is only alcohol plus water,—and unbrandied wine is only alcohol and water in its first-form plus water and minus a dose of brandy. Moreover, *some* fermented wines without brandy, are full as alcoholic as our port and sherry with brandy. Hence, Mr Arnot's mode of reply to Mr Gibson is precisely my method of reply to Zeta—we both deny that an assumed fact *is* a fact: and I, no more than Mr Arnot himself, "concede one atom of the grounds on which Christianity is proved divine."

HOW TO 'MAKE' ALCOHOL

If the reader will refer to §20 of our *Chemical History of Alcohol* (vol. i, p. 95), he will find a statement which now, from the progress of discovery, needs a Supplement. We cannot do better than supply it in the language of the literary Editor of the *Leader* (March 22, 1855), simply observing that there is nothing whatever in the discovery to 'aggravate the teetotal mind,' but, on the contrary, there is something that cannot fail to gratify it. It shows, that for the ends of Art, of chemistry and pharmacy, Art can supply us with *alcohol* without destroying what Nature bestows for food.

"The Ancients sang of Wonders; we realize them. Song has given place to Science. Almost every month brings some new discovery to light, some fresh conquest over the wide domain of Ignorance. The discovery we have on the present occasion to announce will delight the scientific mind as much as it will 'aggravate' the teetotal mind, for it is nothing less than the discovery of how to *make* Alcohol. Observe, how to *make* it; not how to distil it, not how to produce it by the decomposition of an organic substance, but how to create it by the recomposition of inorganic substances. There lies the interest of the thing. It is another step nearer the great impossibility which has so long perplexed and defied philosophers—the impossibility of making complex organic substances.

"Chemists have long known how, by acting on organic substances, we can produce a series of substances proceeding one from the other, the composition of which becomes simpler and simpler until we arrive at some substance familiar in the inorganic world. And Physiologists have long known how the Plant, acting upon these inorganic substances by a Chemistry of its own, reconverts them into organic substances. What we have *un*made, but cannot *re*make, the Plant recomposes with unerring certainty—because, as Voltaire said of the stars, 'it has nothing else to do.' Man's ambition was to rival the Plant in this respect, as he surpasses it in so many other respects. Hitherto his success has been but mediocre. A very few organic substances he can make, but those of only a low degree. One reason is that while he knows what are the elements which compose an organic substance, he is ignorant of the way in which these elements are united; he knows the *what*, but not the *how*. Another reason—and this is perhaps the reason which of all others frustrates his efforts—is, that he cannot produce the necessary *conditions* of the experiment. In the laboratory he can determine the conditions with precision. He performs his experiments with instruments which are *instruments* and not *participators*; in glass retorts which are *passive*, and which do not mingle their vitreous qualities with the chemical combinations effected inside them. If he places a carbonate with a gas in a glass vessel, he knows that the glass simply *contains* these substances, and isolates them from all others, it does not interfere with their action on each other. Very different is it with the Laboratory of an Organism: *there* the vessels cannot be passive; there no action takes place which is not complicated by the whole surrounding conditions; there no isolation is possible.

"Having stated the difficulty, we have prepared the reader to appreciate every fresh approach to a solution, however small. M. Berthelot has made

Alleged discovery of Berthelot.

such an approach. Alcohol is decomposed into water and bicarbonate of hydrogen by concentrated sulphuric acid at a temperature of 352° Farh. No experiment is more familiar. But to *re*compose water and bicarbonate of hydrogen into alcohol is quite another affair. Every Tory will tell you it is easier to destroy than to rebuild. But the energetic and sanguine Reformer persists in trying to rebuild, and with patience, after many failures, he succeeds. M. BERTHELOT has succeeded. This sulphuric acid, which at 352° separates water from the hydro-carbon, comports itself in a quite different manner at ordinary temperatures. Placed in the presence of the gas, it slowly absorbs it, and disposes it to enter into combination. M. BERTHELOT dissolved some bicarbonate of hydrogen in some concentrated sulphuric acid at the ordinary temperature. He then added five or six volumes of water. This liquid, after successive distillations, aided by a little carbonate of potash to retain the water, produced Alcohol. He repeated the experiment with the ordinary gas used for lighting, and with the same success.

"Thus we see the chemist *un*making and *re*making an organic substance; and one of the most interesting points in the experiment is, that in both cases the same agent is employed—the only difference being a difference of temperature."

That information on the subject of Chemistry in general and of the genesis of Alcohol in particular, is still needed, is evident from the following passage in the *Economist* Newspaper of July 7th, 1855—a paper edited by Mr Wilson of the Treasury, and famous for its rancorous opposition to the Maine-Law—and its insertion of that Canadian Commissioner's report who, after a railway ride of 36 hours thrö the States of Massachusetts and Maine, announced the failure of the Law, because at Gorham he could get strong-drink at the Hotel where he slept—the said Gorham being some miles beyond the boundaries of any Maine Law state whatever!

Ignorance of the *Economist*.

"We are pleased to see in this Review [the *Westminster*] an article on the 'Physiological Errors of Teetotalism,' which proves that *Nature was not such a fool* as the total abstinence men would make her out to be, *in diffusing alcohol almost universally throughout the vegetable world as one of its constituent elements.* The Reviewer shows on the authority of careful, calm, inductive philosophers, that alcohol is nutritious as food; that wine is the milk of old age; and that as food can be abused as well as drink, it is as rational to prohibit the sale of all spirituous liquors *because* some persons misuse them, as to prohibit the sale of bread and mutton-chops. If there were the least *hope of fanatics learning any thing*, we would recommend them to read this well-timed article; but as there is not, we can only recommend those to read it who will have to oppose their wild legislative schemes."

Mr G. H. Lewes, the literary Editor of the *Leader*, will hardly feel complimented at the reading given to the article of his *alter ego*,—he, emphatically a 'positive philosopher' who discards all final causes and 'designs' of Nature, quoted as making alcohol to be a natural-product widely and wisely diffused!—but it will at any rate evince how very apt the *Economist* himself is to learn anything, and how vastly superior to the 'fanatics' of his own fabrication; or to the 'Master Tommy' of the *Westminster!* It may also serve to show the tendency of the article noticed, and how hollow any more words of compliment are to "the Greatness of the Temperance Cause."

REPLY TO THE WESTMINSTER REVIEW, ETC.

1. *Remarks relating to the use of Allsop's Pale Ale in Indigestion.* By HARRINGTON PARKER, Beer-Merchant, Pall Mall. Tract, p. 16. *The Times.*
2. *The Leader*, 1851—5. Literary department; edited by Mr G. H. LEWES, author of the Exposition of *Comte's Positive Philosophy*, etc.
3. *The Westminster Review.* July, 1855. Article—'The Physiological Errors of Teetotalism.' p. 30.

WE class together in a common notice the Pall-Mall Beer-merchant, and the '*positive* philosopher' of the *Leader* and *Westminster*,—because they have both, to a great extent, chosen to treat our doctrine in a common fashion. We are grieved to find an organ professing high-philosophy, glozing over so base a system as the Drink traffic—not simply defending, as it pretends, a scientific thesis—but—as we shall show beyond all cavil—*employing the lowest arts to undermine the Temperance movement.* Yet we are *not* surprized. It is but the other year we beheld even Baron Liebig tarnishing his reputation to enhance that of Burton-beer, giving rise to the epigram—

"Sure the world is near its end
"When LIEBIG's brewing-ale—
"Science, aghast, laments its friend,
"And e'en *Brown*-stout grows *Pale*."

The *Remarks* remind one so strongly of the *Review*, that we may regard the former as the Pilot-Balloon to the latter. At any rate, both are inflated with the same element—if not from the same gasometer. The various articles in the *Leader* contain the germ of the objections now elaborated in the *Westminster*, and therefore nothing more need be said of them. As the latter remarks, "when Hector was dragged round the walls of Troy, the fate of Troy was certain"—so we shall grapple, not with the lesser *Leader*, but with this Hector who so boldly challenges our prowess. We undertake to show that his arguments partake more of 'Wine Measure' than 'Troy Weight,'—tho we frankly confess their resemblance to that famous standard in one particular—they contain *no scruples.*

I. ALLSOP'S PALE ALE MERCHANT.

His *admissions* are as remarkable as the *Westminster's*, to which we will advert presently.

1. "The health and longevity of the European residents in India," says Lieutenent Colonel Sykes, "have improved *in the precise proportion in which they have given up alcoholic-beverages*, or substituted the weaker for the stronger."
2. "Pale-Ale," says Professor Carpenter, "does LESS HARM than any *medicine.*"

Ergo, quoth our logical Beer-Merchant, it is "the best of all *ordinary* AND *extraordinary* drinks"!

Not merely does he allow Pale Ale to be 'extraordinary' *physic*, doing some harm, but spirits and *other ales* are positive poison!

3. "He who drinks spirits," he quotes Liebig to show, "*draws a bill on his health.*"

"In 1743 the deaths in London exceeded the births by 17,000: but in 1755 by no more than 10,000. *Simultaneously there is remarked* a great increase of the excise in the London *Breweries*: a corresponding decrease in that of the distilleries."

The *gummy*-Ale fallacy of Johnston.

Dr Johnston, in his *Chemistry of Common Life*, which we have elsewhere criticised, says that "*Edinburgh-Ale* contains about 4 per cent, or half a pound to the gallon, of solid *nutritive matter*," and "is, therefore, food as well as drink." This testimony is printed on the back of an Edinburgh-Ale Merchant's card now before us. What is the fact? The chief solid is malt-*gum*, and as experiment has abundantly shown, of 50 grains of this substance taken, under ordinary circumstances, into the body, 45 will be found in the *excrements*. * Wonderful 'food'—and sold at a wonderful price too! The fact is, gum will never undergo resorption into the circulation while anything better is at hand. To the *ipse dixit* of a Farmer's Chemist we at once oppose the most decisive experiments and the highest authority. Commenting on the facts, what says Prof. Lehmann? "At present we *know nothing more* than that the *Potiones gummosæ* medicines," and Ale is claimed to be such, "can yield to the animal organism only "*an extremely small quantity of material;* and *that* only of a nature to "support the respiratory process [not nutrition]; and that their uses "—if they *are* of any use—can be merely negative in acute diseases." †

But Mr Harrington Parker treats the rival Traffickers still more cruelly:—

Spirit and common-ale allowed to be poisonous.

4. "In short, as we trace the history of the last century, we discover that *diseases and crime have declined in proportion as* SPIRIT-DRINKING *gave place to the more extended use of malt-liquor*"—[Tea and Coffee are omitted as inconvenient to his argument!]

5. "I am further justified in asserting that since the INVENTION of *Allsop's Bitter-beer* has superseded the use of PORTER, STOUT, and SCOTCH-ALES among the lower classes, their social position has *still further improved*, and the bills of mortality [are] deprived *still more* of their former fearful and appalling tales."

At last, then, the model-liquor is invented—at once physic and food, drink and diet, ordinary and *extraordinary* beverage! And wherein consists its peculiar excellence?

"From the pure and wholesome nature of the ingredients employed" in

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* See Frerichs' *Hand wörterbuch*, iii. Blondlot's *Traité de la Digestion*, p. 297. Simon's *Archiv.* i. Gmelin's *Verdauung nach Versuchen*, ii. Boussingault, in *Annal. de Chim.* 3rd ser. xviii.

† *Lehrbuch der Physiolog. Chimie.* Vol. iii. Of 'Digestion.'

making it, says the *Lancet*. [Is not Sugar-cane-juice, from which the fatal *rum* is made, also wholesome?]

6. "*From the moderate* [smaller] *proportion of alcohol present.*

7. "From the very considerable quantity of aromatic *anodyne bitter* ['apt to disagree with the stomach,' adds Mr Vivian!].

Pale-ale without nourishment

8. "From containing a *smaller amount of extractive* [solid] *matter*—thus being *less viscid* [gummy] and saccharine—and consequently [having less *to* digest] more easy of digestion."

But there is still one other admission to report, and as Mr Harrington Parker says in the *Times*' advertisement, "the public will then be able to *appreciate what they owe to Harrington Parker*, 5½ Pall-Mall"! To understand what follows, it must be recollected that the albumen or gluten of the grain is that which, by fermentation, is transformed into *yeast*, or fæcal matter, and is the only material that can be properly called plastic or nourishing food for the tissues, and that *only* in its unfermented state. He says—

9. "All *fæcal matter* is *entirely* CARRIED OFF in Messieurs Allsop's process of brewing."

Nay, this 'Wine of Malt' is even *superior* to the "Wine which," he quotes Liebig as saying, "is surpassed by *no* product of nature or art"!

10. "A drink, possessing *all the warmth of wine*, WITHOUT ITS FEVER, and the briskness and spirit of champagne WITHOUT ITS HEADINESS."

That Medicines *do* harm, in general, our Beer-merchant seems to allow in his citations. At any rate, the Teetotaler knows no difference between *drug* and *poison*. That is his sense of the word—as opposed to food. Now Parker's testimonials admit that Pale Ale *is* physic.

11. "Hop—a most useful *medicine*," says one. "For invalids an excellent *stomachic*," says another. "In many dyspeptic complaints, *a perfect medicine*," says a fourth.

Beers are narcotic physic!

It is admitted, lastly, to be a medicine of a special—namely, the *narcotic* class, to which opium belongs. How it is also a *tonic* we leave the Wise-acres to explain—or those funny men the 'positive philosophers.'

12. "Very considerable quantity of ANODYNE bitter," says the *Lancet* man. "The Hop, by its NARCOTIC PROPERTIES, tends to allay morbid irritability," says Dr Rowe. *

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* Jahr's *Symtomen-Codex* gives the following as the effects of *Lupulus* (Hop) on the healthy system, when taken in small doses continuously.

"HEAD. Vertigo. Stupefaction. Dizzy, dull headache. Determination of blood. Illusion of sight.

"DIGESTIVE APPARATUS. Eructations, nausea, colic. *Sensation* as of strong-hunger *without real appetite. Weakness of Digestion.* Dull sensation in the abdomen, etc.

"SLEEP. Great *drowsiness.*

"SKIN. Itching painful sensation as from nettles. Swollen face, often covered with eruption. *Swelling of the eyes.*

"GENERAL. Drawing and twitching in almost every muscle, in short paroxysms, *as in rheumatism.*"

Hop-poisoning.

The up-shot is—with the drink-seller—that it is good to take physic in health, innocent to narcotize the system a little,—and reasonable to waste one's money in the process, and one's time in justifying it;—for ourself we must remain as incredulous as ever to all these fine pretences.

Other portions of the *Remarks* contain less truth than those already cited; but yet are very curious in their way. He banters the Teetotalers, for example, as "substituting *Apothecaries* shops for Kitchens" —which is exactly what they do *not* do; it is Mr Harrington Parker who proves Pale Ale to be Physic, and then recommends it as the *essence* of kitchen-stuff! Again—

"Water is a fluid *greatly overpraised*—which to obtain in a pure and unadulterated state, fitted by the absence of *Lime*, or something worse, for human creatures, is most puzzling."—p. 3.

Now, that Titanic quack, Dr Sheridan Muspratt, in an advertisement in the same column of the *Times* as Mr Harrington Parker's, says of Tetley's Leeds *Mild Pale Ale*—"It is much better suited for brewing than the *Burton water*, which contains nearly 20 per cent of *sulphate of Lime*" [gypsum, or plaster of Paris!] And if such water, infused with bitters and narcotics, is not impure and adulterated, we should like to know what *is*? Surely Mr Parker has no reason for speaking of "*the* [dietetic] *qualities of the water used in brewing.*"

Cock and Bull baking-story.

Mr Harrington Parker tells us of the "Patent to *collect* the alcohol generated during the baking process"—he should have said in *fermenting-the-dough*—which failed because the amount, from 0.3 to 1 per cent of alcohol, condensed by the apparatus, was insufficient to pay the cost. But he need be under no alarm about the teetotalers consuming what alcohol is left *in* the bread after the baking process,—or if he is, we can assure him that they will never catch the panic until he has caught the alcohol. He says that the scheme failed, "*chiefly because the bread was not liked*"—the bread being in no respect different from other bread—"probably," he adds—and the *Westminster* begins its article with the same Cock and Bull story, mythicized—"*because* too much pains had been taken to extract the 'gin' from it"!

Mr Parker's Chemistry too is something of the antique. The following is in the face of fact, fact as stated both by Mr Parker himself, and by his friend of the *Leader* in the preceding article.

No alcohol in Pale-Ale.

"Chemistry can separate, but cannot *re*produce. What, then, becomes of the *argument* (!) that by boiling and cooking up Allsop's Ale in a chemical retort, *a drop or two of alcohol may be evaporated?*"

Does Mr Parker, then, dispute his own authority, the *Lancet*, whose commissioner speaks of a moderate proportion of *alcohol*? Does he deny his analysis, which represents ale as containing, according to age, from 2 to 9 per cent of *alcohol*? *What is it* in the Ale that *warms*, but not fevers, if it be not the Alcohol?

Liebig admits alcohol to be injurious in proportoa to quantity.

At pp. 9, 10 Liebig is cited to prove that *spirits* produce *inevitable bankruptcy* of the body, but the choice, and therefore limited, wines of the Rhine and Bordeaux, "a *minimum of injurious after effect.*" Whereupon we have this curious comment:—

"So much for the alcohol nonsense—thus for ever put down by the greatest chemist (!) of this or any other age" (!!)

We had actually mistaken these dicta of Liebig for sound teetotal doctrine. Alas! for our stupidity. After disposing of this most 'potential authority,' we need not pursue the smaller-fry. Even if Mr B. Travers, F.R.S., does "not hesitate to affirm that *no deleterious substance* is contained in *Bitter*-beer"—*we* shall hesitate to believe that *bitters* and *narcotics*, and what Dr Rowe calls "a less proportion of *spirit*," can be ranked under any other head than 'poison.'

There are many other instances in which Mr Parker plumply contradicts his own greatest authority. We had taught, so far back as 1842, that alcoholics oppose *vital changes* in the body, and *retain carbonic acid and effete matter* in the blood, referring for proof to the experiments of Prout and Fyfe; since confirmed by Vierordt, Davy, Böcker, Lehmann, and Naas. Yet our self-advertized 'conscientious' beer-merchant says—

"This theory is nothing better than a vague conjecture, resting on no induction of particulars."

Now what says Liebig? "The use of alcoholic liquors causes *a considerable diminution in the amount of carbonic acid given out.* *

"By the presence of alcohol, *the change of matter itself must be impeded*, or altered in its form." *

Alcohol keeps poison in the blood.

We take this opportunity of remarking, that tho the Ale *at* Burton, or in store at 5½ Pall Mall, *may* contain only Hop-and-Alcohol-poison, and *may* be free from picrotoxin and strychnine, yet the *practical question* is not much affected for the Public at large, who get their ale at the Public house. The *Lancet* commissioner enumerates Cocculus Indicus, copperas, opium, and strychnine (the alkaloid of nux vomica) amongst substances used by *Brewers' Druggists* for doctoring Beer, and making weak beer into stingo with a heading; and Morris, in his treatise on *Brewing*, gives the following recipé for Porter.

Malt 20 *quarters.*

Hops	2 cwt.
Cocculus Indicus berry . .	4lb.
Sugar	28lb.
Fabia amara (*nux vomica*) .	6lb.

Recipe for 'poisoned poison.'

The *Times* of Dec. 23, 1852, records an enquiry before a London Police Court, into a case of alleged poisoning.

"Mr W. Baker, surgeon, of Blackfriars, stated that Mrs Holly came to him about 18 months ago very ill, and said she had been so ever since she took some arrow-root. I gave her medicine, and she recovered, but frequently called after, and was always greatly excited. Mrs Holly brought me some arrow-root, which I tested for arsenic and corrosive sublimate, but found neither in it. I tasted it, and found it extremely *bitter*—if it had been genuine it would have had no taste. I washed some of it, and discovered a brown sediment, which I compared with *nux vomica*, and found it precisely similar.

"Alderman Wilson. That is not a dangerous chemical, *for* there is an immense quantity of it used in beer!

* *Animal Chemistry.* Part i. pp. 27, 147. 3rd Ed. 1846.

Mr Baker is '*disturbed*'—not *poisoned*—quoth the *Westminster*.

"Mr Baker. I am aware it *is* so used, but I don't think it quite so harmless; for *I had the cramp in my arms and legs all night from only drinking a glass of Bass's pale-ale!* I wished to try the effect of the arrow-root on some of the animals that are born blind, as nux vomica kills that class of animals instantly; and Mrs Holly said she would try it on a bird, and in a few days she brought me a sparrow, which she said the arrow-root had killed. The effects of nux-vomica might last for years in the system."

In the *Times* of Dec. 28, is a letter signed J. M., Waterloo Hotel, Edinburgh, in which the writer, referring to the above case, says—

"Such statements from an Alderman and a Surgeon, in reference to one of our favorite beverages, must open the eyes of Honest John Bull, to the manner in which his constitution is tampered with by these leviathan monopolists. A traveler left lately in the office of a friend of mine, a circular. The traveler had samples of his compounds, or drugs, which, at the prices quoted, he offered to supply in any quantity. The following is an extract from this circular, and is marked 'C.'—'Is highly recommended for imparting strength and flavor, *produces hilarity and good feeling, without the drawback of a headache in the morning.* It will also increase briskness and pungency, and will allow a greater length to be drawn,—6 ounces to 20 barrels, and not more,—2s. 6d. per ounce."

Thus we see that this Brewer's-druggist could fabricate an article almost as wonderful as Mr Harrington Parker's Pale Ale, having "all the warmth of wine *without its fever*," and yet quite innocent of Malt!

The Man of Beer discusses the Ethics of the question also very much like the Man of Pleasure in the *Westminster*.

'Enjoyment' set up as the rule of life!

"May we not have Pale-Ale from Burton, as well as water from Puddle-Dock? Tell me, whether *enjoyment* is not of itself a necessity to the healthy existence of mankind?"

Now it is precisely because teetotalers are *so particular* about their water, that they object alike to the cheap liquid of Puddledom, and to the dear decoction of lime and lupulus from Burton. The argument from 'enjoyment' is just as good, or rather as bad, for incontinence as for alcohol: and our answer, reiterated for the thousandth time, is, that we have no objection to *proper enjoyment*, enjoyment consistent with the true health of body and mind. The honest logic, "I drink because I *like* it," is infinitely preferable to shabby and insincere pretexts of 'Authority and Science.' *

We conclude our citations from Mr Harrington Parker with his most amusing *Potometer*.

Parker's Potometer.

"The extent to which these Ales may be used, is a question of degree.

"For the *robust and healthy*, I offer my Imperial Quarts.

"For the *more Moderate*, my Pints.

"For Dr Carpenter's *Patients*, I have laid down *a large quantity* in Imperial Half-Pints."

* "It was all nonsense," said our butcher, "for people to say that strong drink did them good: he knew better." "Why, then, do you drink?" I asked. And his reply was one that takes the wind out of a teetotaler's sails:—"Because I *like* it." But he meant to give over before long, and quoted a passage from John Bunyan in proof of his sincerity.—*A Londoner's Walk to the Land's End.*

II. The Westminster Review.

The article commences with the stale-story of Hick's Baking Company, (the peculiarity of which consisted in a patent apparatus for condensing the vapor arising from the baking-process, and thus collecting the fraction of a centesimal measure of alcohol generated in the panary fermentation,—which company failed *solely* because the quantity of spirit caught was too little to pay the expense)—but the reviewer appends the Apocryphal information (we should like to *see* the advertisement?) that the company announced their *bread* as better than other bread on that account!—and tells a story of the success of a Rival Baker who attracted custom to his shop over the way by the promise to sell "Bread with the Gin *in* it!" As the bold Baker had only to flout his rivals, and by the exercise of consummate impudence impose at once a fallacy and a fiction upon the public; so our *very* '*positive* philosopher' will "emulate that Baker, and meet Teetotalism as boldly as he met the Anti-gin Bakers." The parallel is perfect: for not only is "the principle the same *at bottom*," but the process all thrö. As the Baker, for purposes of profit invented doctrines and distinctions which did not exist in reality, so our reviewer does *not* meet the actual Teetotalism, but only *that representation of it* which enables him to palm off his lacquered wares as genuine. He says—'A Placard will not suffice.' Yet we confess that he *has* contrived a most attractive Bill of Fare for his Vinous admirers—and tho the succession of promises and propositions may not be very consistent, they are delectably *imposing*. Here they are!

A Bill of Fare!

Alcohol is not a Poison—but a *disturber*.
Alcohol is a *very dangerous tricksy-spirit*.
Alcohol *is Food itself*.
Alcohol SAVES *Food*.
Alcohol is *rapidly* burnt as Fuel-food.
Alcohol *replaces* Plastic Food.
Alcohol stops in the body to *nourish* the Nerves.
Alcohol, kept continually present in the blood, would be *fatal*.
Alcohol, occasionally present, is *life-giving*.
Alcohol *is Force* itself.
Alcohol is *translated* into Force.
Alcohol is two-things at once—*tissue*-force and *heat*-force!
Alcohol, when used, has *no tendency* to excess!

Such a Baker's dozen of dauntless propositions may well extort an exclamation of surprize. Ο μοι ἐγων!

Having described the Bill of Fare, we proceed to test the various courses in detail, and to supply the *desert*.

I. *The reviewer, by way of background to his jaunty science, pours contempt and contumelious abuse upon Teetotalers, while professing to laud the Movement itself.* To wit—

"Exaggerations of rhetoric—confusion of ideas—follies of Fanaticism—outbreaks of zeal—passionate foolishness—pitiably ignorant—bitter animosity—*writings which rouse alternately laughter and scorn*—teetotal prejudices—teetotal logic—and all the 'wild and whirling words' with which they rival

Abuse.

Methodists and Emancipationists. 'Master Tommy' and mob of larger Tommies—etc. We confine *our* polemics to statements advanced by Dr Carpenter, and avoid the necessity of the pitiable exposure * of nonsense advanced by Champions less able. Let us find the vulnerable point in Dr C.'s argument, and we need not waste blows on *those who fight under his banner.*"

Tho perhaps not failing in respect to Dr Carpenter, the reviewer has shown so very little respect to other Advocates of the cause, that he can not complain if strict justice is dealt out to his own pretensions; but we can scarcely think that the compliment to the Professor will be relished by him at the expense of fellow Teachers of the same truth, to whom he is himself indebted for many of his views and illustrations. Teetotalism was a scientific system, as well as a vast Popular movement, many years before Dr Carpenter perceived its Truth—and even now there is neither a single idea nor illustration of importance in his Works on this topic, which had not been widely inculcated upon the people at the time his Essay was written. It is an error, therefore, if not a pretence, to talk of our scientific Advocates fighting under *his* 'Banner'—the truth being that our Medical teetotalers have not infrequently objected to the looseness of many of Dr Carpenter's positions;—and it is a still more flagrant error in History to talk of *Father Mathew* as having "effected a great and salutary revolution," when the fact is, that in Ireland things have gone back nearly to their old position, while in England his mission was never more than a transient stimulus to a movement which had already attained a prodigious magnitude and influence amongst the middle and laboring classes of our northern, and especially of our manufacturing, districts. Teetotalism existing as a system long prior to the publication of Dr Carpenter's *Prize Essay,* we do not hold the Truth responsible for any of his forms of statement, or indeed of any individual, however eminent—and tho we thoroly understand *why* the reviewer selects that Essay as typical, we shall meet the merits of the case on quite independent grounds. In arguing with such reasoners as the reviewer, we make no loose admissions, to be retorted upon us, but *distinctions* which place our weapons above his reach. The fact is, Dr Carpenter is a far better physiologist than logician—and *so* our reviewer uses the defective phrase as an instrument for combating the genuine fact. The plain truth is, that Prof. Carpenter is appropriated as a 'stalking-horse' for attacking Teetotalers in general, and his admissions are employed, alike by the Pall-Mall Beer-agent and the Westminster reviewer, to eke out the deficiencies of a barren logomachy and a bastard logic. Let the reviewer, then, affect what scorn he pleases—we will appeal to the broad common-sense of the people, and to the unsophisticated heart of the nation; his palpable unfairness—his logical shallowness—his cowardice and his weakness,—shall all be made plain to the Public. Even if the scorn he puts on in the company of his *clique* were real, the Teetotalers will safely survive it.

Ignorance of the Temperance movement.

"Scorn'd! to be scorn'd by one that *we* scorn,
"Is that a calamity hard to be borne?"

* True—the pretended 'exposure' would be 'pitiable.'

In other respects besides contemptuous words, the reviewer is extremely offensive. He often *insinuates*, if he does not distinctly intimate, that teetotal writers are dishonest—in one place, indeed, the charge is undisguisedly made. He accuses them of *keeping back* facts and opinions which do not suit them—of *omitting* some, and *not alluding* to others, where they would go against their argument. Now, were that true—it ought to be exposed. But no *proof* is given: it is simply asserted. We will show, beyond all question, that the reviewer falsely imputes to others what he really practises himself.

II. *The reviewer fabricates the arguments which he calls Teetotalism; and imputes to the Teetotal body teachings which teetotalers repudiate.*

"Teetotalism rests upon two pillars, and upon only two—
1. That Alcohol is a Poison, *and not a Food*."—p. 95.

Fiction the first.

We answer—Teetotalism rests upon *one* pillar, and only one—that of *Fact*. No one knows better than the reviewer himself that no Truth or System can rest upon *words*—or formal propositions. The "circle of the *Westminster*" for whom he professes to write, may be hoaxed with verbal tricks, but we assure him the Teetotalers have too much of the "energy of good sense" to be deluded with the mere instrument of thinking. The teetotal body consists of Millions of Men—and millions of hard working, hard-headed men, not mere *dilettantæ*,—of men who have practically tried both sides of the question, and accept Experience as the best and highest evidence—the very argument of God. They have *found* that ALCOHOL IS PHYSIOLOGICALLY BAD—and that is what they mean, and we mean, by *Poison*. Does the reviewer say—"Alcohol *is* Food." They quietly respond—"We are *better without it*." Does he say—"It is Force, Vitality," etc. etc. They still answer—"We are *better without it*." Their pillar, and our pillar, then, remains undisturbed by swindling definitions and drivelling dialectic of this description. Call *the bad* 'Poison,' in the common sense of that word,—or in any newly coined-sense,—or call *the bad*, Food or Fuel, or whatsoever it may please you.

"What is it? A learned man could give it a clumsy name.
"Let him name it who can, the *effect* would be the same."

The Teetotaler stands firmly upon his Rock of Fact, and laughs to scorn the pretensions of 'Positive Philosophy.' *Why* the reviewer foisted in the words "*and not a Food*"—will be presently made plain. So far are they from being authorized, they are imputed to us in the face of direct statements to the contrary. In our *History of Alcohol* (1846) we have expressly anticipated the *Westminster's* quibble. "Negatively, a poison may be described as that which can not fulfil the purposes of Food and Drink—*or which can do this in no degree innocently, or permanently*" (p. 36). Now the reviewer himself allows that alcohol *would* be fatal were it retained in the system *as continuously* as food. Hence, we answer, granting for the sake of argument that *one* of the ends of food is fulfilled by alcohol, as the same end might be also answered by Castor or Croton oil, or by some naturally-poisonous root,—how would that alter the fact that *in other respects* it was bad?

"2. That whatever is true of the *excessive* use of Alcohol is true also in

Fiction the second.

proportionate degree of the *moderate* and *occasional* use. On these two the whole argument rests. It will be our task to prove the first position a scientific error, the second a fallacy—Alcohol *is* Food; use is *not* the same as abuse."

The reviewer, however, might have saved himself the trouble, had he so wished, since he well *knew* that he was only fabricating premisses for us, so that, in knocking them down, he might lead his readers to suppose that he was demolishing Teetotalism. But this is *not* Teetotalism. We do *not* deny that Alcohol is Food in *his* sense of that word,—on the contrary, we have admitted it since 1843 (as the first volume of our Essays will prove)—but we maintain that, compared with natural food, it is *dear* as fuel and *bad* in other relations. Neither do we hold that *whatever* is produced by drinking a bottle of brandy—say 'dead-drunkenness,' or apoplexy—is *also* produced *on a little scale* by a spoonful, or a drop. This is another logical-fabrication, made expressly to be overturned, because our real position was felt to be impregnable, and is therefore, all thrö the article, carefully kept out of sight. Does any man out of Bedlam imagine that even the most illiterate Teetotaler ever dreamt of a *hundredth part* of a fit of apoplexy!—or of a *fraction* of dead-drunkenness? In our work already cited, we have distinguished various effects of Alcohol resulting from various use—as "general and remote," "chemical, vascular, and nervous," and even distinguished the various degrees of the general effects—as, 1, *Excitement*—2, *Drunkenness*—3, Coma or *Apoplexy*—actually explaining how '*excessive* excitement' will pass into 'paralysis.' At p. 100 the reviewer himself quotes a passage from Dr Carpenter in which the *excessive* use of alcoholics is said to produce *acute* morbid-symptoms, and the *habitual use* in smaller quantities, *not the same*—but *chronic* rather than acute effects, etc. He knew, then, that the position he imputes to us is *not* authorized; and therefore, if his 'whole argument rests' on these *fictitious* pillars—it is already exploded into wrack and ruin. Instead of dragging any real Hector round the walls of Troy, he has been more Quixotic that the Knight of La Mancha, for he has actually erected his *own* windmills, and then made-believe that they were *our* giants! Worthy *Leader* of a select 'circle'! After this, what credit can we award to the avowal that "his purpose is *not to cast a stone of obstruction in the path of the Temperance movement*"? All recent attacks have been preceded by the same whine, but, to say nothing of the vituperative epithets just specified, we have here an elaborate and determined attempt to destroy the faith of the public in the *scientific character* of the movement—and this by a wilfully false representation of its logical and scientific basis! He would, forsooth, not cast a *stone* in its path; he only finesses to withdraw the *corner stone* of the Temple, and substitute in its place a sand-bag of his own filling!

As he commenced with concocting sham-premisses for the Teetotalers, so he concludes with the same discreditable trick. Professing to be a very Matador and "take the Bull by the horns," he is in reality only a *Chulos*, assailing an emasculated Brute of his own!

Fictions third and fourth.

1. "That *the effect* of alcohol is only *temporary* (transient.)"
2. "That Moderation *must* lead to excess."

Now teetotalers assert transiency but of one of many effects, the *pleasurable* effect;—they affirm the *permanency* of its *pernicious* effects when regularly imbibed in *any* quantity. If the dropping of water will wear away a stone, by *imperceptible* operation, within a greater or lesser period, according to its cohesive-resistance,—or if what is equally certain, even hard-water will in the course of generations alter the digestive functions of whole families and districts,—the effects of the daily use of Alcohol on the Human Body, cannot be less permanent and sure. The reviewer uses the word 'effect' as if Alcohol, according to Teetotalers, had but *one* effect—and then coolly remarks of its transient *stimulant* effect—"This is no argument against its virtue;" which would be true *if these were* ALL *its effects!* The second proposition is equally a misrepresentation. The real doctrine is, that the use of *narcotic* drinks (not tea) TENDS to excess, and the reviewer himself allows that the tendency is developed in so *many persons* as to make our movement a national necessity. That many escape, Teetotalers not only know, but habitually refer to in pointing out the stupid folly of tampering with so 'tricksy' and 'dangerous' an article *because* some escape. The reviewer can not fail to know this, and therefore the reviewer imputes to us a position which he knows is *not* ours.

On lesser points likewise, yet *always with a purpose*, the reviewer misrepresents teetotalers. Take a few samples.

Fiction fifth Perversion as to the etymology of intoxication.

"The argument may serve the followers of a writer who claims the etymology of *intoxication* as a PROOF that Alcohol is a poison; but philosophy shrugs its shoulders at such a *proof*"!—p. 99.

And well it might!—but how should Moral Philosophy act in respect to so audacious a fiction? The reviewer can not find in the whole range of teetotal literature a single writer that makes the claim imputed to Dr Carpenter, who simply says, that the condition of *drunkenness* may be *rightly asserted* to be 'poisoning,' since it is called *intoxication;* and that the continental use of the word in such phrases as 'arsenical intoxication' and 'iodine intoxication,' is not without its *significance.* The reviewer can not believe that the Professor intended to cite this comparative use of a word as *proof* of the physical fact that alcohol is poison. At any rate, his 'predecessors' did not—for in the *History of Alcohol* the etymology of intoxication is referred to as showing what the *intoxicant* was *according to "the universal judgment* of Toxicologists, and of the human race"—but no one ever dreamed of using the 'judgment' about a fact, as a *proof* of the fact.

On the very next page the reviewer concocts another fiction:—

Fiction sixth. Vegetarian imputation.

"Mutton chops have, *when taken in moderation,* * a Nutritive value which no Briton is bold enough to question, except the Briton laboring under the fallacy of Vegetarianism—*a kindred fallacy with that of Teetotalism;* yet Mutton-chops, taken in excess, will *kill* with the certainty of arsenic."

But do they *poison* because they *kill?* Is all killing, poisoning?

* Why this verbiage, Oh delectable coiner of definitions? Do they *lose* their nutritive value because we take three instead of two? If so—why say, just afterwards, "*over*-nutrition is fatal"?

If not—what is all this to the purpose? No one disputes the injury of *excess* in good things: but because an improper quantity may do injury, is there in this world *nothing of improper* QUALITY, physiologically regarded? Does the reviewer ignore poisons altogether? Is he running a tilt against the Toxicologists as well as the Teetotalers? If so—it is some consolation to find, that, concerning a real difference between starch and strychnine, rice and rum, opium and pudding, tobacco and tart, or even coffee and custard,—we fall into a vulgar fallacy in company with Orfila, and Dunglisson, and Hooker, and Taylor, and Christison, and all other writers on *Materia Medica* anterior to the advent of our 'Positive Philosopher.' Nor is it true that Teetotalism and Vegetarianism are kindred in their principles: nor that Vegetarians deny at all the Nutritive value of mutton chops. Their books, now before us, give *precisely* the same nutritive value to Chops which is assigned to them in the writings of the great chemical analysts: and it was, by-the-bye, these sneered-at men who first pointed out Liebig's fallacy as to the wondrous value of *gravy* (or creatine)—which the reviewer now admits to be unfit for nutrition—but a fallacy which the reviewer's authority, the Durham lecturer, in his *Chemistry of Common Life*, has perpetuated. Again—

Fiction seventh. Evasion of the real issue.

"The Temperance question is not, How much better is beef than brandy? but What is the value of Brandy *in itself*."—p. 122.

Think of a Miller going to Market to purchase corn. He ascertains the average price of *Wheat of the best samples*. But a Farmer, a 'positive philosopher' in his way, comes up with a sample of *smutty wheat*, for which he demands a much higher price. The Miller looks at it and answers—'It is *bad* wheat and not worth the price.' Whereupon the Farmer responds—"Oh! the price is not the question—nor "the *relative* quality. You can improve it in *your* mill; if it *does* con- "tain a little *ergot*, folk can bear it, just as they can bear stinks and "foul-air. You labor, my friend, under a kindred 'physiological error' "with the Teetotalers—you should'nt compare bad wheat with good, "as those ignoramusses compare brandy with bread; for that estab- "lishes a false standard of price. You should study 'positive philoso- "phy' and the *absolute;* the real question is, What is the value of "*smutted wheat* IN ITSELF?" If the 'positive philosopher' were to succeed with his palaver, the Miller would certainly be no negative fool. What the reviewer says is *not* the question—is *precisely* the question, unless he knows our meaning better than ourselves.

Another glaring perversion of truth occurs just after, where he imputes these doctrines to us:—

Fiction eighth. Perversion as to the *tendency* of alcohol.

"Moderation *must* lead to excess: to suppose there is any *necessary connexion*, is to ignore physiology and fly in the face of evidence. ... We know what a stimulus tea is—why are we not *irresistibly led* to fatal excess? Although Moderation *does* frequently lead to excess, there is NO SORT OF NECESSITY in the sequence."

In our first volume we have expressly treated of the *etiology* of Intemperance; yet we have nowhere used the words 'necessary,' 'irresistible,' or '*must*' in such a connexion. We have expressly repudiated them. Even Dr Carpenter only goes to the extent of saying that the

action of stimulants is '*most commonly*' manifested by reducing the susceptibility of the organism—and that "*if the demand be yielded to,*" and the quantity of the stimulus *be* augmented, *then*, what began in little, ends in excess. We had occasion to rebuke a gross perversion of this doctrine in Mr Conybeare's essay in the *Edinburgh Review* for July 1854; the *Westminster* now indulges in the same illogical 'translation' of fact into fiction. But can not a writer, who plumes himself on his logical faculty, express himself less ambiguously than he has done in the passages reproduced?—or is the confusion affected only? The word 'necessary' in the first sentence is used in the sense of '*absolute* and *invariable*'—and therefore 'irresistible—but there is another use of the word, as he admits in the second sentence, in speaking of *sorts* of 'necessity.' He grants that the use of stimulants often *does* lead to excess,—and that excess *is* a 'sequence' to use. Can he contend that the actual connexion in those cases is *not* that of cause and effect? or that the *nexus* of cause and effect illustrates *no sort of necessity?* At p. 113, the reviewer tells his readers that "Green Tea produces paralysis in animals," and that even the *odour* of Tea renders the men who unpack the tea-chests liable to paralysis. Now, granting tea to be bad—how does *that* make alcohol good? "Two blacks make one white"—is the logic of fools, not of philosophers. He says, also—

Fiction ninth. The stimulus-evasion.

"The teetotalers [not Dr C.] declaim against Alcohol *because* it is a stimulant, and *are eloquent on the virtues of tea and coffee*, which are also stimulants."

Both these statements are the reverse of true. At page 43 of the *History of Alcohol* we expressly discriminate "the *kinds* of stimulants—" quote a long passage from Müller's *Physiology* "on Vital and Poisonous stimuli"—and give that very view of the difference between normal *nutritive excitement* and abnormal *destructive excitement*, which the reviewer himself reproduces (ten years after) at p. 124 of his wonderful article. Of course, we may be altogether wrong in making the distinction—but, being made, it is too bad in an opponent to erect a charge of inconsistency against us by ignoring the exposition. We do not object to air, light, food, water, heat, and other *vivifying* stimulants—but only to *bad* stimulants, or to good ones *mis*-applied. As to the use of Tea and Coffee, we have repeatedly cautioned the public, and instructed it as to their qualities. There is absolutely no literature extant which so little eulogizes Tea and Coffee as the Temperance literature. Viewed as instruments for *weaning* men from alcoholics they are blessings; but the excellence of their physiological effects is more than doubtful.

Fiction tenth. Teetotalers charged with ignoring their own arguments!

At page 106 we find another fiction, made for the purpose of inducing the belief in his readers that Teetotalers are either ignorant or dishonest in their advocacy.

"The Temperance Advocates have been copious in proving that Pudding replaces Wine; *but they have ignored the other truth*, that wine replaces pudding. * Their reciprocity is all on one side. Had they *not* ignored it, they could not have declared Alcohol to be a Poison."

* So far from ignoring it, we quote Liebig's statement of it. See *Glass of Pale Ale*, vol. i. p. ix.

While we object to the word 'replace,' we readily grant the fact *intended* to be expressed. But so far from ignoring that fact, we have again and again *insisted* upon it to show that *our appetites and digestion have not suffered* by giving up alcohol; and that the cheap and innocent pudding was *better* than the dear and defiling poison.

At page 107 he charges Teetotalers with 'Confusion of Ideas.'

The teetotal sense of *Nutrition* turned topsy-turvy.

"They quote, with foolish triumph, the assertion of Liebig, that 'as much flour as can lie on the point of a table knife, is more *nutritious* than five measures (about eight quarts) of the best Bavarian beer.' They omit to add—that the word *nutritious* points *to a more restricted idea* than that which *they understand* by it."

The exact contrary is the fact. In our first volume (Appendix, page xi.) the whole passage is given, which distinguishes the tissue-forming (or nutritive) food, from the starchy (or fuel) food. For ourself, we always use 'Nutrition' *as Liebig does*—and object to making it so comprehensive as to signify what the word *Aliment* already sufficiently expresses. Obviously, a common word is wanted for the idea of Plastic-food,—as opposed to Fuel—and in '*Nutrition*' we have got that word. (See Webster.) The 'confusion' is with the reviewer, not with the Temperance advocate. And we may finally observe, on this head, that with all the reviewer's pretentious assumption of superior science, he has not stated, nor can he state, a single FACT bearing, *pro* or *con*, on this question—which is not already published in our essays and discussions; whence even answers to all his own fallacies may be easily extracted.

III. *The reviewer indulges in subreptitious Definitions and Dialectic.*

Great part of the article, indeed, is a play upon words—mere verbal juggling—neither less immoral, nor more clever, than vulgar thimble-rigging or common card-tricks.

He purposes to discuss a question of Food *versus* Poison, or Poison *versus* Food. To do this, he "calls in the aid of Logic to combat a fallacy; of Science, to combat a scientific error." Now mark the steps of his procedure! Two propositions are first contrasted.

Dishonest definitions.

"Alcohol is a Poison, and not a food."

"Alcohol *is* Food"—[*Ergo*, Alcohol is *not poison*!]

Of course, he was not foolish enough to append the *ergo* as a formal conclusion from the false contrast of the two propositions—but dishonest enough to leave his readers to *draw* the inference; knowing that the common-sense of men *must* be averse to calling Food and Poison by the same name. To begin with, then, he uses the words implicitly in their ordinary meaning. By-and-bye, however, after diverting the attention thro six pages, we find him professedly coming back to his 'paradox'—and yet proposing a somewhat different question for solution—namely, Can alcohol be *called* intrinsically a poison? The real question, however, is—*Is* alcohol dietetically injurious to persons in health? Is it good or bad, as a rule, when taken in sensible quantities? Settle this—and we do not care one straw what you *call* it. He confesses to an 'air of paradox' in his proposition, as arising "from the popular ideas of Food, which are extremely vague and confused"—but, as we have seen, not *so* confused as to prevent him

from taking advantage of them at starting. "To the popular mind," says he, "it would be equally paradoxical to say *iron* is food—*salt* is food—*chalk* is food." And the reviewer proposes "the simple definition of Food—to be *Force*." So, according to this, Air is food—Water is food—Light is food—Poison is food—and, lastly, *Food is food*. If our readers do not regard all this as worse than trifling, it will be some consolation to reflect that, after all, when a 'Positive Philosopher' *demonstrates* that 'Alcohol is Food,' it is simply Food *in a new sense*—and means no more than what a common-sense person means by 'alcohol is *not* Food.' Our reviewer has, therefore, no special ground of quarrel with Teetotalers—but having invented a new philosophy and a new *lingo*, he is naturally very dissatisfied with the current language of Science and Society. Food was *versus* Poison, to begin with—Poison is only excess of Food or Force, to end with! He plays with 'Poison' the same game as with the term 'Food.' Poison—even arsenic—is only poison when the *accident* of 'death' follows. It may 'disturb'—but disturbance does not kill; even if it brings on "head-ache next morning," the capital of the constitution pays the piper and *rectifies* the wrong—ergo, the 'disturber' was *only* a 'disturber'—not a poison! Besides, disturbance is *stimulus*, 'life' itself is stimulus (so is a fever)—*ergo*, the stimulant alcohol is a stimulus, not a poison—(and fever, of course, not a fever, but only *disturbed* health!) If this is 'positive philosophy,'—and it is identically the reviewer's reasoning—what is positive folly?

Absurd definition of Food.

Hear how the reviewer further juggles with the word 'stimulus.'

"The temporary presence of alcohol is *only* a temporary DISTURBANCE, and this disturbance is a *stimulus*."—p. 113.

Difference without distinction.

If 'prolonged'—he concedes—the stimulus grows into *poisoning*! So that opium is not a poison for the first period after taking it, but suddenly becomes such *as the clock strikes* some hour unnamed! Opium and alcohol are good-things in the forenoon—innocent as sugar—but Poisons at night! This is reversing an admission of another opponent—who says that even Pale Ale is bad *before* dinner, but good *after*! Let us apply our essayist's definition to the ordinary language of medical writers. Williams, in his *Principles of Medicine*, says—"The nervous system is an especial subject of the *disordering* influence of intoxicating liquors. A large quantity, taken at a time, is a *narcotic* poison, inducing [first] *a short period of cerebral excitement or intoxication*—followed [second] by *insensibility*, in which the functions of the brain are more or less impaired. Hence apoplexy, palsy, phrenitis, or delirium tremens may follow, and the whole frame may suffer, from the effects of the POISON" (p. 27). All a mistake, quoth the *Westminster's* wiseacre!

Specimen of logical leger-domain.

LIFE itself is a stimulus.
Disturbance is a stimulus.
ERGO, *Disturbance is Life!*

Logic will dissipate the logical-fallacy.

Intoxication is cerebral *excitement*.
Excitement is stimulation.

Stimulation is Life.
ERGO, *Life is Intoxication!*

Logical readers may recollect the old syllogistic illustration.

All Cretans *are* liars.
But Epaminondas is a Cretan.
Ergo, Epaminondas is a liar.

Epaminondas *says* the Cretans are liars.
But Epaminondas is a liar.
Ergo, the Cretans are *not* liars.

Now our reviewer will out-sillygize this illustration. He has 'two strings to his bow.' First, Alcohol is *not* a poison;—second, Alcohol *is* a poison, but harmless. Take his own words:—

Major. "Carbonic acid is a slow-poison; Wine accelerated poison; Brandy, rapid poison."

Minor. "But the organism has an admirable contrivance for RIGHTING ITSELF."

Conclusion. That which wronged the system was right, and therefore *not* a poison!

By such 'fantastic tricks,' paraded as philosophy, the reviewer can prove or disprove whatever he pleases—convert a Destructive into a Conservative agency—and, in short, jump over his own head in most ingenious and approved style!

The reader will note that the symptoms enumerated by Dr Williams are the *consecutive results* of the action of alcohol: and the *initial* action is as really a *disturbance* of the natural balance of healthy life as the *insensibility* which supervenes. They are different degrees of the action of the same poison.

According to the reviewer, however, we have poison*ing* without a poison!—since alcohol is not a poison, and besides the *substance* alcohol we have only the *word* 'EXCESS' to account for the effect. Does the reviewer mean that the *term* 'excess' is *poisonous*?

A misrepresentation re-appears in the shape of a logical quibble:—

A quibble.

"The effects of the excessive use of *any*thing are not *always* to be predicated, in a minor degree, of the moderate use. Deny the proposition and Teetotalism triumphs."—p. 101.

Bah! we admit the proposition, and Teetotalism triumphs as before:—and the reviewer knows it, for he immediately adds—"Any case in which it *is* true must depend upon intrinsic *qualities*, not affected by relations of *quantity*." Now this is exactly what we always *have* said of alcohol; *not*, as he further falsifies, of *all* its effects; for bad things have varying effects according to their *quantities*, as well as good ones—but that *it* always produces *some* bad-effect. This is asserted on the ground of FACT—not deduced from some miserable verbalism—still less from the fatuous generalization which the reviewer has himself generated, and then attempted to affiliate upon us!

In the same fashion, he plays fast and loose with the word 'Nutriment,' as we have already seen. Its proper and specific sense is already "that food *which repairs the waste of our bodies*." This, also, is the sense of it as used by Liebig in that very theory of Life which the reviewer reproduces. This also is the explained sense in which

we, and other teetotal theorists, have all along used it in this discussion. But to get quit of the certain fact that alcohol can *not so nourish*, the reviewer puts a different interpretation upon the word—and while charging *us* with using the word in *his own sense*, also endeavors, by exploding these word-shells, to dislodge us from our 'triumphant' position. No doubt, had it been needed, he would have tried the same experiment on the word 'Fuel,' and generalized it into whatever was required for getting rid of an inconvenient fact.

How *logic* proves Alcohol to be Food!

Here is another superlative specimen of illicit logic!

"Food is Force:
"Alcohol is Force:"
Therefore "Alcohol is Food"!—p. 104.

Now for a perfect parallel to this.

"A Positive Philosopher is a Man.
"A Fool is a Man.
"*Ergo*, a Fool is a positive Philosopher."

Or, perhaps this may *suit* our reviewer better?

"A Fool is a Man.
"A Positive Philosopher is a Man.
"*Ergo*, a Positive Philosopher is a Fool."

Or, to reduce his logic to the level of the vulgarest capacity, say—

"A Gander is a Fowl.
"A Dorking Hen is a Fowl.
"*Ergo*, a Dorking-Hen is a Gander."

One thing is plain—that any body deceived by such logic as the *Westminster* deals out, must be a goose indeed. Yet this most despicable of sophists has the audacity to talk of "the pitiable exposure of teetotal nonsense and teetotal logic"! We confess that the reviewer *has* most effectually succeeded in "rousing alternately *our* laughter and *our* scorn"—and when we reflect on this miserable prostitution of literary talent, we add, our *indignation* likewise.

Some of the reviewer's fallacies are incredibly puerile. If not manufactured sophisms, they are sheer stupidities. For instance, at page 99, he actually makes the following proposition—

(*a*) "The fact that the term 'intoxication' was used to express drunkenness-with-alcoholics, by those familiar with its etymology, is a *proof that they* THOUGHT *alcohol to be a poison*"—

Words and Things confounded.

One and the same with this totally different proposition:—

(*b*) "A proof of the fact that alcohol IS a poison!"

According to the *Westminster's* logic, therefore, were we to cite the fact that *in the thought* of a Jury, as proved by their verdict, Count Vivian was a Swindler,—it would be equivalent to the *proof* that Count Vivian *is* in fact such! To a logical *Jacobus Corvus* who can 'translate' so many different things into each other, these may seem to be the same—but to us, "a proof of what men THINK to be a fact," is, after all, not the same as "a proof of what *is* a fact."

The reviewer revives a notion already refuted in our *Corrections of the Chemistry of Common Life.*

Meaning of 'natural.'

"How is alcohol *not* 'natural'? The phrase can have two significations, and but two: first, that Alcohol is not a stimulus *which man employs in a state of nature*; second, it is *not consonant with the nature of his organism*. The second is a pure begging of the question."

Is it! We always use the words 'natural' and 'unnatural' as descriptive, either of what *is*, or of what we *think* is: but we do not expect people to take our word for the fact, apart from the evidence. Where, then, is the justice of this imputation, that we go-a-begging? It is simply a little masked declamation—abuse with a *circumbendibus!* Volumes of evidence of the poisonous, or at any rate injurious, action of Alcohol, from general Experience, Facts, special and distinct Experiment, have been published—but the reviewer prefers Dr Carpenter's word-reasoning as a subject for his verbal mystification, and (to save somebody an exposure) *begs* to be excused from noticing—the invincible FACTS!

"The phrase Natural," says our Diorist, "*can* have but two meanings!" Nevertheless, *we* have often used it with a third. "A stimulus *which man employs* in a state of nature," we allow to be one meaning; and *adaptation* to the organism is another. But the reviewer—(Is he an Atheist as well as a Positive-philosopher?)—has ignored a third sense equally plain—the *index* to his second, and the *explanation* of his first—namely, a stimulus *provided* FOR man, by Him whose wisdom is infinite and whose goodness is perfect. || This, however, being the very sense in which the fact expressed *can not* be contradicted—is fraudulently ignored as impossible!

|| 'The state of Nature was the *reign* of God.' —POPE

More quibbles.

"The first sense [of *wild-state*] is in flat contradiction with experience, which shows the Savage *only too eager* for Alcohol—when he can *get* it, although he has not always the wit to *discover* it."

Three errors in three lines! (1) There are whole tribes of savages who are *not* 'eager' for it—and there are few savages who, on first tasting it, are not disgusted with it. Moreover, (2) we deny that a *natural* state is a *savage*-state: we affirm that a savage-state is an *in*human and *un*natural state. The reviewer as usual, is shuffling the cards: it is his own assumption that the two words 'man' and 'nature' are identical with 'wild or savage.' (3) The phrase 'discover it' is ambiguous, and should be either *invent* or 'make' it, or discover *the process of making it.* * Observe the quibble he now brings into play.

First, it is asserted as our meaning of *natural*, that it signifies, *a state of Nature prior to Art*, 'Invention,' or 'rudimentary civilization.'

Second, it is affirmed (rightly) that we deny alcohol *to be* part of such a state.

Third, the reviewer (for himself) then denies our denial—and says it is a flat-contradiction to experience! Altho,

Fourth, man in a state of nature has not always the wit to *invent* alcohol (and therefore has it not!) And

* Immediately after, he adds—"Man discovers *fermentation* [not alcohol] —*as* he discovers the tea-plant." Does *as* mean 'in the same way,' or, incorrectly, 'thus'—'also'? An error is involved, of false comparison, if the former—for *invention* is Art, but not so Tree-*finding*. The tree prëexists—not the alcohol, or the *brewing*.

Fifth, the savage *has* it (in a *prior* state of Nature) *because* he is too eager to *get* it—when he can get it, from Art!!

Of two things, one: he who cannot reason is a Fool: he who *will not*, a Knave.

The same absence of real logical perception (*or*, if he prefer the other horn, the presence of wilful sophism,) is evident in nearly all his analogies. He thus expresses his own estimation of the relation between Truth and the Soul. "Sad—but inevitable," says he. 'Sad' enough, the belief—but the alleged fact and the inevitability is another question. *We* don't believe in them.

Atheistic and absurd comparisons.

"Human Nature *is so constituted* [by whom?] that *all* great movements NEED LARGE *admixture of error to achieve success.* ... Such admixtures are *as necessary* as the admixture of *in*organic matter *with the organic matter of our food.*† Pure truth, like pure albumen, is an imperfect aliment for human beings."—p. 96.

The reviewer is entitled to the credit of acting on his own belief, for we can scarcely find a grain of pure truth in the whole article. This is precisely why we quarrel with it. Such admixture, at least, does not suit *our* stomach, and is as nauseous as Bitter-beer. Men, indeed, as a sacred writer has long ago observed, may be given up to believe a *lie*—as men may corrupt the system into retaining Hop-water,* or the 'poisoned poison' of Pale Ale—but, notwithstanding 'Positive Philosophy,' which is fast running into Positive Humbug, Human nature is not so devilishly constructed as to require *lies* for the soul and *poison* for the body. But mark the elements of his parallel between Mental and Bodily food.

1st. *Pure*-Truth is like *Pure* albumen. Now the fact is, that pure albumen is quite unobjectionable, and answers *all* the purposes for which, as plastic or nutritious matter, it was made. We take it often to breakfast, in the shape of a warmed egg. "But you could'nt live upon *it* alone?"—says our logician. Certainly not—we take the yolk and the toast *with* it. "Then something else is necessary," crows the *Westminster*, in 'foolish triumph.' Of course—we respond—something *else*—but not something *poisonous*. "But," continues our reviewer, "pure albumen is an *imperfect* aliment." We retort—nothing of the sort. There is no imperfection about it. It is quite good for its end—but of course there are other ends of food; and it is only *part* of food: not, therefore, at all *im*perfect, or *im*pure, or *un*fit. If I have £20 to pay, and only 18 sovereigns in my purse—I do not say that any one of the sovereigns are *imperfect*—but only that where 20 perfect things are needed, 18 won't do. The reviewer quibbles doubly—using the word *pure* for the word *alone!* and the word *imperfect* for the word *insufficient!*

* "Hop—*apt to disagree when given simply.*"—Allsop's VIVIAN.

† This reminds us of another of his absurd comparisons. Crude Chalk is *food* to pigeons and fowl—therefore to human *widgeons* and *philosophers!* (Hence, we are to mix error with truth!) Fowl have the habit of generating and laying *eggs*—in short, have a peculiar secreting and excreting function which determines the need for chalk. But do philosophers lay *eggs*? If they do, some of them are unmistakably addled.

Charky philosophy.

2nd. FOOD consists, he says, of plastic organic matter (albumen), respiratory organic matter (fuel), and *in*organic matter [chalk, not cheese]. If the first of the three factors—pure albumen—is 'translated' (to use the jargon of the reviewer) into *pure Truth*—in the name of common sense, what corresponds to the *Oily* (gammon?)—and what to the *chalky* food? Nothing is left for their correspondent save '*Error*'! Again,—if the inorganic matter corresponds to *pure error*,—then, to apply the figure both ways, we reach the conclusion that chalk is as good as cheese, and error as true as truth! Was ever British public insulted with such chalky philosophy before?

To the reviewer's contemptible comparisons we reply—Truth (as mental food) corresponds with *all* Aliment (as bodily food and drink): and neither Truth nor Food is bettered by *adulteration*. Moreover, if chalky-Error *is* necessary for the soul, and if *pure* Truth disagrees with it,—then why *call* the last True and the former False? The reviewer's quibbling ends in destroying the *test* of Truth, as his philosophy begins by ignoring his *trust* in it. If this be 'positive philosophy'—then we will add, in all reverence, a prayer to our litany—"From positive philosophy, *Good Lord deliver us!*"

IV. *The reviewer perverts Science for the sake of Sophistry, and enlists Philosophy in the service of Error and Fraud.*

What is a poison?

The animus and method of the article having already been laid bare, we proceed to show that the reviewer's Science is spurious and his Physiological Philosophy superficial. To begin with his Definitions.

1. WHAT IS A POISON? Our own answer has been given ten years ago: we cite an explanation and a definition which have anticipated the quibbles of the *Westminster*.

> Some writers,—not distinguishing between the *state* called 'poisoning' (i.e. intoxication), and the *agent* whose physical qualities had operated that state or effect,—have fallen into a singular confusion on the subject, and virtually denied the existence of *poisons* at all. For, if *that only* be called a poison which produces a deadly degree of injury, then, at one time it will not be a poison and at another it will, while food one moment may become physic the next!
>
> But this is absurd; for two pounds of beef is no more a poison than two ounces, while one grain of opium is as much a poison as one drachm. Nourishment and Respiration may differ in degree,—natural as well as morbid states,—but that does not entitle us to call one pound of *bread* 'nutritious,' and one ounce of it '*non*-nutritious'—or one pound of butter 'fuel,' and one ounce of it 'dross.' The terms *Nutritious* and *Poisonous* express the *permanent qualities*, or adaptations, of certain substances; they refer to an *essential nature* in specified articles.
>
> Poisoning may differ in degree, according to the *strength* or *sum* of the poisonous agent, or the power of resistance in the subject: it may (as in the first inroads of pestilential poisons) slowly pass from *imperceptible yet real effects*, up thrö the various degrees constituting *disease*, and finally terminate in that highest degree, the disorganization of *death*. Still, the first inspiration of tainted air contains *a poison* as truly as the last, tho it may be neither so intense in its character, nor so fatal in its consequences.
>
> What, then, is the essential quality in any substance, on account of which it is termed poisonous?

Its property of disturbing, in any degree, the natural functions or deranging the normal organism, of the Living Body, by virtue of its specific affinities or repulsion.

Negatively, a poison may be described as that which cannot fulfil the purposes, or supply the place, of Food and Drink—or which can do this in no degree innocently or permanently. Iron, soda, potash, sulphur, phosphorus, chlorine, etc., are substances contained in every article of nutritious food. In the form in which they exist in food, sheathed and concealed in the intimate organism of the substance and the *infinitesimal doses* in which they are necessarily consumed, they produce no perceptible effect, but answer wise and *essential purposes* in the animal œconomy. Exhibited, however, in simple mixture, or solution, and in their crude state, they *would* produce sensible and poisonous effects: or, in other words, manifest a *pathogenetic* influence. *

Then follows the classification of Poisons from Christison, with *alcohol*, Nux vomica, camphor, under the third head of "*Narcotico-acrid Poisons.*" Dr C. G. B. Williams, in his *Principles of Medicine*, even while contending for the medical-use of alcoholics, still allows the real quality of the article; as, we suppose, he would of quinine or arsenic, however useful, and thus speaks of the habitual drunkard, who, "*in proportion as he indulges in 'liquor'* [substitute 'food' and see how it looks!], loses his appetite for food, and his power of digesting it. *He then drinks and starves*, and the disease which ensues, comprizes the *exhaustion of inanition*, with the more direct effects of the ALCOHOLIC POISON." † The reviewer, it is clear, opposes all accepted Science, quite as much as he opposes Teetotalism: and we might fairly turn over this part of the question to the Medical Profession, for *them* to settle with the positive philosopher—only, while we are at it, we might as well enjoy the fun of dissecting the entire *corpus* of his spurious Science. Hear him, however!

Men starve on drink.

"The fallacy of Teetotalism lies in overlooking the fact that *quantitative* differences can produce *qualitative* differences ... The fallacy of arguing from *abuse* to *use*."

Teetotalers do *not* overlook such differences: do *not* so argue. What can be more stupid than to suppose that, in insisting on the effects of quality, they should therefore forget those of quantity! The truth however is, that by these erroneous allegations, he diverts attention from the *real* point—namely, What is the *qualitative nature* of Alcohol? Or, Is there such a difference in things as will justify us in calling one substance a Poison, and another Food? As we have seen,

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* *History of Alcohol.* p. 35. 1846.

† This may serve as the reply to the absurd story of men living for incredible periods on alcohol, *without food*—which the reviewer is surprized that Dr Carpenter does not notice! What if, like ourself, he did'nt believe in such stories? Nay, it is very questionable whether the reviewer believes them himself, for he distinctly admits that alcohol kept *continually* in the blood would be fatal? How, then, *can* he reconcile that fact with the statement that sots live for long periods almost solely upon *alcohol*? This is but one of many paradoxes which we have no time to draw out to their tiresome issues.

the reviewer virtually argues that there is not,—that Mutton is Food when you take two chops—Poison when you take four! But what are his positive tests? After some trouble, we discover a single line that seems incidentally to admit the possibility of a Poison and to furnish a touchstone for ascertaining whether Alcohol be one, or not.

Alcohol *not* food.

"Poisons have not the property of *replacing* wholesome Food."

And has *Alcohol* this property? We cannot live an instant without the *continual presence* of Food in the blood—of course, after being properly concocted by the organism. The *perpetual circulation* of such Elements is the correlative of Health, Strength, and Life. But what, according to the reviewer himself, is the *relationship* which Alcohol bears to this condition and attribute of Food? "IF ALCOHOL WERE "CONTINUALLY PRESENT *in the circulating current, the effect would be* "FATAL" (p. 113). From his own test, therefore, it inevitably follows that alcohol is *essentially poisonous*, for it can not replace this attribute of food. Food is a perpetually indispensable Friend—Alcohol would be fatal, if it were not speedily extinguished. *Without* Food always with us, we could not live at all: *with* Alcohol always with us we could not live at all. Nevertheless, says our Philosopher, the FATAL '*with*' is equivalent to the VITAL *with*—and that deadly agent whose *perpetual presence* is incompatible with existence, is the same with that Food whose *perpetual absence* would be equally fatal!

Distinction between *occasional* and *habitual* worthless.

And here we may remark, that for the end of proving a difference of operation, the distinction set up between the *occasional* and *habitual* presence of alcohol, is a real absurdity: not novel indeed, but not the less nugacious and unmeaning for being an echo of other emptiness. The *habitual* presence of pure food in the blood, or of soda, or iron, is not worse but *better* than its *occasional* presence (even supposing life possible with its temporary absence)—why, then, should it be otherwise with this new species of Food, *alcohol?* If half a bottle of wine, operate *like food essentially* (not merely in *one* particular), then the effect will be natural, or compatible with healthy action. Now suppose a moderate-dose to have *such* an action on the body from dinner to supper, before it is exhausted; and at supper to be succeeded by another draught, which will, if *like food*, operate at least till breakfast, when wine is again taken, which operates till dinner,—(that it *does so* the very breath reveals)—thus completing the circle of the day. Here, by the supposition, is the *continual presence* of alcohol, producing a round of *healthy* action, like food: how does the reviewer, then, arrive at his *fatal-effect?* Nevertheless, he is quite right in his *fact*: and, therefore, *we say*, reversing *his* plan, "*so much the worse for his theory.*" In fine, nothing can be more preposterous than the fancy, that an agent which operates like food during the first twelve hours of the day, would, if present, in precisely the same quantity, *operate like poison the other twelve!* It is the endowing of an abstraction, *Time*, with the power of inverting the properties of concrete things!

"Time and Space are not Gods."

The reviewer's supposition involves still another fallacy of the same kidney. He gives no *standard* of quantity, which does not resolve

itself at last into *distinctive quality*. A bottle of *real* milk is in quantity the same as a bottle of '*spirituous* milk'—yet, while the use of the first would be legitimate, even repeated twice a day,—he would rank the same quantitative use of the second as *excess;* and tell us that we ought not to argue from the abuse against the use! So, he would allow an ounce of Sugar to be 'moderate,' but a drachm of Theine to be poison! It is another example of the way in which he palters with language in a double sense. To quote the diction of the reviewer,—we are already pretty well "hardened against surprize at nonsense" or no-meaning; else we should stand agape at the manner in which a Westminster reviewer converts our mother-tongue into materials for a series of dissolving views.

We return, then, after hunting this pack of fallacies into their den, to our old definition of a Poison: proved (both by the *facts* adduced abundantly in teetotal works, but wilfully ignored by our critic, and by the test of the reviewer himself) to be strictly applicable to *Alcohol*, which (as he admits is 'demonstrably true') "produces such a *disturbance in the regular current of vital action*," as, if kept up *continually* like the action of food, would be Fatal. Yet, says he, with amazing self-stultification, "the stimulus is not *in itself* injurious."

2. WHAT IS FOOD? In replying to this question, the reviewer has again to repudiate the accredited and common-sense meaning of the word—in short, to reach a 'scientific triumph' over 'Teetotal prejudices,' he has to destroy the dialect of all the world prior to the advent of 'positive philosophy'! We accept this as another compliment to the truth of our doctrine. The reviewer finding the phrase 'Food' to be *too specific* for the purpose of foisting in his inference, proceeds to widen it, so as to comprehend EVERY-THING concerned in the development of Life or Force! Hitherto under the head of Diet we have comprehended only Food and Drink—now we have to learn that Drink is Food, because it is 'Force'—and Air is Food, because it is Force;—and by the same process the converse may be proved with equal cogency—viz. that Food is Drink, and Poison is Food, and Air is both, because they are all Force. On the same principle—or rather, no principle—it might be shown that the 'Fuel' of an Engine as vulgarly restricted to Wood, Coal, and Coke, is unphilosophical! —that fuel is whatever is necessary to develope 'Force,' Steam, or Heat—and *therefore*, as Air, and Water, and Grates, and Boilers, and Flues are needful—Air, Water, Grates, Boilers, and Flues are *Fuel*! Food defined.

While Teetotalers never denied Alcohol to be a *stimulus* (if *that* be food)—so they have always employed the term 'Food' in its current and correct sense—that of *meat*—defined by Webster, like Food, as "Anything *eaten* for nourishment." Hence a 'meat-offering' stands opposed to 'a *drink*-offering.' In Genesis we have the idea of solidness and eating. "The fruit of tree and seed—to you it shall be for *meat*" (or food). * But (apart from the *force*-folly) what is the re-

* Curious enough, in the language of the Mohegans, *meetsö* signifies 'he eats.' In the Hebrew, the phrase translated meat is derived from *m'-akal*, 'to eat.' As the original root *eta*, or *edo*, in one direction becomes *ge-eten*, so in another, *me-ate*: according to the dialectical prefix employed.

viewer's pretence for making alcohol to be food? A sentence from Liebig, and another from Dr Carpenter—to the effect that Alcohol is *fuel*-food, founded on the *mere chemical composition* and behavior of alcohol! The reviewer charges Dr Carpenter with contradiction, and asks—"How is this Poison suddenly elevated to the rank of a Food by its energetic persecutor?" No doubt Professor Carpenter will be able to answer his questioner †—but as we are not hampered with any such admission, having allowed no more than that Alcohol is often used up as Fuel,—we positively deny that it is Food in any philosophical sense of that word. But the human body is not a mere furnace or retort, for the play of chemical relations. These exist, on the contrary, for *biological* ends. Real food, therefore, must not only be that which is fuel, but which is so cheaply, safely, and *innocently*;—while it is warming the house, it must not be *burning* it—while it is helping to build-up it must not be undermining. The reviewer virtually admits that alcohol creates a *disturbance* in the house—such a one as, continued, would end in ruin—and that its *comparative* innoxiousness is owing to "*the principle of rectification which the organism possesses, in its various methods of elimination.*" Now we object that it is absurd to take *that* as food to strengthen the body, which calls out *the body's prëexisting strength* to resist the intruding-disturber. There is a clear loss of power—if nothing worse—the loss of that for purposes of *re*sistance which is professedly given by way of *as*sistance. Food is the householder of the living temple; but the reviewer admits that Alcohol must not even be a perpetual *lodger*!

Attributes of Food threefold.

There are three attributes of Food, as we have frequently shown; 1, The *best adapted chemical composition*: in starch and sugar, for instance, the Oxygen and Hydrogen are united in the proportions to form water;—2, *Physiological neutrality*, so as not to 'disturb' the natural functions;—3, the power of indicating *satiety;* thus being, teleologically, perfectly safe, and needing no supernatural power to check the tendency to excess. Notwithstanding the assertions of the reviewer—our readers will long since have comprehended the value of his assertions—it is a fact that the Appetite for strong-drink 'grows with what *it* feeds upon'; and it is *not* a fact that a similar issue follows the use of food. In the case of Mutton, *that* checks us; in the case of Wine, we have to check *it!*—"needing sagacity and self-command," says the reviewer, to prevent "the tricksy-spirit" from making a Fool of us. We acknowlege nothing as Food that is *deceitful* and *dangerous*—and exactly because "Wine is a *mocker*," it is *not* Meat. The reviewer arbitrarily selects one particular in which, in the Human Body, something happens *alike* to Food and to Alcohol—viz. *oxidation—Ergo*, says he, Alcohol *is* Food!

† "Dr Carpenter," says the reviewer, "denies the claim of alcohol to be considered as food, *because* it cannot supply the materials of growth" (p. 106). We have carefully conned the passage cited in proof, but we cannot meet with the denial at all that alcohol is food; much less the illogical formula dishonestly imputed to him—that it is not Respiratory food *because* it is not Plastic food! Dr Carpenter has no contradiction of statenent to reconcile—but only the reviewer's fabrication to expose.

But why should he not also place *Creatine*, or *creatinine*, in the category of Food! The reviewer here uses nutrition in the teetotal sense!

"Creatinine? *that* is a product of disintegration, and is *as unfit for nutrition* as other products of effete tissues are."—p. 113.

Are effete tissues, then, after all, *not* burnt in the body? Alas! he has only half-learnt his lesson! There can be no doubt that *Creatine* itself becomes in part *oxidized* in the body, as well as Alcohol—*Ergo*, Creatine is Food!

To return from the exposure of the reviewer's grandiose nonsense—we define *Food* as Organic Matter *adapted* (with the aid of proper media) to form blood and circulate *continually* in the body, either solely to warm, or primarily to repair and partly to warm it. Under the category of Food, we include only three typical things—all found in Milk and in Egg—namely,— Typical food.

Albumen—Oil—Sugar.

Of *all*, we affirm, they are innocent and are œconomical. Of the *first*, we say, Alcohol can not answer *its* purpose, or supply its place, as plastic matter or nutrition. "*Beer, wine, spirits*," justly observes Liebig, "furnish no element CAPABLE of entering into *the composition of blood*, muscular fibre, or *any part* which is the seat of the vital principle." * Of the *second*, we say, the Human body is not a spirit-lamp, but constructed for burning-oil, which will yield far more heat than alcohol, and more gradually, yet fast enough even within the Arctic circle for any necessity of mere temperature. Of the *third*, we say, what is true of its congener Starch, *it is converted in the organism into the oil of the blood, or into bile* (which alcohol is not), so that the just dietetic comparison, as we pointed out ten years ago, is always between *Alcohol and Oil*. Now Liebig has distinctly proved that 266 parts of Brandy (at the cost of 10s.), after first 'disturbing' the body, yields only as much heat as 100 parts of Oil, 240 parts of Starch, and 249 of Sugar (costing 1s.)—or, to change the form of statement, taking equal weights of pure *Alcohol* and of *Fat*, where the last would keep up the temperature of the body at the normal height for 87 hours, the former would only do it for 65. Hence the fallacy, even regarded solely from a chemical standing-point, of using a dear and 'disturbing' Fuel instead of the cheap and innocent Fat or Oil.

3. And the reviewer *knew* this: while committing the *suppressio veri*, he affects the *ignoratio elenchus*. He says the *Temperance* ques-

* *Letters on Chemistry*. 1844. p. 57. It is true the reviewer says that he believes alcohol *may* be transmuted into *Nerve*-FAT and FORCE! There is no accounting for the very positive credulity of a 'Positive Philosopher'! He reminds us of the late William Cobbett, M.P., who however was theoretically a teetotaler. Cobbett says, in his *Rural Rides*, that "There can be *no doubt* "that Butchers and their Wives *fatten* upon the *smell* of meat" (p. 2). "Organic chemistry," says the reviewer, "*may one day show that Alcohol* "*is actually converted into Nerve-tissue*"! (p. 107) When *that* day comes, we may consider the 'showing,' and must per force believe it, if it *be* 'shown,' in the current sense of that word, and not simply Westminster-*reviewed!*—but in *this* day, most assuredly, we will take the liberty of leaving it in that domain of darkness where 'Positive Philosophy' has no footing. Credulity.

tion is, "What is the value of Brandy *in itself*"! Historic fact will best answer him. In our book so often quoted, of the date 1846, we put our own question thus:—

A real question put.

"It has been alleged that this agent (alcohol), at however great a loss of substance and labor (in its production), is still USEFUL as an element of respiration. But the very reverse is the fact. Experience has shown that the power of the system to resist the low temperature of the Arctic latitudes is positively impaired and perceptibly lessened bp the use of alcoholic liquors. Nature has indicated—*by expressly providing*—the best possible-fuel for the animal-furnace in high Northern latitudes—viz. *fat*, which, weight for weight, and *without inflicting any previous mischief*, will generate one-third more animal-heat than alcohol, and at one-third the cost. ALCOHOL ROBS THE BLOOD OF ITS OXYGEN, in order to effect its own decomposition—exhausts the nervous power of the organism— and *keeps within the system* [unburnt up] an amount of *Fuel-food* and *Waste-matter*, which, if permitted to unite with the fresh-air now abstracted by the Alcohol, would give out to the vital-current A MUCH GREATER AMOUNT of animal-heat."—p. 39.

The over-charitable reader may ask, How do *you* know that the reviewer *knew* this? Well, supposing he did'nt, he ought to have known it, before so dogmatically denying it: but let the reader mark where the reviewer's shoe pinches—(tho for that matter his argument more resembles slippers and slip-shod, than tight-shoes!) It is in the comparison between Fat and Alcohol, and their relative value. He himself says—"All chemists are agreed that alcohol *spares* the consumption of Fat" (p. 111). *Spares*! Really because, as we taught, it *robs* the blood of the *oxygen* provided (if Positive Philosophy believes in Providence?) expressly to consume the fat. We can *not* use both at once—and therefore must lose the difference in heat-value, and gain a poisoning ('disturbance') by way of set-off! To divert the eyes of *his* 'circle' and that portion of the public which desires to pin its faith on the word of an amateur and anonymous physiologist, what does he? In quoting from Liebig a short sentence of two lines, he suppresses that part which would open his readers' eyes, and cause them to think that there was, after all, something behind. He omits the words put in capitals in the following lines:—

A suppressed passage.

"Alcohol stands high as a respiratory material; its use enables us "to dispense with the starch and sugar in our food; AND IS IRRECON-"CILABLE WITH THAT OF FAT." *

What more is wanted to show that Alcohol is Food?—coolly asks the reviewer. Much more, please your worship!—but especially is it needful to show, 1st, that *that* which is irreconcilable with the use of Natural Food, and therefore frustrates the *use* of it, † is *better* than Food, or *is* Food; and 2nd, that what is said by Liebig in the same paragraph is *not* true—viz. that Alcohol enables a man "to make up "deficient power *at the expense of his body*—to consume to-day that "quantity which OUGHT NATURALLY to have been employed a day "later—to *draw a Bill on his health*—to consume his *capital* instead

* *Chemical Letters*. p. 454.

† To meet a foreseen quibble—mark! the *use* of it; not the power of *using* it.

"of his *interest*," etc.,—for how can that be natural Food which acts in this *un*natural fashion?

"Pour *oil* on a fire, and the oil is burned instead of the coal. We do not place coal on a fire for the sole and express purpose of burning it; we place it there for *the sake of the heat evolved* in its combustion" (oxidation). The case is similar in the organism."—p. 109.

Natural Oil *versus* artificial Alcohol.

It should be—but is not. The consequence of using alcohol, as we have shown, is the evolution of *less heat*, not more. Providence places Oil in the grate of the human body to *get* oxidized—but the Positive Philosopher, in his conceit of improvement, puts into the system that which *prevents!*

"It is *certain* that we do not desire coal to be *consumed for consumption's sake*, but for heat's sake ... If any one can show us how to save our coal and get the heat, *we shall gratefully adopt his plan*. Oil saves the coal; but oil being more expensive than coal, no one thinks of *that* plan."—p. 109.

Why, this is the reviewer ridiculing himself! 'Tommy' says he wants *heat*, and *cheap* heat: whereupon some Quack steps in with half a science, and says—"Here is *the best fuel*—brandy—for getting heat and saving coal (or oil)"—and he straightway gratefully drinks to his health! The Teetotalers come forward and say—"Why should you *not* use the coal? It is cheapest, most innocent, and gives out *most heat*. We can show you something better than saving your *coal* (or oil), which God made for use. Save your brandy, friend, and you will be all the *warmer* and all the richer." Instead of gratefully adopting our plan, however, 'Tommy' abuses us unmercifully, and bawls out—*That's not the question*!

3. The paragraph cited contains other examples of loose physiology and lame figure.

Confusion of fuel with tissue food.

"There is a real analogy between pouring oil on a fire, and *alcohol on tissue*. The oil is burned *instead* of the coal; the alcohol is burned *instead of the tissue*."—p. 109.

His metaphor is miserably expressed. The analogy is in the *effect*, not in the 'pouring.' For, first, *tissue* is not the analogue of coal, nor of the furnace properly, but of the entire engine. The Engine is not made to burn—nor is the Body—but to work—and the Fuel (or coal) is made to burn *in* it. It *will* be oxidized, no doubt, but its prime purpose is *not* that. It is however quite true, that alcohol, after creating general disturbance, arrests *natural* change of the tissues, by diminishing the *vitality* of the blood and lowering the vital heat. What then? If we do not live for consumption's sake, still less do we live for Death-in-Life's sake: *Dum vivimus vivamus*. Nature bestows upon us the vivifying oxygen—why should we combat her plans and rob the blood of its *vital air*? If this is what the reviewer wants, why not inaugurate a crusade against Arnot's ventilators, and pen a 'dithyrambic' diatribe in defence of bad air and bile?

"If there be an *absolute* necessity [he can find a difference of 'necessities' when it suits him!] that all the coal [oil] should be consumed, and the amount of oxygen limited [as it is], *then every drop of oil is an obstruction and an offence*."—p. 109.

Exactly so with the alcohol foolishly substituted for the oil of the blood. The *oil* is left, after nature has been at the pains of making it, to become an *obstruction* in the blood, giving her the further trouble *and cost* of putting it out of the circulation; and, by further consequence, retaining effete matter and carbonic-acid in the vital-current, thus interfering with the quality of the blood itself, both as *exciter* of action, and as *material* for repair of tissue. Hence, again, it is an agent that lowers life—not food which raises it.

Figurative and false physiology.

4. "Alcohol, by its greater affinity for oxygen, *protects the tissues*, and sacrifices itself to the voracious element. * It is burnt; *the tissue remains just where it was before*, like the coal when the oil is consumed, ready to be burned by the next rush of oxygen carried thither. *Thus* do we prove a clear gain."—p. 109.

Of what? Let the reviewer make up his mind, and we will show that, like the Irishman, he gains only a *loss*. Is the gain of Heat? Then he has lost vastly by preventing the oil and bile from being consumed, as we have demonstrated. Is it of Force, the ultimate end of both kinds of food and of tissue? Then he has lost *totally* the use of the tissue made to be alive (or awake) but kept *dead* (or asleep): *if there be such a state.* There is nothing gained by postponing the

* "I have often lamented that Liebig, in his anxiety to demonstrate the important part played by oxygen in the complex problem of Life, should have been betrayed into unphilosophical, because exaggerated and one-sided expressions; but that an expounder of the 'Positive Philosophy' should have adopted it, does indeed excite my astonishment. What says the great master, M. Comte? 'The vitality of the organism is dependent upon its position *in a 'suitable medium*, and it may be defined as the *reciprocal action* of these two 'elements. There is *no antagonism* between the organism and its medium.' The Durham Chemist, and the London *litterateur*, use the hyperbolical language I object to, apparently to induce their confiding readers to believe that Alcohol is *necessary, as a meat-offering*, to the 'voracious and destroying oxygen' *in order to prolong or save their lives*: whereas if the saving of life is the question at issue (and it is that and that alone they mean), then, if exclusive language is admissible at all, we ought rather to speak of the destructive and deadly effects of the *want of oxygen*. To such miserable shifts are men driven in order to please the votaries of Bacchus and the rich and *liberal* Lords of Liquordom! If there is anything M. Comte denounces more than another, it is the erecting of the *properties* of matter into Entities—*concreting* vital, electric, and magnetic Forces. But the *Westminster*, not content with asserting that Alcohol *is food*, enunciates the transcendant discovery that "*Alcohol* is *Force*"! How delighted must be Professor Grove, who conjectured that all the physical forces are resolvable into one—and how confounded poor Comte, who could'nt conceive of a force being a *thing*—when they learn the grand fact, and can moreover, *bottle it, and drink it* to the health of the discoverer!"—J. M. MACCULLOCH, M.D.

Oxygen not a poison.

"Heat can be produced in the body without any change of matter in living tissue; yet *the change of matter cannot* BE SUPPOSED TO TAKE PLACE *without the coöperation of oxygen.*"—(LIEBIG: *Animal Chemistry*. p. 238.)

Oxygen is vital-air.

Oxygen, then, is VITAL AIR, *not* a poison like strychnine, as the reviewer affirms. *Its excess*, indeed, may be bad,—but that does not make *it* bad. No one doubts the evil of too much of a good thing—but the sophist only would thence infer the good of the *bad* thing.

use of a thing. It is the miser's miserable fallacy—a loss of Interest and of Life.—Of course, we reason only with the reviewer's words—real ideas behind there are none. How was the tissue *before?* Alive? If so, it had a *medium* of life: and *therefore* had oxygen to excite to vitality, nutrition, and force. Yet, says the reviewer, the oxygen is removed—and the tissue *remains* as before! Dead or dormant? Then it was waiting, like the seed of early spring, to be awakened to life by its vivifying friend, Oxygen—its *redeemer* from dormancy and virtual death: and alcohol prevents—leaves it as before! Think of a 'positive philosopher' discovering the blessing of cold to a Chrysalis:—it '*protects*' the creature from *living* as a Butterfly—stimulus is life, and life is—*death*! He reminds his readers that we do not consume coke for consumption's sake. That we do not want tissue for tissue's sake, however, but for *use*, is a cognate truth of which he does *not* remind them! He ignores another fact in physiology. If there be not *due* oxygenic action in the blood and tissues, there will be undue action of another sort. If *fresh-air* does not exist in natural amount (as experiments evince that it does *not* after the use of alcohol), then *foul-air* and poisonous-effete matter will exist in *un*natural measure. If there be not the full ratio of one, there will be an *excess* of the other, as compared with "the principle of rectification which the organism possesses in its various methods of *elimination*." The organic apparatus of excretion is constructed permanently to expel a certain natural proportion of waste matter in a given period,—and if *that* is often interfered with, as by want of exercise, or too much carbonaceous food, "the *poisonous effect* ensues." Now, the use of alcohol gives a new material itself poisonous,—adds to the *work* of the system, and lessens its working-power—"so that," notwithstanding the reviewer's assertion, "*the balance* is [NOT] *preserved*."

Oxygen a *necessity* of Life.

5. "*Thus* intemperate drinkers can *subsist* on a modicum of food: they burn alcohol instead of burning their own bodies. Alcohol may be a more expensive fuel than meat, as oil is than coal; but we are not arguing a question of expense."—p. 109.

Nor we primarily, but yet incidentally; for we cannot consent to repudiate the *useful*. What, however, does this passage amount to? Topers 'subsist'—† but certainly they do not *live*, in the proper sense of that word: and hence it is the old fallacy over again—"We live to *save Food*, not consume food to *Live*!" The body was *made* to change its tissues, and is not a healthy, potent body, if it does not change them.

"The point *we* have to settle is, Does alcohol *save* tissue, and *supply the place* of Food?"—p. 110.

† Dr Williams thus speaks of the treatment to which these men are eventually subjected. "This must comprise, besides ammonia and other *stimulants* "to the circulation and respiration, purgatives and diuretics *to free the blood* "from the *excrementitious* matter that has *accumulated* in it; and fluid nour-"ishment to repair its waste."—(*Principles of Medicine*. p. 29.) A strange sort of Food with such sequences!—and as queer a kind of 'subsistence'! Yet the reviewer calls alcohol "the *equivalent* of blood"!

Alcohol *not* a saving's bank.

It 'spoils' tissue—*deadens* tissue—but it does not save it. If two grates were offered us, one of which would, at *one third the cost* of coal, give out *the same measure of heat*—we should correctly say of that grate—'It *saves* fuel.' But if it only *smothered* the fire, and consumed less coal because it produced *less heat*, we could not correctly apply the word 'saving' to it; it would be a case not of saving, but of loss. When Moleschott * calls the Beer-barrel a *Saving's Bank*, he is fooled by a figure. No wise man will put *into* a Saving's Bank what is needed for the sustentation and normal development of the *family* at home: it is only superfluous wealth that should go there. To rob the family for the Banker's benefit, is to diminish the sum of its life—and so with the tissues *robbed of oxygen*. We lose their health, their use, their enjoyment—but gain, for ourselves and our children, a clear prospect of scrofula in the distance.

The phrase—'supply the *place* of food'—is equally loose and illogical. Alcohol may be said to do *one* thing badly which food does well,—but to supply the place of food is a very different assertion. The 'place' of food covers the *properties* of food—means, *all* that food does, and therefore the *manner* of doing it. But we have shown that alcohol neither possesses the *positive* virtue of being useful (for it is only burnt at the cost of something better), nor the *negative* and not less important virtue of being innocent. Hence it does *not* 'supply the place of food'—it only prevents the proper *use* of food. It is, therefore, *not* "positive nutriment"—it does *not* "replace nutriment."

'Force' fallacy.

6. "We want heat *and* force. Alcohol not only saves [PREVENTS] *the consumption of tissue*, but has also a positive value as *nutriment of force!* This is the source of its *preservation* of tissue. Alcohol *evolves force* in its combustion, which is a SUBSTITUTE FOR THE FORCE which would otherwise be evolved at the expense of *tissue*."—p. 111.

Here we reach the very apex of the huge pyramid of assumption and sophism reared by the reviewer. We do not call it 'blunder'—for we do not think he is so ignorant of philosophy as to be wholly deceived by it himself.

1st. We have the assumption that Plastic and Respiratory elements of Food are capable of being *interchanged* as sources of Vital Force!

2nd. This involves a confusion of *Heat*-force with *Nerve*-force!!

3rd. The application of the assumption further implies that alcohol can generate *both* forces, and both *at once*!!!

To begin with the last fallacy. What are the facts? Alcohol generates heat, but leaves the temperature of the body *lower*, by interfering with the natural fuel and action of the furnace. But the heat generated saves the consumption of *oil* (not vital tissue). The tissue is *not*, therefore, affected directly. It is left *as before*—unoxidized Where, then, is there room for this *vicarious* force? The heat-force of the alcohol cannot be a *substitute* for both the heat-force of the oil, which it does not *equal*—and for the tissue-force which it prevents existing by retarding oxidation. The reviewer is juggling again; virtually imposing the word *substitution* for the idea of *prevention*!

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* See further our reply to Dr Chambers. Vol. i. p. cxcix.

As to the second fallacy—we hardly need inform *our* readers, that Physiological Science recognizes only *one* sort of Vital Power in the animal body—namely, the nerve vesicles of the Brain and Spinal marrow—the activity of which is invariably attended by a *waste* of their substance exactly proportioned to the intensity of the force developed. Chemical Science, as we have seen, recognizes but *one* class of substances thrö which that waste can be supplied, and in that class no real Chemist has ever dreamed of placing Alcohol. Before the reviewer attempted a 'demonstration' of this special theorem, therefore, he should have set himself to the task of demolishing *all* the recognized principles of science—for he admits that the authorities do *not* recognize his hypothesis. * He must show either that there is some *other* source of nervous-force than the Nervous System, *or* that some other force is *transmuted* (or 'translated'!) into the Vital, and which will manifest itself in the manner peculiar to it. The question may *then* be fairly debated—but at present it needs only to be ridiculed.

He has, indeed, a theory of *transmuted* forces, by which, if words could do it, he would verify the old hypothesis of the Apocrypha—"Wine is *as good as life* to a man." HEAT-force is present (*tho* LESS *of it*) when Alcohol is drank. Presto! vanish! It re-appears as TISSUE-force. Presto! Again it re-appears as VITAL-force!—ERGO, *Alcohol is Life!* Q. E. D. †

Fallacy of the interchange of Forces.

The reviewer employs the imperfect analogy of the Furnace for the purpose of disguising his fallacies, and making Alcohol perform double-duty. In the furnace of the Engine, Oil can be substituted for Coal because the *calorific* power required is the natural result of *both*, and because the apparatus which suffices in the *one* case to resolve Heat into Mechanical Force, is all that is necessary in the other. But in the Human System the analogy *stops* at the substitution of one fuel for another—there is no ground of analogy for the reviewer's *extended* inference of the interchange of Forces. He argues as if it were possible to *create* power! He wants to estimate the heat produced by the oxidation of alcohol *both* as Temperature and as *Vital-force*!—and by a rapid interlocution to make his readers overlook the fact that alco-

* He says that "Liebig is directly *opposed* to our doctrines." We answer, *Liebig's science* is a demonstration of their truth. Even on the very point before us, Liebig is "directly opposed" to the reviewer who is opposed to us. One thing, however, is certain—if Liebig's *opinion* is not always with us, he never falsifies facts to oppose us: he may err, but he does not stoop to *finesse*.

"The development of heat in the body, after the use of wine," is "*without the manifestation of a corresponding amount of mechanical force.*

Liebig on alcohol.

"A MODERATE *quantity* of wine, in women and children unaccustomed to its use, *produces a diminution of the force necessary for voluntary motions.* 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 by the process of oxidation of the Alcohol."—(*Animal Chemistry.* 1842. p. 240.)

† Id est—'Queer Example of Dialectic.'—*Printer's Devil.* We have read somewhere of Mr G. H. Lewes being engaged in pursuit of a new theory of Life—*is this an anticipation of it?*

hol can not manifest itself as one, without ceasing to be the other. In the construction of a Steam Engine, the great end and aim is to render a maximum of the Heat produced in the furnace, *latent*—whereby it converts Water into elastic Vapor, and ceases to be perceptible as temperature—*and the sum of the Mechanical Force produced is the exact measure of that success.* On the *supposition*, then, that Alcohol does really generate force, the same principle must prevail; and in the same measure that alcohol becomes a *latent* force, will the temperature of the body decline. However, the reviewer need not trouble himself about *that* matter, until he has first shown that his 'supposition' is an *Actual Fact.* When we have got the fact made certain—we can then enter on the theory which will account for it.

Translation of forces.

This hypothesis of Transmutation, then, may for the present be put into the same limbo with that of Metempsychosis: they are both extremely unworthy of 'positive philosophy.' We positively *know* of no instrumentality which can convert the heat generated in the body into Vital-force, as the Water in the Engine-boiler is resolved into Elastic Force. We *know only* that in the human body Vital-force is dependent on the structure of the Nerve-vesicles, and *that* upon plastic food capable of *assimilating* with its special substance—which Alcohol is not.

7. Dr Carpenter having said that "the use of alcoholic liquors affords no real increase to the strength, but that they merely stimulate the Nervous System to a greater intensity of action, which *must occasion a more rapid metamorphosis of* ITS *substance*, and, consequently, an earlier as well as a more prolonged failure of its power,"—the reviewer answers as follows:—

> "The error lies in the assertion that a greater metamorphosis of the tissue takes place, and that it is *this* which furnishes the increase of force. On the contrary, (1) Alcohol is nutriment as well as stimulus;—(2) it saves an equivalent amount of tissue, as oil saves coal,—and (3) although the *result* may be a greater consumption of tissue *in a given time*, as the oil blazing up will increase the temperature of the coals and thus hasten combustion,—* yet it is demonstrable [how?] that real increase of strength *is* given."—p. 112.

The cool effrontery with which this web of sophistry is woven, clearly in the calculation that his entranced 'circle' will not care to unravel it, is amusing. Here the reviewer tacitly repeats the refuted assumption that there is *another* source of Nervous Force besides the Nervous-system. He changes the phrase '*its*,' as applied to *nervous*-tissue, into '*the* tissue'—and then proceeds to 'tissue' in *general*! He talks about oil blazing up and helping coal to blaze up. Does alcohol blaze up in the body *better* than coal? If so—why do we expel less carbonic-acid and vapor,—why does the thermometer declare we are colder,—and why, even in an arctic winter, are we better able to resist the cold? There *is* no increase of warmth to *warm* the natural fuel; but there is (in the alcohol pervading the tissues) an *antiseptic*

* Another contradiction this! Alcohol saves tissue by *opposing* change (displacing water and consuming the exciter of change, oxygen)—yet Alcohol promotes the change called *oxidation!* In one breath he says the value of alcohol consists in keeping tissue in *statu quo*; in the next, that it *hastens its combustion!*

which opposes that eremacausis of the tissues essential to their combustion—a fact which the reviewer conveniently ignores, tho stated by Liebig. Men, again, as proved by the great prover, Experience, and admitted by Liebig, have *not* more dynamic or vital-force *at command* by the use of a dram, but less. Alcohol may occasion a man to *feel* as strong as Samson, when in reality he is weak; just as 'Wine' may generate the fancy in a critic that he is profoundly scientific when he is purely silly. How amusing it would be if the reviewer were compelled to explain some of his own figures and phrases—to see them grow small by degrees, and finally taper off into 'positive' no-meaning. Where, for example, could he find in the body something to answer this phrase—"Blaze increases the temperature of the coals, and *hastens* combustion." What *are* the coals in the body? Oil *or* tissue? What *does* increase the temperature? (Not *alcohol*, it is certain.) Is fever-heat desirable? Why *should we* hasten combustion beyond the natural degree? He also uses 'nutriment' ambiguously, and confuses the question of temperature with that of tissue. At p. 106 he correctly states that "the organism needs *five times* as much "Respiratory food as Plastic" nutriment. Yet he is constantly speaking of the evolution of heat as the prime end of the metamorphosis of *living matter*—of tissue as the chief material and source of animal heat. He talks of the tissue as if it were coal—and of coal as if it were tissue! In fact, however, 8-10ths of the carbonaceous matter in the blood was never intended to be, and *has never been, tissue at all.* * Why has the reviewer practised this strange reticence on a scientific subject?

No-meaning of the critic.

But the conspicuous effrontery of the passage truly 'lies' in *denying that a greater metamorphosis of Nervous-tissue takes place after the use of a moderate dose of alcohol!* This is equivalent to one of two assertions—either that Alcohol does not alter or primarily increase the activity of the Nervous-system,—OR, that Organic-action or life can take place *without waste*!

Now what is ORGANIC-LIFE, but *the metamorphic addition and reduction of Tissue?* We can not even conceive of Life without excluding stagnation, and including the perpetual action of the organism. Life is a condition of change—of progressive movement, within certain limits. We can not conceive of a mortal organism working without waste, whether it be in perception, volition, or consciousness. Whatever labors, loses—whatever works, must wear. Life and Stimulus, the reviewer allows, are correlative ideas: but stimulus essentially involves *alteration*—what is called action and reaction. How does Liebig define a stimulus (*reiz*)? "That which is a cause of *a change of form and composition in the organism.*" †

Life and waste correlative.

* This is allowing 2-10ths of the Respiratory food (which constitutes 8-10ths of *all* our Food) to go, in the shape of oil, to aid the formation of albumen into tissue.

† He very properly objects to such proceedings as the reviewer's; and speaks in reprehension of "*lumping together* all imaginable causes under the word *stimulation*"—as barren and unphilosophical. We should consider, he says, the *distinction* of causes as the indispensable aid of practical knowlege.

An authority cited by the Reviewer says thus of wine :—

"Pleasant emotions and brilliant saws and dreams—the wheel of emotion—the preparator of inventive idea—pleasurable excitement," etc.

First state of alcoholic action.

Dr PEREIRA says—"Taken in *moderate quantities*, Wine operates as a stimulant to the nervous and vascular systems. It quickens the action of the heart and arteries—communicates a *feeling* of increased muscular force, *excites the mental powers*." Of Spirits, he says :—"The first or mildest degree (of action). *Excitement* of the vascular and Nervous-Systems—face flushed—intellectual functions powerfully excited—disposed to joy and pleasure"—etc.

The REVIEWER calls it "*Fiery Alcohol*," and also *Milk!* and says—

"Were it less alluring, it would not lure to excess; were it *less potent*, it would not leap into such *flames of fiery exaltation*"—p. 114.

"The real injury of Alcohol lies in the *disturbance* of the *organic processes* consequent on a *too greatly accelerated activity of* SOME *of them*."—p. 110.

In fine, the activity of both Mind and Body is increased; and the reviewer virtually asserts that we can increase the activity of the corporeal organism *without any corresponding waste of its tissues!* The fact remains, however, in spite of all these absurd and bold assertions, that no such phænomena can occur *without* an exactly corresponding metamorphosis of tissue. If the excitement is natural, the waste is moderate—if the action be intense, the waste is excessive.

Note, however, that we speak only of the stage of activity, the excitement of the vascular and nervous organism—of that initial Drunkenness which characterizes the Westminster's *Model Moderationist*—the 'Coming Man' whose advent has been so long looked for, and who, henceforth, to all the worshipers of 'Fiery Alcohol,' shall be an 'Imperial Standard,' Westminster crowned in foaming measures! * *But*—when its results are seen in another stage—when its operations have been carried *beyond* excitement, and pass into paralysis, or narcotism—*then* the alcohol is diminishing the change of tissue, because it is arresting or overwhelming the vital-activity. In other words, the lowered life-manifestation is the *necessary sequence* of the diminished change of tissue produced by the presence of a *large* dose of the poison.

Second stage.

Now the reviewer does not contend for the larger paralyzing—but for the lesser exciting, dose of Alcohol—as we have just seen—and, therefore, under his prescription, it necessarily holds true that a greater metamorphosis of Nervous-tissue *does* take place. If he denies this, then he is impaled upon the other horn of the dilemma—that *Nerves* can *act without change*, and consequently be immortal!

When learned Savans boldly say—
'Nervous-matter acts without decay'—
And *prove* it—then no matter *what* they say.

8. Having shown that the *limited use* of alcoholics *is* attended with unnatural waste of that crowning organism of Man—the Nervous-

* "The reader we address," says the *Westminster*, "is a type of the 'moderate' man: he drinks beer, or wine, at dinner—may *occasionally* take 'more than is good for him'—which excess he sleeps off that night,—*or pays for by a headache next morning*" (p. 97).

A model drinker.

system—we may now demur to the assumption that alcohol does *preserve vital-tissue*, or what is the same thing, does preserve tissue *vital*. That alcohol will *pickle* tissue every body knows: and that is one of our grounds of objecting to it—not merely that it puts so many persons into circumstantial pickle, but that it actually tends to *pickle their persons*. Nay, the reviewer admits it in the following passage:—

"The notorious fact of *hard-drinkers* [soakers] scarcely taking any 'food,' yet, in spite of *this absence of* '*food*,' they manage to *live on through many years*,—NOT VERY VIGOROUSLY, it may be,—upon a quantity *so small* that life could not be sustained a month on such a quantity, did they not call in the aid of a Poison."—p. 106. Pickled topers.

And why *not* live 'very vigorously,' if alcohol is not only food, but *saving* and superior Food? But, putting aside the 'notorious' exaggeration of the passage, we see nothing here that can "destroy Dr Carpenter's argument." The reviewer cites Liebig as to the fact that "Alcohol enables us to *dispense* with starch and sugar in our food." * In the case of such sots, it might. But what further says Liebig:—

"If the power of the elements of alcohol to combine with oxygen, were not greater than that of the *compounds formed by the change of matter* [such as creatine, inosite or muscle-sugar, lactic-acid, etc.], or that of the *substance of the living-tissues*, they [the elements of alcohol] could not combine with oxygen in the body. [A truism by the way.] It is, consequently, obvious, that *by the* [CONTINUED] *use of alcohol a limit must rapidly be put to the change of matter* IN CERTAIN PARTS OF THE BODY. The arterial blood *becomes venous* [in hard-drinkers], *without the substance of the muscles having taken any share in the transformation*." † Liebig.

Here several things are to be noted—the compounds formed by *decay*—the *living-tissues*—the *continued* ingestion of alcohol, till it uses up *sufficient oxygen*, not only to leave the oil of the blood without an oxidizer, but also *certain parts* of the body, as the muscles. But the reviewer lumps all these things together, selecting or discarding which ever he pleases when discoursing of a quite different stage of alcohol-poisoning (simple excitement from limited use)—dignifying the process as Logic and Science! It will be evident, then, why the Sot can, with at least comparatively small rations, linger out a kind of vegetative and pickled existence, the smaller waste of his useless, almost hybernating, and certainly narcotized life, being imperfectly supplied by the half-alive half-dead matter of the blood (which at last becomes *too thin and watery*, tho *pale* and *fatty*, to carry on even *such* a life!) But the *brain*—the organ of the Intellect, the metropolis of the Nervous-system—what of the Brain? Here, by the *Alcoholic*

* Did the writer ever stop to enquire *how much* Alcohol we must consume to enable us to *dispense* with starch and sugar—to do without them, tho badly? We will tell him; not less than a *bottle and a half of brandy per day!* This, we presume, is a rate of consumption beyond the typical moderate-man.

† *Animal Chemistry* All this theory and its bearings we explained in 1843, in discussion with Mr Surgeon Jeaffreson. The Westminster is retailing his notions as something novel, twelve years after being exploded!

The Sot of Science.

brain-feeding hypothesis, we should expect that while the body of the sot grew rotund and dropsical, and his calves dwindled away, leaving mere spindle-shanks behind—his Brain would become of 'Imperial Measure,' and his *Soul* too large for the corporeal clothing to cover it decently! Instead of that we have—*a drivelling sot*! The real facts do not fit the reviewer's fancy.

Last year, while reviewing the fallacies of Dr T. K. Chambers, (see WORKS, i. p. ccii), we took the opportunity of objecting to the assumption that alcoholics, in *moderate* doses, *did* diminish the waste of the body. * (We have admitted that they do so when their *narcotic* effects supervene.) Referring to Dr Böcker's experiments, which we had published the preceding year, we observed as follows :—

"The only certain fact they establish is, that alcohol *retains* partial-
"ly effete, and wholly waste matter, within the body, first, by bringing
"on the premature and abnormal metamorphosis of some tissues, and
"second, by lowering the tone and action of the organs of *excretion*." †

What, then, does the ingestion and combustion of alcohol really produce? In so-called 'moderate' quantities (by its greater chemical affinity for oxygen than that possessed by *any* of the ordinary constituents of the blood) it unites with part of the oxygen naturally destined to burn-off the oily elements which never were tissue, as well as the effete elements of the body, disappearing from it as carbonic-acid and vapor; whilst physiologically (by its stimulating relation) it increases the activity of the vascular and nervous systems, and consequently *hastens* the metamorphosis of the tissue so excited. Hitherto, as much oxygen is circulating as suffices for *that change* which is the

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* "If alcohol *did* this, it would be an argument with me gainst its use. The idea of 'this *prevention* of the change of tissue being beneficial,' is a monstrous conception.

"In a long professional experience, at home and abroad, I have met with no such cases as those said to be so 'notorious' by the *Westminster*. The simple truth is, that when Drunkards cease to eat, or eat but very small quantities of food, they die far sooner than sober-men reduced to such starvation allowance; just as, notwithstanding the 'flaming alcohol,' Drinkers sooner perish of *cold* than sober persons. In drunkards who cannot eat *while* drinking, or who eat infinitesimally, yet live for *years*, it is because *their drinking is not continuous*, and because, during the interval of sobriety, between the 'fits,' their system has become partially restored."—Dr MACCULLOCH.

Carpenter cited.

† Prof. Carpenter thus confirms our view in his criticism on Johnston's book. "We are not aware on what grounds [he] speaks of it as an ascertained fact, that ardent spirits *do* resemble Tea and Coffee in diminishing the waste of the body. He refers to a diminution of the pulmonary and urinary excretions, in support of his assertion; but he ought to be physiologist enough to know that such diminution (which we believe has *only* been proved in the case of carbonic acid exhaled from the lungs) may not be an evidence of the diminished waste of the tissues, but *may simply proceed from a diminished activity of the excretory functions*."—*Scottish Review*, Jan. 1855. p. 49.

The parenthetical sentence is an error. Alcohol has been proved to lessen *also the solid and fluid* constituents of the urine, and *not* to increase the perspiration, as Liebig once conjectured.

correlative of the activity. As the dose of alcohol is augmented, however, it appropriates more and more oxygen, until it has not only used up that destined for the oily-fuel, but (to employ our old phrase) ROBBED THE BLOOD of that which is necessary for the blood-discs and for the change or *vitality* of the tissue. The evidence and measure of its varying action, therefore, will be the relative amount of activity or of paralysis. The reviewer may talk as he pleases about 'use and abuse,' 'moderation' and 'excess,' but the fact is incontrovertible, that there is *no line of demarcation*, either visible or imaginable, between the activity and paralysis, or their causes, respectively—*the phenomena are unbrokenly progressive*, varying according to dose, age, sex, health, idiosyncrasy, season, and circumstance.

Various effects of alcohol *distinguished.*

9. "If in drinking a glass of *brandy* you save an ounce of *beef*—it is because the same amount of FORCE can be evolved from the brandy as from the beef. It has *replaced* so much beef.—If alcohol *prevents* a certain quantity of effete tissue from being burned, it also prevents a certain quantity of living tissue from *becoming* effete, *so that the balance is preserved;* and whilst so much tissue is saved, an equivalent of force has been generated by the Alcohol."

Brandy *vice* Beef!

This method of reasoning reminds us of the Irishman who asked to purchase at a shop, a noggin-of-whisky and a quartern loaf, tho he had coppers but for one. How much will both be? quoth Pat. 'A shilling,' responds the shopkeeper. And what is the price of the bread? queried the customer. 'Seven pence,' was the answer. Here, then, says Pat, take the loaf for the darlint drop of the cratur: *and never mind the change.* 'But,' retorts the common-sense Dealer, 'you hav'nt paid for the loaf.' Paid for the loaf! cries Pat, in great indignation—Paid for the loaf! Why, hav'nt I return'd it ye, and would ye have me pay for what I hav'nt got?—If this logic did not satisfy the baker, quite as little will the reasoning of the reviewer satisfy us.

He *supposes*—begs us to believe—nay, boldly asserts—that we have *got* the Brandy-force, and paid for it: and then he proceeds to *exchange* it (in words) for an equivalent of Bread and Beef. After going thrö the absurd fallacy of supposing that tissues exist for heat (instead of heat for tissue)—the living-house for the coals instead of the coals for the house—*and that beef is a combustible*! he proceeds to identify *heat*-force with *tissue*-force! To disguise the absurdity, indeed, he tells us that 'Food *is* Force'—and therefore heat-force is 'force,' and tissue-'force' is force—and one is the other, and both are the same! True, he endeavors to wriggle out of the absurdity again by some talk of the *equivalence* of forces—and by a "looking at the *end* and *aim* of Food"—which end and aim (not food) *is* force! Now 'food' is only one of the Factors concerned in the production of the various *Forces* that find play in the living body, *the organism and its media* being conjointly necessary. Zinc, copper, acids, water, in contact, evolve the force called Electricity—is it either logical or scientific to assert, that, "looking at the end and aim" of Zinc, thus employed, the only *simple* definition of its nature is that which pronounces it to be—Electric Force? Thus even the specific meaning of 'Force,' as distinguished from 'Things,' must be tampered with by this Philosophist. (As he affirms that "Alcohol is converted into *nervous*-force," whenever the

Food-and-force fallacy.

word 'force' alone is employed by him in this discussion, we assume *that* to be meant.)

Alcohol, we have already demonstrated, does *not* "evolve (*nervous*) force," when burned in the system *to the extent of preventing change of tissue*, since change of tissue is essential to the evolution of such force. Conversely, if brandy is burned *short* of preventing change, it greatly increases the waste of tissue in the organs excited by it, and therefore, instead of saving, actually *expends* Force. The reader will please recollect that this *Force* doctrine is simply hypothetical, at best. But accepting it for the nonce, how does it help the reviewer's position? The combustion of the Alcohol produces the force called Heat (tho less of it than oil)—*that*, Electro-chemical Force—*that*, *change* of Tissue, etc. In other words, when Alcohol *does* evolve Nervous Force, by the correlation of Forces contended for, it *increases* the metamorphosis of Tissue and *does not* diminish it.

Brandy can *not* replace beef.

We further deny, *in toto*, that Brandy—exclusively a *combustible*—CAN be made to replace the beef, which, if lean, is purely a *building material*. The brandy can not be assimilated to beef—nor can beef be burnt for fuel. (It is only as old, waste, decaying material, that it can in part be eventually consumed.) Now the reviewer writes as if he thought, or at least meant his readers to think, that Beef must evolve force *both* during its assimilation *into* tissue, and its disintegration *from* it! The Irishman made the Credit-loaf stand for Cash—but the reviewer would fill two mouths with one potato. Brandy during its oxidation, evolves first heat-force,—suppose eventually, by correlation, nerve-force,—yet without being converted into tissue at all. It is, therefore, just impossible that any conceivable amount of Fuel can replace, or save, a single grain of Plastic-food.

A blunder.

10. "We are under *no other* necessity of burning [changing] our tissue, than what is commanded by the need of *heat*."

The reviewer had shown just before that we "require *five times* as much Respiratory as Plastic food"—now he is talking of *tissue* as if it existed solely or primarily for the end of *Fuel*! Is Bone then for heat? Is Nerve only a species of oily-gammon? Are the tissues changing only to supply the need of heat! The reviewer, when it suits him, has no more regard to his own than to other people's distinctions. *

Awhile ago Food was Force, now force is *Heat*! It has been usual to think that heat was necessary *for* an end ulterior to itself—but it seems that there is *no other necessity!* We live *for* heat-force; not *by* it—and poor Vital-Force must retire! Perhaps this may not be what the reviewer meant—but it is what the *words* really signify.

The Westminster reviewer ekes out his 'Logic' with Foreign Nursery Tales from Liebig, and enlivens his 'Science' with manufactured jokes from 'Matthews at home.'

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* The rebuke of Lehmann is strictly applicable to the reviewer. "Animal heat has been brought too prominently forward in considering the metamorphosis of animal tissue, so that it may almost have appeared as if a great number of the animal processes were accomplished *solely for the purpose of generating heat in the living body*" (iii. 394).

11. When the Comedian, says the reviewer, "was shown the animalcules in a drop of [*ditch*] water, revealed by a microscope, [*sic!* a drop of water so revealed!] he shuddered at the dangers to which he had been exposed, and expressed his determination to drink *no more* [*ditch?*] water *without brandy*, for then, says he, if the monsters are not dead, they will be dead-drunk!"

The ditch-water joke.

Of course no one ever does drink water containing animalculae,—that is, *stagnant* water—save in direst need; and certainly the reviewer would'nt like to dilute his geneva with ditch-water. The joke was a very good joke on the boards of a Comic Theatre, but its repetition in a scientific controversy is unadulterated humbug.

12. Ample proof has already been furnished, to justify our assertion that the name of Philosophy has been used for the purposes of logical fraud, but take one or two additional samples:—

"Of two things one: either we must condemn *all* stimulus, and Alcohol because it is a stimulus; or we must prove that there is something *peculiar* in the alcoholic stimulus which demarcates it from all others."—p. 114.

The stimulus sophism.

Who can believe that a writer, penning his thoughts deliberately, re-perusing them, and again reading the printer's proof—is himself deceived by such pitiful sophistry? Our little son Arnold—a boy of eight years—actually laughed at a parallel paralogism put to him.

"Either we must condemn *all* stimulus, my boy—and so a *whipping*, "a *blister*, or a *scald*;—or we must prove that there is something "*peculiar* in the horse-whip, the blister, and the hot-water, which de-"marcates them from play and pastime, warm-clothes, and a wash!" The child answered *verbatim* as follows:—

"I think play is good, and a walk is good—but *not whipping and a scald*—I don't know what you CALL them."

13. The following bungling passage may not be designed as an argument for the *use* of alcohol, altho it will be accepted as such by general readers, as by the *Economist* already. It may only be intended to illustrate the denial of the first-sense of 'Natural': and if so, it is an old absurdity over again.

"No nation known to us has ever [emerged *from* a state of Nature, and] passed into the Inventive condition of even rudimentary Civilization without discovering [how to make], and having discovered [and made], without largely indulging in, *the stimulus* of Alcohol." *

Pope improved. 'Whatever *is*, is right'—and natural!

The morality of this passage is even looser and more detestable than its composition. Granting that whole tribes have sought thrö the worship of Alcohol (what Liebig, in 'the *good* passage' referred to by the reviewer, calls) "the *bliss* of intoxication"—is that state, or the agent and agencies which seduce to it, a whit the *less evil*? We repeat, then, our expression that the stimulus of Alcohol, and Alcohol itself, are *unnatural*—unnatural in a three-fold sense—and not the less so because Sophists may indite glowing dithyrambs in their praise. The argument for the naturalness of Alcohol, carried to its logical conclusion, would moralize every vice, and condemn every

* Even with all our cobbling-up of this affectedly precise sentence, it is'nt sense. Men did not invent *the stimulus* (or effect) of Alcohol: they only discovered or invented a method of getting Alcohol itself.

virtue. In fine, would prove that *unnatural* crime itself was quite *natural*, "because it existed amongst nearly all the nations known to us, and was even practised and eulogized by several ancient philosophers!"

Truly said Dean South, "It is an ancient artifice of Fraud, to prepossess the mind by representing bad things under a good name."

V. *The reviewer puts forth erroneous and hypothetical Physiology under the garb of Science.*

The great vice of the Westminster's article, in a scientific point of view, is the *substitution* of hypothesis for fact. In strictness, we are not bound to notice any writer's fancies, however eminent as a physiologist, still less (assuming his sincerity) so mere an *amateur* in science as the reviewer has proved himself to be. As we have before declared, however, our exposure of this pretender shall be exhaustive.

At page 116, the chemist Johnston is cited as a physiological authority, and the very first sentence which the reviewer reproduces as weighty philosophy, contains one of the most astounding of blunders. *

Cart put before the horse.

1. "It is *ascertained* of ardent spirits—first, that they directly *warm the body*, and by the changes they undergo in the blood, SUPPLY a portion of that *carbonic acid* and watery vapor which, *as a necessity of life*, are constantly being given off by the lungs."

Now the body does *not* need a 'supply of carbonic acid'; what it needs is a ventilating apparatus for *getting rid* of it. It is not the suffocating gas that is a 'necessary of life,' but the fresh-air, by means of which we purify the blood from the waste carbon, and Nature absolutely supplies the flues thrö which to get *quit* of it. What would be thought of an Old Lady who talked of buying coals to burn in a Patent-grate to SUPPLY that *soot* and *gas* which, *as a necessity of the household*, was constantly being *given off* by the Chimney? What *we* think of the reviewer—for here the want of perception is genuine, not make-believe. When alcohol is taken by persons *not absolutely starving*, it is found to *lessen* the amount of carbonic acid, as compared with what would be expelled after drinking water. Citer and cited are, therefore, either ignorant of the experiments of Prout, Fyfe, Vierordt, Böcker, Davy, and others, which demonstrate that the function of respiration is depressed by alcohol, in other words, that the flues of the vital grate are partially closed, so that the fire can not burn so briskly as it otherwise would; *or* they do not *understand* the meaning of what they read,—*or* they wilfully ignore that which they were bound to notice, and conceal that which they were bound to make known. In any case, they must be set down as unfit teachers of 'The Chemistry of Common Life.'

2. Side-by-side with this specimen of physiology we may place the reviewer's very *novel*, *original*, and '*entirely hypothetical*' *cure* for the pathological condition called 'Fatty Degeneration of the Tissues.' He suggests the following as a reason, in addition to Johnston's nonsense, why alcohol should be called 'the milk of old age.'

"The capillaries—the final centres of the nutritive process—undergo a pecu-

* See our *Corrections of Johnston* in a previous article. p. viii.

liar modification in old age—the membranous walls become the seats of deposits of fatty granules. Fact number *One.*— In some pathological cases these granules have been found *substituted* for the elements of the membrane itself, thus diminishing the calibre of the vessels. Fact number *Two.*—Such a change in structure must bring with it a corresponding change of function: and hence this may be one of the many causes of imperfect nutrition in old age. To these two facts, let a *Third* be brought—namely, that the granulations are easily detached from the walls *by the slightest movement of sudden pressure* on the capillaries. And we complete the series of facts by [advancing] the well known influence of Alcohol on the capillaries in determining their *sudden contraction* and *subsequent dilatation.*

The hypothetical cure for Fatty degeneration

"On this basis of fact we erect an hypothesis—namely, that the stimulus of Alcohol is beneficial in old age, because it *prevents*, or *removes*, the deposit of fatty granules in the vessels."—pp. 120-1.

And certainly, whatever we may think of the suitability of *alcohol* as milk either for 'sucking doves' or senility, this charming hypothesis is worthy of dotage itself. Let us examine its gums.

'Fact No. 2.' As the *degenerated* fatty granules are found replacing the natural healthy elements of the walls of the capillaries, they must *pro tanto*, have destroyed those walls, as well as 'diminished their calibre.' As a remedy for *a morbid lesion* 'slight movement' and 'sudden pressure' is proposed—Mechanical Therapeutics for the repair of Vital structures! *Principiis obsta* is a maxim older than Ovid, but *our* pathologist has forgotten it. He would cure the *leak* in the dam, by clearing out the channel of the stream! The reviewer deserves to take rank with the inventor of *Kinesipathy*—who professes to cure his patients by 'kneading' the disease out of them! After all, the reviewer 'demonstrates' one fact—that the Laputan philosophers were not the *least* wise of their tribe, since sunbeams might no less surely be extracted from cucumbers then Fatty degeneration prevented by Alcohol.

'Fact No. 4.' The sudden contraction induced by the application of Alcohol to the vessels in the web of a Frog's foot (the fact referred to) is not only followed by dilatation of the vessels, but by *stagnation* of the blood within their walls. An agent that produces temporary dila*ta*tion of the vessels of circulation at the expense of a subsequent *dil*ation of the circulating-current, is a singular remedy for the removal of the *constitutional* cause of the degenerated tissue, and of the material morbidly deposited. But we have shown that, besides all this, alcohol frightfully increases the *amount* of morbid matter in the blood, which is the chief source of this disease. *

Dr Macculloch on the proposed cure.

* "1st, The deposit of fatty granules on, and in, the membranous walls of the capillary and other corporeal vessels, and more especially the *substitution* of these fatty granules for the elements of the membrane itself, is, emphatically, fatty *degeneration*, or, in other words, a *diseased condition* of nutrition or assimilation. 2nd, That diseased condition which exhibits itself by this fatty degeneration, tho its *exact* nature is as yet unknown,—tho we cannot demonstrate its cause, in *all* its bearings,—we *do know that the process is a chemico-vital, and not a mechanical process.* The indications of restorative treatment, would be, (1) to diminish the amount of carbonaceous or fat-producing food, and (2) to increase the oxygen (in the form of denser and purer air). By

3. The reviewer admits that "*excess* of Alcohol renders nutrition *imperfect*": but says that "the argument from excess is not applicable *here*." Now if ever there was a case in which what is true of excess is true of more limited use, this is one. Alcohol, the reviewer himself

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Fatty degeneration.

these means, the capillaries will have less respiratory-food to burn, and the agent for consuming it would be able to burn-up *all* the material that would otherwise be converted into *diseased*-fat, and the lungs and skin to expel carbonic-acid, etc. Such would be the rational method, aiming at the removal, or the avoidance, of the *cause*, or at least the product of the disease, *ab initio*. How does the reviewer propose to *prevent* the deposit of these fatty granules? Why, by the *slight and sudden pressure* of the contraction and dilatation of the vessels, to be produced (he says) by Alcohol. Now, 1°, the proposal merely professes to remove the diseased fat *after it is formed and deposited within the vessels*,—to remove the 'effects,' not the 'cause,' of disease,—to remove the mud from the channels of the river *after it is deposited*, not to *prevent* the mud from getting *into* the river! To speak then of such a mechanical, *ex post facto* method, as a means of *preventing* the disease, betrays an ignorance of which even a 'Master Tommy' might well be ashamed! But 2°, would the contraction and dilatation be *produced* by Alcoholic drinks? We have no *proof* of this. True, outward application of Alcohol is followed by the contraction and subsequent *relaxation* of the capillary vessels, but granting that the internal exhibition of Alcohol (under more complicated conditions) produces the same effects precisely; what then? We know the *indubitable fact*, that the expansion which follows the contraction is persistent to such an extent as to produce the diseased condition called CONGESTION—i.e. temporary paralysis and dilatation of the vessels, with *stagnation* of the blood within them. Grant, then, for the occasion, that the fatty granules attached to the inner coats of the vessels are *shaken off*, they must become mixed with the blood and be carried away in its current, *to be returned to the same place in less than one minute*, as the reviewer himself states, on the authority of Budge and others, when he wants to prove that Alcohol remains so very short a time in the system as to render its pernicious effects a nullity! The moment Alcohol has left the system, then the fatty-granules must, of necessity, be returned and deposited *worse* than ever, inasmuch as the vessels have been rendered more dilated, weak, and inefficient—congested in short. Will he reply, "*continue* the alcoholic liquors and the beneficial effects will continue"? I answer—they could not possibly *continue long*, even if his hypothesis were correct. Granting, also, "the sudden-pressure" power of Alcohol for the nonce, the reviewer has truly stated (it is one of the little bits of 'pure albumen' scattered thrö his article) "if Alcohol were *continually* present in the circulating current, the effect would be fatal"—an appropriate commentary and conclusion to such a sottish proposal. Again, 3°, these (fatty) granules have been found substituted for the elements of the membrane itself, thus diminishing the calibre of the vessels,"—that is, the walls of the vessels have been absorbed or corroded away, and the holes plugged or stopt by the 'substituted' fatty granules. Well! your elastic water pipes are corroded and holed, and the holes are stopt with putty pipe clay. Now use (according to the supposition) a "*sudden pressure, contraction*, and *dilatation*" so as to remove the putty or pipe clay, and drive it into the 'current'—need I describe the effect of *that* effect? The blood in our vessels would be no less infallibly effused by the reviewer's plan, than would the water from the pipes. The fool who sawed off the branch of the tree he sat on, was just as wise. But, above all, Alcohol, by preventing the combustion of carbonaceous matter, is certain to *feed* this fatty disease."

allows, *does tend* to dilate the capillaries, whether taken diluted or pure, —and *does actually* retard the combustion of the ordinary carbonaceous and effete elements of the circulation,—the oil being often deposited as fat by the way, and thus becoming a mechanical obstruction to the nutritive-circulation even in health. * We observe, in passing, that the disease is *not* one of 'imperfect nutrition'—it is one of *perverted* nutrition; and Alcohol in *all* quantities perverts nutrition, by *disturbing* the natural processes of the system.

4. The reviewer's comment on the doctrine of *stimulants* is characteristic. He assumes that Professor Carpenter, by the phrase "HABITUAL excitement" (i.e. frequent or daily) means, or intends the reader to understand, *continuous, never ceasing* excitement!—and then proceeds to class the *daily dietetic use* of alcohol under the description of *occasional* excitement!—inferring, *modo suo*, that we must be the better, not the worse of it. But the sorriest trick which he plays of this kind (as we have seen) is the use (or rather abuse) of the word Stimulant, a *generic* term comprehending a great many agents and substances which agree in possessing the common-quality of stimulating, but *differ most essentially in regard to other and specific properties.* Hence one fallacy in his comparison of *Theine* (the peculiar alkaloid of Tea, Coffee, and Cocoa) with *Alcohol.* The things are specifically contrasts. Tea and Coffee are *stimulants*, but so far from being narcotics, they are used, as stimulants, to counteract the effects of alcohol, opium, and other narcotic poisons. † But Alcoholic-drinks and Opium

Coffee *versus* Alcohol.

* It has been noticed that moderate doses of alcoholics increase the *butter* (fatty matter), whilst they lessen the *caseine*, and other normal constituents, of the Milk of nursing females.

† It is a curious coincidence that Dr RUTHERFORD RUSSELL, in another quarterly of the same date, the *British Journal of Homœopathy*, No. LIII, should be putting forth the same fallacies about ALCOHOL NOURISHING THE NERVES (borrowed from Dr Bucknell in the *Medico-Chirurgical Review* for January, 1855). He admits, however, that *Tea* and *Alcoholics* are contrasts.

"That ALCOHOL does act *narcotically*, especially if combined with another "narcotic, such as that of Hop, requires no proof. It is an admitted fact.

"The physiological effects of the infusion of COFFEE are very peculiar. It "seems to act especially upon the spinal and respiratory system of *Nerves*, "rather than on the cerebral, as Alcohol does: while *Wine induces sleep*, "*Coffee and Tea prevent it*" (p. 392).

Strange also is it, that this same Dr Russell, in alluding to his master Hahnemann's charging upon Coffee a change in the National character of the Germans, from steadfastness of will and hardiness of frame to frivolity of mind and mobility of muscle—should answer: "What truth is in it, is certainly applicable to the *abuse*, not the use, of Coffee." So that coffee does lead to National abuse, after all!

"Teetotalers, in their associated capacity, do not feel called upon to agitate against the use of Tobacco, Tea, etc., for two reasons. 1st, because their injurious effects are slight, physically, in comparison with Alcohol, while their moral effects are almost *nil*. 2nd, because they believe in doing one thing well at a time, and admire the dictum of Mr Cobden, who said, when asked to agitate some other question besides that with which his name is historically associated, 'No!—if you divide the interest, you will create confusion, injure

are *essentially narcotics* as well as stimulants, and all experience, thrō all time, has demonstrated that their use constantly *tends* to excess—a result not to be predicated of any natural element of Food or Drink, and only true to a trifling extent of any other substance in general use. How does the reviewer attempt to invalidate this fact?

"Men [*all* or *some*?] drink one or two cups of *Tea* or *Coffee* at breakfast with unvarying regularity for a whole-life-time; but who ever *felt the necessity* of gradually increasing the amount to three, four, five cups?"—p. 123.

What then? The reviewer has himself admitted that many who use alcoholic drinks *do* "feel the necessity" (we call it craving) for the too frequent use of the excitement, *which will not satisfy in the original quantity*. He is therefore 'hoist with his own petard.' To parody his verbal smartness, 'Of two things one—either the comparison is an ignorant one, *or* the article is written with studied insincerity, and design to dupe his readers.'

The Arsenic *quasi* argument.

And here we are reminded of his *Arsenic* Eating comparison—which, however, even *he* has not the effrontery to "offer as argument." He says it *is* a poison—but that its use, in small doses, "*gives* vigor, beauty, and an enviable rejuvenescence." Now, we believe, that a few generations of arsenic-eating would *extinguish the race*—and signs of that result in Styria are already appearing. Arsenic eating, as we happen to *know* in the case of horses, when left off, *is immediately followed by loss of flesh and appetite*, and the best food is incapable of restoring them to their *former health and appearance*. If this is giving 'vigor' and 'health,' we must have a new meaning imposed upon the words. So of men. Dr Von Tschudi, in his account of the Styrian arsenic-eaters, * says that they begin with only half-a-grain of crude arsenic. "They then cautiously INCREASE THE QUANTITY, *as they find that the doses last taken* BEGIN TO LOSE THEIR [original] EFFECT." This proves that the constitution *is* altered: that, unlike food, which day by day produces the same stimulus, because it repairs the organism wasted by action, arsenic is a poison. The same law holds good of alcohol; with this difference, that operating as a *narcotic* on the Cerebral-nerves, it induces in addition a *passion* or *craving* for the repetition of the stimulus: whence our National Intemperance.

What the exact physiological *nexus* is, we care not. For his rapid 'bent-spring,' hypothesis, as for his mechanical explanation of Fatty *de*generation, we have the supremest contempt. *Why* narcotics *always tend to excess*—and some more than others,—Science can at present not explain—and may never be able to do so. But that there *is* "a physiological connexion" between their general use and their abuse, is testified by the experience and observation of the Human

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* In *Medicinische Wochenschrift*. Vienna, Oct. 11, 1851.

both, and lose the result you aim at.' After the Teetotalers have compassed the Maine-Law—that *Monstrum Horrendum* to the reviewer!—they may possibly inaugurate a crusade against some cognate evil, whereof one of the most urgent would seem to be a crusade against *Humbug*—of which the reviewer runs a great risk of becoming one of the first victims."—Dr MACCULLOCH.

race. No one denies the existence of cases which *seem* to be exceptional, but however these idiosyncratic instances are explained, and they are as true of Opium as of Alcohol, they can not overturn the Rule of *whose existence* they are themselves evidences. The FACT is admitted by the reviewer under a charming-disguise. (By-the-way, what a curious thing a 'Dictionary of the English Tongue' would become under his editorial revision!) In the comparison with Tea, as we have seen, he denies this tendency of Alcohol—but in the following comparison of Wine with Woman, he admits it.

5. "There *is* a peculiarity in Alcohol which justifies in some degree its bad reputation. ... Nothing less than the *fascination of its virtue*, the *potency of its effects*! Were it less *alluring*, it would not lure to excess; were it less potent, it would not leap into such *flames of fiery exaltation*. In its virtue lies its crime. Smirch the lovely face of Helen, and neither Greeks nor Trojans will fight ten minutes for her. Not in disparagement of FIERY ALCOHOL, whom we are fighting to defend, do we confess *the fatal gift of fascination which makes dalliance with her dangerous* [Is tea-sipping so dangerous?] but in candor, in the hope that *our* candor will be reciprocated." *—p. 114.

But what can all these fine words signify when applied to *physical* properties, save the very doctrine previously denied? If they do not mean *that*, then, like the cant of 'reciprocated-candor,' they are just 'springes to catch wood-cocks.'

If dithyrambic defences for strong-drink are to be put in, well and good, but let it not be done under 'false pretenees' of 'Logic and Science.' There is no physical *explanation* involved in all these glowing terms of eulogy;—the 'faseinations,' and 'potencies,' and 'gifts,' and 'flames of fiery exaltation,' are descriptive of effects, not of *causes*. In these confessed properties of Alcohol, so totally different from any Natural element of Food, we find another reason for discarding the application of that term to it: that which is designed for daily-diet can never be daily-danger. To suppose it, is either blasphemy or Atheism, and in either case directly hostile to all ones notions of the natural 'fitness of things.'

6. Immediately afterwards the figure is changed; and we are told that "*Razors* are dangerous *instruments*." So that what was, the moment before, an *attractive, fascinating potency* that *did* something, now becomes a *passive* instrument, *only* to be placed out of the reach of 'Master Tommy,' lest, in his ignorance, he might misuse it and cut himself! *So*, says the reviewer, "Temperance Advocates frighten the "Mob of larger Tommies by depicting the limbo of horror where "dwells the terrible Spirit." Is rum, then, really so like a razor? Our English Tommies don't need the one *till* they get their beards, and *steadiness of hand* to use the razor: *when* do they need the rum? and having got it,—these up-grown Westminster Tommies,—do they *really* not often cut themselves? Whence, then, "*all the miseries so feelingly laid at its door*"? We should laugh at the fool who proposed a Razor-Removing Movement, on account of a few cuts of the skin—even if there were any causal relation provable—but does the reviewer laugh at *our* movement? On the contrary,—"That Drunk-"enness is *one of the most terrible sources of Demoralization*, no reason-

The shaving comparison.

"able being doubts. Equally indisputable is it, that any Movement "which can effect a reform in the" [tendency to cut your skin when shaving? or of 'Master Tommy' to play with edged tools?—nay, but] "*tendency to Drunkenness*, deserves the heartiest support." And the reviewer gives his hearty support by misrepresenting it—does he give it all of that quality he has? In short, he begins by admitting a very *striking peculiarity* in the social consequences of the drink, then points out the *peculiarity* and fascination of its virtue and its *potency*, and ends by a metaphor and a sequence which imply that it has *no peculiarity at all*, and neither less virtue nor more vice than—a Razor. It would be a curious problem to solve, How much contempt a writer who so reasons, must have for his *readers?*

The following is perhaps as extraordinary a specimen of physiology and logic as any in the article.

Poison *not* poison, because the constitution *resists* it!

7. "Even if Alcohol were a poison, would it deserve *all the harm* said of it? There is tea . . tobacco . . *carbonic-acid*—beer, a slow poison; wine, accellerated poison, brandy, rapid poison. And these poisons we *accumulate*. How do we *escape* their terrible effects? It is clear the organism must possess *some admirable contrivance for righting itself*, some method of eliminating *all these poisons* AS FAST *as they present themselves*. On this the Moderate man may take his stand, to JUSTIFY his practice."—p. 113.

So at last we have got an intelligible description of 'the Model Moderate Man'— the 'positive Moral philosopher'! He is a person who answers Paul's memorable question in the *affirmative*—"Shall we *Sin* that *Grace* may abound?" Yes, quoth he, never mind transgressing *a little* against Nature's laws; *her* grace will 'right' *our* wrong; her plenary goodness will oppose the pernicious tendency of our 'pleasures'; and, by the correlation and equivalence of moral-'forces,' will *translate* Poison into Food, or at least, Evil into Indifference! All this infamous casuistry is constructed for the defence of a 'dangerous' excitement, 'dalliance' with which is often so fatal, and for upholding the sensual 'pleasure' of the Bottle and the Barrel! And the writer of this skaddle-philosophy professes to lecture Teetotalers, and assumes a jaunty air of superiority over 'the poorer classes'!

But the physical philosophy of the paragraph is no better than its moral. We deny that you escape *all* the effects of transgression. When we imbibe the poison of badly ventilated assemblies or workshops, of opium or of alcohol, we do not '*sleep off*' all the effects—"the headache next morning" does not "*pay for*" the transgression, even if we "*hear* no more of it." The limitation of our power to mark sequences in the delicate and protracted processes of life,—does not prove that there *are* no sequences, but only that we are dim of sight or dull of hearing. The headache, as the reviewer knows well enough, is neither the injury nor the cure—but the *indicator* of mischief inflicted, of organism 'disturbed.' That disturbance is followed by inevitable loss, for 'the dice of Deity are always loaded.' His test is a delusive one, and he knows it. No doubt, the organism, as in all disease, *rights itself* in a sense—but *not* in the sense that 'Disease is as good as health,' or 'its consequences are *the same* as those of undisturbed health,' which is virtually the absurdity he affirms. The reviewer, as a reader of Carpenter's *Physiology*, is familiar with the

fact that the inhabitants of the Färoe Islands habitually consume flesh and fish in a *putrid state*. No doubt, such things are food as regards some part of the tissue, but are they not also *poisonous* in respect of the decayed parts? True, they enjoy a high average of health, on the whole, and have cases of longevity—for they are an active people and breathe a pure, bracing air—nevertheless they have more than an average of deaths in the direction in which the operation of putrid poisons may be expected to tell—viz. *diarrhœa*. Will the reviewer "marvel at the aptitude" of the organism to "make light" of putrid-poisons—and infer—"*No* harm is done"? He knows that vinous 'disturbance,' repeated for years, ends in chronic and incurable complaints, at least as a rule; and that these (notwithstanding his monstrous assertion that Temperance is *no* element of longevity) terminate in the premature breaking up of the constitution. He knows also (from p. 423 of Carpenter's *Physiology*, 4th ed., a work he cites) that St Martin's case of inflamed-stomach *without headache or felt-mischief*, demonstrates the fallacy of his test. Dr A. Combe's comment is quite worthy of the attention of the reader who does not wish to be hood-winked. "Had St Martin's stomach, and its inflamed patches, not been visible, he too might have pleaded that his temporary excesses did him no harm; but when they presented themselves in such legible characters that Dr Beaumont could not miss seeing them, *argument and supposition were at an end*, and the broad fact could not be denied." Case of St Martin.

The reviewer's incidental 'longevity'-logic, is just as lax as the rest of his reasoning: if what he generally adduces proves too little, this proves much too much, as he almost admits. "Many of the most striking examples of longevity," he says, are "found amongst the *Intemperate*." * [Ergo, Intemperance is not bad—or if bad, not *so* bad?] As to Cornaro's *wine*, he has not shown its alcoholic-strength; and if he had, it would not mend the matter. There is on record the case of a *Theriak* who took several ounces of opium and a drachm of corrosive-sublimate daily, even in his 127th year. What then? Let us have the inference by all means! After all, the Facts are 20 to 1 against Alcohol. As Dr Arbuthnot long ago said, and as we have Longevity objection.

* "The reviewer adduces several cases of great drunkards attaining old-age, as a proof that alcohol 'if it *be* a poison, is a *slow* poison.' Any man now-a-days would be dubbed an ass, who should deny the *poisonous* and *deadly* effects of miasmata and malaria, on the ground that some persons living in marshes, or in ill-drained courts, had attained to extreme-longevity. The reasoning is this:—'Under the influence of *poisoned air* 9,999 persons die prematurely; but the 10,000th person reaches 95 or 100 years: *ergo*, bad-air 'if it *be* a poison, is a *slow* poison'! Does the reviewer really mean that we are not to avoid bad air *as much as possible*?" In Marylebone, London, a woman died lately at the great age of 101 years, from 'decay of nature.' The registrar mentions that "this old woman was *for forty years* the keeper of an apple-stall in Great Marylebone-street, an occupation which exposed her to all weathers, and which she quitted only ten months ago. She lived for nearly the same period *in a small room in one of the unhealthiest parts of the district*." Dr Macculloch.

elsewhere proved by Induction,—"The instances of Longevity are *chiefly* amongst the abstemious."

How Alcohol vanishes *in no time.*

7. "But alcohol, and other poisons, escape *as fast* as they enter." Do they really! In what way?

"The torrent of the circulation takes but one minute to carry a particle of blood over the whole circuit of the body: (so) alcohol can no more *remain* than oil upon ignited coals."

The reviewer tells us it can not remain—we answer that Facts show that it *does* remain: and it is not 'so much the worse for the facts,' but for his *fat*uous fancies. Let any man put one tea-spoonful of oil upon an ignited coal and it will blaze just one minute. Let him then drink two tea-spoonfuls of brandy (=one of spirit), and bring his breath 20 minutes after to be tested by a Teetotaler, and our word for it, the *smell* will yet betray him. If alcohol were so very transient a guest, how could it 'gladden the heart,' and cause to bloom those 'wine-lillies,' as expressed in the dithyrambic rhapsody of Dr Wilkinson. * The fact is, as Experiments prove, the alcohol in half-a-pint of wine is not all expelled in *four hours*, and the effects last much longer. As alcohol *permeates the tissues* (a fact ignored by the reviewer), and only enters into the circulation gradually—in the brain, as the reviewer admits, adhering to its substance—so it must be but *gradually* consumed or expelled. Does the reviewer *believe* that its pathogenetic effects upon organs and their function, cease when *all* the alcohol is turned off? (As regards its stimulus, he argues the reverse.) Does he think that the sea goes down *as soon* as the wind lulls? The oil-and-coal illustration, then, is one that gives no light, and ought never to be intruded into an article professing to be purely logical and scientific.

8. In one part of the article, however, we have a still more singular *nil*lustration. It is where he touches on adulterated food; tea, and pickles—which he says are all poisons—"*especially the Pickles!*" The pickles even affect his literature, which grows terribly lax; and this, in turn, disturbs his logic, until at last we have a perfect specimen of Drivel-in-a-Diarrhœa and Philosophy in a Flux. It concludes:—

Food is poison!!

"Death itself is *but* the consummation of a system of slow-poisoning."

Poor 'Death itself' does not escape the reforming rigors of the reviewer! *Nothing*, he argues, kills us (not even Intemperance) before our time. Food is commonly supposed indeed, to keep us *alive*, air to help the lungs to breathe—water, the blood to circulate,—but, philosophically, these also kill us—at *last*!—for *all* is slow-poisoning (and can't be made faster); Food is poison, Poison is food; Life is the beginning of death, Death *only* the end of life—"Eat, drink, and be merry, for to morrow we die."

9. The reviewer tells us that "*oxygen* is as terrible a poison as strychnine, if in excess." That *excess* of oxygen is evil, like all other

* That rhapsody by the way, and the *Rhine-Wine*-romance, as well as Liebig's general lapses and laxities, are cited and answered in our 'Fallacies of the Faculty' (Works, vol. i). See also the critique on the *Eclectic Review* article, of which the *Westminster's* is a mere expansion: better written, but not a whit better reasoned.

The Oxygen comparison, which turns out a *contrast.*

excess, none disputes: but what has that to do with its being an essential poison? Oxygen, in the quantity in which we get it in atmospheric air, is *not* in excess—does not 'disturb' but upholds life—and is therefore *not* a poison. Alcohol and strychnine, on the other hand, are poisons essentially, for while they are neither of them, like oxygen, a factor-of-life, they are both of them 'disturbers' of the vital-balance. Why did not the critic compare alcohol with *atmospheric oxygen* as we breathe it? Because the irrelevancy of the comparison would have been too palpable, even for his after-dinner readers. *

The feeble Nervous-force fallacy.

10. "The *digestibility* of Alcohol, so to speak, surpasses that of any other aliment; it requires less elaboration to fit it for *its ultimate purpose*, namely, the *translation* into *nervous-force*."

'Translation into nervous-*fudge*' would be a phrase of equal meaning! It is pure vagary—bold assertion without a shadow of evidence, contradicted alike by experience and the highest authority. Men are both physically and mentally stronger when abstaining from alcoholics as diet. This is the testimony of 99 out of every 100 who have tried both sides. Johnston, the reviewer's own authority, cites an instance of two tribes; of whom the abstainers bear heat, cold, and wet *with impunity*,—while the other tribe, who drink *spirits*, can endure neither, even for a short period, without danger. Volumes can be filled with such testimonies, derived from comparative trials of both systems, at home and abroad, at sea and on land, in cold and in heat. The effect of alcohol on the nervous system is to lessen available-force,—to exhaust it in fact,—to produce irritation, and to provoke passional excitement. From hundreds of published testimonies, we select the following, because it was *such* evidence, not an abstract formula, that first induced us, twenty years ago, to make trial of teetotalism, and realize its excellence.

Experience.

Alcohol a brain-poison

The Rev. Edward Hitchcock, LL.D., the geologist, Professor of Chemistry in Amherst College, enumerates amongst other results of abstinence from wine, which had been even medically prescribed—

"Relief from nervous irritation.

"Greater equanimity and clearness of mind.

"More uniformity and buoyancy of the animal spirits.

"*The power of determining with greater accuracy the nature of the religious emotions.*" (The italics are his own.)

The Hon. Judge Brewster, of Monroe Co., N.Y., says,—"My temperament, naturally ardent, has become calm and even; and I hope eternally to bless God that he gave me wisdom and grace to adopt total abstinence from all fermented liquors. From experience and observation, I believe that the use of fermented drinks is one of the most potent agencies in paralyzing the life of active piety and holy obedience."

The Rev. Alonzo Potter, D.D., formerly Professor of Philosophy in Union College, Schenectady, now Bishop Potter, says he had "cherished the belief that general debility might be relieved by the use of good wine," but adds, "I am satisfied that *my* health, which was good before, has improved.

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* "Oxygen," he says (but in another page), "is not intrinsically a *deleterious* stimulus." What, then, has it to do with strychnine or alcohol which *are* 'intrinsically deleterious'?

Alcohol lessens nerve-force.

My eyes have been stronger, *my intellect clearer*, and my sleep more oblivious. What a commentary on the contrivances of poor human wisdom!"

The Honorable THEODORE FRELINGHUYSEN, says of his trial of abstinence—"It is a grateful fact to me, that protracted and severe mental efforts can now be borne without weariness, and *the mind is far more cheerful, composed, and self-possessed.*"

The Rev. S. MILLER, D.D., Professor of Ecclesiastical History, Princeton, N.J., had one or two glasses of sound wine daily prescribed to him by his physician. He says,—"I followed his advice for more than sixteen years; seldom drank more than one, never more than two. During all this time my health was delicate. More than six years ago, when approaching my *sixtieth* year, I broke off at once. The experiment had not proceeded more than a month, before I became satisfied that my abstinence was very strikingly beneficial. My appetite was more uniform, my digestion improved, my strength increased, my sleep more comfortable, *and all my mental exercises more clear, pleasant, and successful.*"

W. A. ALLCOT, M.D., of Boston, Massachusetts, who tried abstinence in the prime of life, says—"For six years past all my *senses*, except hearing, *have improved greatly;* though circumstances have been far less favorable to health than formerly."

Last, not least, we will cite the greatest theologian of America after Edwards, the Rev. LEONARD WOODS, D.D., Professor in Andover for half a century. He says—"With the light now cast on the subject, it seems to me incredible that a minister can be in the habit of using *any* intoxicating liquor. This view, which I have taken the liberty to express very plainly, is the result of much sober and careful observation *on myself and others*, as to the moral influence of the habit once so common. It tends to influence all that is depraved and earthly, and to extinguish all that is spiritual and holy. *It is a poison to the soul as really as to the body.*"

It is equally delusive to talk of the *digestibility* or *elaborating* of alcohol. Like all fluids it is absorbed; but is found unchanged in the blood, liver, brain, etc.

Another false comparison.

11. The reviewer makes a comparison between the effects of *pressure* (on a muscle) and of *alcohol* (on the stomach, blood, or nerves). It is one of the *natural functions* of the voluntary muscles to bear moderated external pressure: *we* could neither stand, sit, nor lay down without this provision: but how does it follow that they, or any other part of our organization, will bear *poisons* with impunity?

Medicinal use.

12. At page 119 a caduceous passage of Dr Carpenter's is cited from the *Scottish Review* as to the *medicinal* use of alcohol (the passage seized with such avidity by Parker, the Pale-Ale puffer), asserting that "a glass of bitter-beer, with the principal meal of the day, does more good *and less harm than any medicine.*" The only attempt at proof which Dr Carpenter advances, is the loose undetailed case coming under his own observation, and the case of Dr Joseph Clarke of Dublin—which are more than balanced by the *fully detailed* experience of Dr Bostock, reproduced in the *Prize Essay*. Had Dr Bostock done like Dr Clarke, he might have been cited as an example of the good of beery-stimulants—but he fortunately relinquished alcoholics at 60, and shortly after experienced the *most sensible improvement* of appetite and health. So of Sidney Smith's case.

13. The reviewer gives two extracts from Liebig, which as we

have quoted and commented on at large elsewhere, * may be briefly dismissed. At the Peace-Congress, *certain* dishes (not specified whether beans or bacon, but) *especially* farinaceous dishes, were in greater request than at ordinary German dinners—*because*, infers Liebig and our logician, the members were—Teetotalers. And what then? We have often used the statement to show that 'wine replaces pudding' chiefly by *stopping appetite;*—not by doing what, and how, the pudding does; *but* by preventing the *call* for pudding. Our philosophers get on too fast. They forget, 1st, that several of the party (to our personal knowlege) were vegetarians, with whom 'pudding replaces beef'—and, 2ndly, that the ordinary *greasy* German-dishes were not relished by many others, who, therefore, made 'farinaceous dishes *replace* oily ones.' We name these things chiefly to show that our callid critic is as slippery in his observations on points of Sociology, as in any other part of his addled Science.

Wine lessens appetite.

The reviewer, in this last of 'philosophical' pleas for tippling, reminds us of the admissions of the first of poetical apologies for 'jolly good ale and old.' We refer to the drinking song of A.D. 1551.

I cannot eat but little meat,
My STOMACH IS NOT GOOD;
But sure, I think, that I can drink,
With him that wears a hood.

Bad appetite.

I love no rost, but a nut-brown toste,
And a crab laid in the fire;
A little bread shall do my stead,
MUCHE BREAD I NOUGHT DESIRE.

14. The second citation from Liebig refers to the *Medical* use of Rhine and Bourdeaux wines. But what has that to do with a question of Diet for men and women in health? Is physic food, or food physic? No—says Dr Wilkinson, in the identical dithyramb quoted by the reviewer, "*We can not infer that Food and Medicine are the same thing.*" Even in the 'authority' cited, we find all that is needful for the teetotal theory, and proof besides that the citer perverts his authority. The reviewer is defending *alcohol*, one element of the wine—Liebig is praising the *salts* of the Wine, but *dis*praising the Alcohol. Else what is the meaning of these sentences?

Physic *not* Food.

"The nobler wines, producing a minimum of *injurious after effect.*

"Its price is higher, *the more perfectly its effects are rendered harmless* by a corresponding increase in the excretions of the lungs and the kidneys.

"*The consequences of the action of alcohol* on the nervous system, which are, *after a certain time*, MORE OR LESS completely neutralized" (p. 453).

Liebig condemns alcohol.

It is *not* the alcohol, but the '*fixed ingredients*' of the wine that Liebig eulogizes—but this knowlege the reviewer keeps to himself. And what further does the Baron say? In the Rhine-gau, apothecaries are few and drinkers are many! *Owing to the alcohol-in-the-Wine*, the reviewer leaves his readers to infer. Aye, but what says Liebig?—"The Rheingau, SO HIGHLY FAVORED BY NATURE." The words printed in capitals are left out by our reviewer (tho in the *middle* of a para-

* Vide vol. i. Appendix. pp. ix. clxxix.

graph)—the second time (and of the same page) we have caught him *suppressing* the illustrative part of the sentence, lest it should throw an inconvenient light upon his philosophy! He thus craftily converts a loose negative-argument into an apparently positive fact! Teetotalers, however, never disputed the fact, that in a fine, healthy country, the climate and the water will, "*more or less neutralize*" evil habits: it is sufficient to affirm that the Evil *to be* neutralized *is* Evil—at least sufficient for all but a 'positive Philosopher,' who will 'justify' the practice of *voluntarily* imbibing what he knows to be pernicious, on the absurd and immoral-plea that there are organs for its 'elimination'! *

Mr Simon on the injury of *littles*.

* We wonder he never attempted to persuade his 'Westminster boys,' of the *utility* of hard water! He has not fabricated an argument against teetotalism that would not hold *as* good (or bad) against Sanitary Reform. Even the same may be said of Bad-air as of alcohol—it *lessens appetite*—ergo, is nutriment! On the evil-of-little-evils daily accumulated, we commend a passage from the *Sanitary Condition of London*, by Mr SIMON, F.R.S.

"Except in the comparatively few instances where active medicinal agents are naturally dissolved in a water, its effects, if injurious, would be so slow as to elude ordinary observation. If, as is exceedingly probable, the same constituents of water as impair its solvency out of the body, do likewise operate against its being the most eligible menstruum or dissolvent for processes occuring within the body—such processes I mean as attend the act of digestion; if the lime and other hardening ingredients which waste soap in our laundries, and tea in our parlours, DO SIMILARLY WASTE WITHIN US THOSE ORGANIC AGENCIES BY WHICH OUR FOOD IS DISSOLVED AND CONVERTED; any result arising from this source would be of gradual operation, would not easily admit of being traced to its source, and (except in susceptible persons) would rarely produce such symptoms as might immediately draw attention to their cause. The ill effects (whatever they may be) arising from the use of hard waters *must be looked for in chronic impairment of digestion, and in those various derangements of nutrition in distant parts* (the *skin* and *teeth* particularly) which follow as secondary results on such chronic disorder. It would be ridiculous to look for the operation of an ill-chosen water, after its habitual use *during two centuries*, as though one were inquiring for the symptoms of an *acute poison*. The signs that are to be ascertained among a population, if such signs exist, are those which would evidence a premature exhaustion of the power of digestion, and would testify that the machine on which we depend for that power had been exposed to unnecessary and avoidable fatigue.

"Perhaps I need not inform you that indigestion, with all that follows from it, is so frequent in the metropolis, *in persons after the first strength of youth*, that, for large classes of society, a perfect discharge of the natural process of digestion (such a discharge of it as a lecturer would describe to be *the exact type* and intention of nature) *is exceptional and rare*. UNQUESTIONABLY, IN LARGE NUMBERS OF CASES, WINE AND BEER AND SPIRITS, RATHER THAN WATER, HAVE TO DO WITH THIS EFFECT. Unquestionably, other influences of metropolitan life—and, not least, the mental wear and tear which belong to its large excitement, contribute immensely to this chronic derangement of health; but there are reasons likewise for believing that the quality of water consumed is not a matter of indifference to the result. We cannot but give it an important place among those influences of health or unhealth which we consider *local*; and we cannot refuse to recognize the fact, that in recom-

15. The reviewer, in his destitution of positive fact, resorts to provisional-prophecy!

"Organic chemistry MAY—*one day*—show that Alcohol is *actually* converted into nerve-*tissue*; which already one may SUSPECT to be the case from its great affinity, and the *selective eagerness*, with which it *acts on* that tissue." Prophecy.

O rare histologist! Liebig has demonstrated, by a rigorous and beautiful induction, that *poisoning* with arsenious acid, and the salts of lead and copper, arises from 'the *great affinity* and the *selective eagerness* with which they act upon' human tissues. Now apply to this fact the reviewer's vaticinative philosophy *in posse*, and see what a charming illation follows!

Major: Whatever manifests a great affinity and selective eagerness for tissue, chemistry *may*—one day—show to be convertible into tissue.
Minor: But *Arsenic* has a great affinity and selective eagerness for tissue:
Therefore, Organic chemistry MAY—*one day*—show that Arsenic *is* converted into tissue; which one already *suspects* when we see how it blooms on the cheeks and glitters in the eyes of the Styrian Demoiselles. Q. E. D.

It is in truth quite impossible for the reviewer to maintain either a *convertible* property or a dietetic virtue for Alcohol, on such grounds, and reject it for Arsenic—nay, his own statement that "Arsenic gives both to horses and men increased vigor and beauty," is far *stronger* evidence of the "nutritive and force-evolving properties" of Arsenic, than any he has advanced on behalf of Alcohol. May we ask Mr Chapman, the 'able editor,' when we must look for an article defending the 'moderate' use of Arsenic against those ridiculous 'Master Tommies' of Society and St Stephens who have enacted that 'alarming' *avant courier* of a Maine-Law,—a law so terribly abridging the liberty of the subject, that it will not allow the People to purchase their arsenic *as* and *when* they please? Arsenic defensible by logic!

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mending our patients (as we do often recommend them) to try 'change of air' for complaints which baffle us by their obstinacy, so long as the subject of them remains in London, *the course on which we rely for success implies 'change of water,'* equally with that other change to which *more* popular importance is attached.

"In illustration of this view, I may quote to you the experience of two other towns. Dr Sutherland stated in evidence before the General Board of Health, that having lived for a number of years at Liverpool, he had long entertained a conviction *that 'the hard-water in a certain class of constitutions, tends to produce visceral obstructions;* that it diminishes the natural secretions, produces a *constipated* or irregular state of the bowels, and consequently deranges the health. HE HAD REPEATEDLY KNOWN THESE COMPLAINTS TO VANISH ON LEAVING THE TOWN, *and to re-appear on immediately returning to it, and it was such repeated occurrences which fixed his attention on the hard selenitic water of the new red sandstone* as the probable cause, as he believes it to be, of these affections.' And Dr Leach, of Glasgow, stated before the same board, as the result in that town of two year's experience of a substitution of *soft* for hard drinking-water, that in his opinion '*dyspeptic complaints had become diminished in number;*' and that it had 'been observed, since this change, *urinary diseases* have *become less frequent*, especially those attended by the deposition of gravel."

16. The mention of a *Maine-Law* reminds us of the reviewer's 'grief and alarm' at that much reviled and misunderstood example of Legislation. Let his philosophic 'grief' be soothed, and his nervous 'alarm' subside! He is frightened at a *Phantomime*—at ghosts that he has himself conjured up! The Law in question is *not* 'a sumptuary law'—does *not* prescribe what a man shall eat and drink, or wherewith he shall be clothed. We quite accord in the opinion that such dictation would be impertinence in individuals and tyranny in law. It is only with *acts* (and trading is acting) that *practically* affect our persons or our property, that Society has to do. It is not our fault, but rather our misfortune, that the Traffic in Alcohol at home, as in Opium abroad, becomes a social curse and burden, inflicting fourfold more injury on the material and moral interests of the Community than all other anti-social agencies combined. If Liquordom, and Liquorish-Advocates, will give to *us* a guarantee that we shall not reap the bitter fruits of *their* system, be exposed to the depredations of *their* criminals, pay for the bread and for the burial of *their* paupers,—we shall have nothing more to say about the matter. But so long as we are made to bear the burden, we shall certainly assert our right of interference with its *chief cause*, and do our utmost to extinguish it. The reviewer is quite safe in regarding the Temperance Movement as one of great and lasting influence, which will outlive alike the ridicule of prigs and the pretences of Science,—a movement marching majestically to the fulfilment of its twofold mission, destined not only to a moral but a legal expression, in the great Protective Law of

The Maine-law *not* a stipulatary law

—NO LICENSE TO THE PROVED SOURCES OF PUBLIC CALAMITY—

a law, the Pioneers whereof Posterity will delight to honor, whilst its Opponents, we venture to think, will be

"Forgotten as Fools, or remembered as worse."

Moral effects of alcohol.

The reviewer professes to eschew all discussion of the moral effects of Alcohol, on the ground of their being extraneous to the physiological aspects, tho he does not uniformly abide by that determination. But, in reality, the physiological question *is necessarily a moral one*, since the Brain is the instrument (at the very least) *thrö which* the Mind is manifested. Now Alcohol not only alters, but *perverts* the action of that organ in a special manner, having a peculiarly eager affinity for its cells and tissues. It is on account of its effect on the brain that it is taken in 19 instances out of the score, tho such alterations may be 'disguised' in the liquorish-language of 'Pleasurable excitement,' 'cheering,' 'wine lillies,' and 'flames of fiery exaltation.'

The reviewer has put his pleas for Alcohol in comparison with pleas for coffee, tea, etc.;—has compared stimulants with narcotics, and narcotics with simple excitants. One comparison, however, we find *no-where* instituted, nor even distantly alluded to—we mean, the comparison of Alcohol with *Opium*. Yet the analogy is complete on almost all points. * Why, then, was the comparison never made? Because

* The point excepted relates to the *combustible* properties of alcohol; tea, coffee, and tobacco *also* failing in that respect. But as regards the preservation of heat, it has been recently shown that Opium enables a man to bear Cold much better than Alcohol does.

the consciences of the People of this country have not *yet* become sufficiently debauched by appetite and interest to tolerate a defence of the Oriental curse; and therefore any apology for Alcohol, founded on Opium-eating, would have had the force of an *argumentum ad absurdam*: unsophisticated minds would revolt from a Logic and Science issuing in such conclusions. Nevertheless, not a single plea (not even that of the feeling of warmth) can be advanced for alcohol which does not hold good of opium. *It*, also, in 'moderate' quantities, generates 'brilliant saws and dreams,' 'imaginative skies,' and 'maketh glad the heart'—*it*, too, lessens the *excretion* of effete tissues (ergo, '*saves*' tissue!), and since Dr Oppenheim has observed that the *Theriaks* (the opium-intoxicated) "*eat scarcely anything*," opium must be *Nutriment*! Furthermore, many of the fine things said of Alcohol by our reviewer, are said for Opium by men of similar pretensions to science. Nay, Johnston attaches much value to the testimony of those medical men who maintain that the habitual use of opium, as practised in China, seldom occasions any *positively* injurious effects! But, comments Dr Carpenter, † "let it be borne in mind, that these gentlemen are *liable to have their judgments warped* by the fact, that the great Company, whose servants they are, draws an immense revenue from the Opium cultivation"—and he might have added with truth, that these 'honorable men' are, almost to a man, dealers in the drug and profiters by the iniquitous and baneful traffic. No doubt, too, they would experience the same kind of 'grief and alarm' as our reviewer, at the shadow of an Opium-*Maine-Law*! What says Huc?—who, from his long residence in China, and the confidence he secured, must have penetrated into the inner-life of the Chinese far more than those suspected and 'outside barbarians'—the servants of the 'honorable' East India Company, whose conscience is with their God, and whose God is in their purse.

The *ignored* parallel between opium and alcohol.

"At Canton, at Maçao, and at other parts open to European Commerce, we have heard people attempt to *justify* the trade in Opium, by the assertion that its effects were *not so bad* as was supposed; and that, as with fermented liquors, the *abuse only* was injurious. A *moderate* use of opium, it was said, was beneficial to the feeble and lymphatic Chinese. ['Civilized stomachs,' the Reviewer would say!] Those who speak thus, however, are generally dealers in opium."

Huc's account of the apologists for opium eating.

Having *their disinterested* friends also, writing articles in the *Pekin Review*, 'calling in the aid of Logic and the aid of Science' to propagate their virtuous principles!

"And," continues Huc, "it is easy to suppose, that *they seek by all possible arguments to quiet their consciences*, which can hardly fail to tell them that they are committing a bad action. But the spirit of trade, *and the thirst of gold*, completely blind these men [like our Hanburies and Buxtons], who are prompt in every good work. ... With the exception of some rare smokers, who, thanks to a *quite exceptional organization*, are able to restrain themselves within the bounds of 'Moderation,' all others rapidly advance towards a speedy death, *after having passed thrö successive stages* of idleness, debauchery, poverty, the ruin of their physical strength, and the complete prostration of their intellectual and moral faculties."

† *Scottish Review*. July, 1855.

The pleasure plea.

Opium possesses even somewhat more than alcohol, of that "*alluring virtue* of fascination and potency of effect" arising from its being more exclusively a narcotic; but nevertheless, they are both sufficiently illecebrous—and almost every word of the preceding description is emphatically true of the Liquor Traffic. The *Edinburgh Review* for April, 1855, similarly describes the danger and fascination of Alcohol. * For Opium too, the Westminster's plea (that alcohol is a *quasi* necessity to 'Pleasure') may be set up. But are we to believe that artificially created 'day-dreams' and 'delusions,' excited by the tittilation of the nerves, are legitimate and lasting Factors in the Pleasures of Life? Let the natural phænomena which thus arise be analyzed, and the fact of their delusive character will become apparent. † Persons previously in a natural and sane condition, who have their emotions and ideas thus 'disturbed' or 'altered,' are as truly moved by illusions (by that which has no outward truth) as is the Lunatic whose babbling mirth, or gloomy fancy, excites our pity. Nevertheless, this is precisely the effect *desiderated* both by the votaries of Alcohol and of Opium. Can this be necessary to man—the Noble of Nature? Is it not rather a mean and contemptible ministration to his baser part?—a cowardly retreat from the Battle of Life, the conflict with sensuality and pleasure?

"But all men are *not* noble!" So much the worse for the Plea then! seeing it can only sink the ignoble to a deeper and more hopeless degradation still.

Moreover, since it is another excuse for drinking alcohol that its effects are *very temporary*, and its visit in the system very brief, is it not so much the more a pity to enact the fool and foul humanity for so transient and trifling a pleasure? And all these apologies for the debasing Sensuality which disgraces both the select and vulgar circles of our country, elaborated by the *professors* of that Positive Philosophy, that stern and inflexible system, which would chase Sham, Day-dreams, and Delusion out of all the provinces of Human life! It will be a sad and fatal day for Old England, when she accepts for her *Leaders*, these teachers of sensual Pleasure. From that hour will spring up, rank and rapid, the fungi of artificial and parasitic vices, until the deadly Rot of a Sybarite Indulgence will eat away her Saxon heart, and 'the fairest Tree of History,' drawing nurture from a poisoned soil, will but too surely, in its dank and fading foliage, herald a rapid decay and disastrous dissolution.

Fatal admissions. Alcohol riotous.

VI. *The reviewer makes Admissions which are fatal to his doctrine that Alcohol is good and Teetotalism unscientific.*

1. "It is demonstrably true (that) the action of alcohol on the animal body *in health* produces a *disturbance* in the *regular-current* of vital action"—p. 98.

He says, indeed, that such disturbances may be induced by '*over-*

* See extract in page lix of this volume.

† The reviewer has virtually replied—'Nothing *lasts*' (for ever)—and 'Delusions' are as good as realities, (while they last!) Ergo—no matter how we live!!!

doses of oxygen,' which nobody denies: but granting that oxygen is poisonous in over-doses (and so far as Teetotalism is concerned, we do not object to his having two classes of poison,—the one *qualitative* and the other *quantitative*), how does the fact of too-much oxygen producing disturbance, neutralize the *quality* of alcohol to disturb healthy movement? The cited sentence, therefore, is equivalent to the proposition at p. 101, on the truth of which (the reviewer allows) Teetotalism must triumph—viz. that "any case in which it *is* true (that some evil follows every dose) must depend on intrinsic *qualities*." Disturbance of healthy action *is* admitted to follow the use of alcohol—therefore Teetotalism triumphs.

2. "If alcohol were *continually* present in the circulating current, the effect would be fatal.... Its temporary presence is a temporary disturbance"—p. 113.

But drink, air, and *real food* must be continually present: therefore alcohol is not food, but *essentially* a 'disturber,' which is all that is meant by poison.

3. "We admit the *danger* of fiery Alcohol. Do we not imply the *charm*? In its *virtue* lies its *crime*"—p. 114.

When things peculiarly and essentially dangerous become safe,—when the charms of illicit love become innocent,—when crime is the same as virtue,—when folly is sound philosophy and contradiction one with correct science,—*then* Alcohol will become a good thing.

4. "We must not strain the argument by exceptional facts like (that of the Irishman who lived to the age of 125, and whose existence fût une ivresse d'un siècle may be alluded to as examples of the *very tardy operation* of the 'slow-poison'), or they may prove too much. We allude to them rather as incidental illustrations of the power of the organism of *resisting* the effects of this poison"—p. 118. Alcohol *resisted* poison.

Again, nobody denies the *resisting* power of the body, whether in the case of opium and arsenic, or of Alcohol. To admit the *successful* resistance of alcoholic-poisoning, is as much an admission of alcohol *being an enemy*, as if death followed: for it was owing to the virtue of the constitution, not the innocence of alcohol, that death did *not* more rapidly occur. The reviewer may divide poisons into *acute* and *chronic*—or short and long—or slow and quick—and put alcohol in which category pleases him best. A thorn by any other name will *prick* the same. What we say is, that an enemy we have to *resist*, is not a friend we ought to invite.

5. "Under *perfectly healthy conditions* ... Alcohol is *certainly of no use*." Alcohol useless.

How thankful Nature (which has ignored alcohol in her providence) should be for this concession! But suppose we are not *healthy*,—then we are, so far, diseased—and *we* place Physic in the category opposed to Food. The reviewer, however, would be puzzled to show what proper *medicinal* action alcohol possesses. Without denying its possible utility (a plaster or a crutch are useful: are they, *therefore*, medicine?) we draw a conclusion directly the converse of the reviewer's.

"In Poison there is *Physic*."

This saying of Shakspere we admit, and also the cognate truth—

In Physic there is *Poison*.

Teetotalers, however, find little need for any of them—and it is a very suspicious circumstance, that the patronage of vinous-physic should induce the *necessity* for physic less palatable.

Pawning-fallacy.

6. "As *force is not to be created out of nothing*, there can be no doubt that a *concentration* must be gathering *into one point of time* what would otherwise extend over a large surface of time, the amount of force being in each case the same"—p. 121.

The fact aimed to be expressed by this deceptive sentence is more plainly expressed in the favorite maxim of the Pot-house—'A short life and a merry one.' To which another proverbial sentence is the answer—'You may pay *too dear* for your whistle.' In sober truth, however, *destructive* and *narcotizing* action is NOT a concentration of *life* into one point: it is the breaking of the *bank* of Life—the waste of capital—and the loss of interest and of *reproductive* wealth and enjoyment. If not, the sinner and sensualist have the best of it. The fallacy is exploded by the next admission:—

7. "In the other case (of *un*natural, or excessive excitement) *the original conditions of nutrition are so impaired*, that the organism does not manifest its *old susceptibility*"—p. 124.

Exactly the case with alcohol! Permanent-life is sacrificed to the 'Pleasure' of Sense! Perhaps the reviewer's concluding sentence contains the most amazing admission of all.

Alcohol tricksy.

"Alcohol is a *very dangerous, tricksy Spirit*, needing the power of a Prospero [i.e. *supernatural* power] to make it beautifully obedient; *needing* sagacity and self-command to make it a blessing."—p. 124.

The reviewer is fond of logic; let us put his doctrine into due form.

Alcohol is *so* deceitful that *supernatural* power alone can make it obedient:
But man possesses no supernatural power.
Therefore, man can *not* make it 'beautifully obedient.'

How very consoling this conclusion! how wonderfully philosophic the recommendation for men to introduce within the body that which *thus* steals away their brains! But the doctrine contains other elements, neither so true nor so consistent as the preceding syllogism.

Man's *supernatural* sagacity and self-control, *if he had it*, could make Alcohol a blessing:
But man has no beautiful control over Alcohol; it is Alcohol that possesses a dangerous and tricksy power over him:
Therefore, man's *natural* sagacity and self-command can turn this tricksy spirit, *over which he has no control*, into a veritable 'blessing.'

We should like to know what per centage of mankind (in the reviewer's belief, if he believes in any thing) are in possession of these combined attributes of supernatural-power, sagacity, and self-command, in sufficient measure to effect the 'conversion' of the Evil-Spirit of Wine, full of danger and deceitful fascination, into a beneficent Angel of Light? The "wild and whirling words of Methodists and Emancipationists" are at least matched by the rapid revolutions of the reviewer's logical whirly-gig!

Our task is now terminated, and the Westminster Reviewer review-

ed. We have analyzed his famous article, and shown it to be an adulteration and a cheat. Critics are the *police* of Literature, says the *Leader*, who often acts upon the maxim. So have *we*, on this occasion. Deeming the literary policeman of the Westminster to be dishonest, we have treated him accordingly. The *facts* adduced are our imperial warrant. We will not, out of any *policy*, conceal the only opinion of the article which is *possible* to *us*. We know the power of *honest* prejudice—but there is no mark of prejudice in the Westminster reviewer. There is systematic subtlety and suppression, *in the face of knowlege*. There is not a single indication of logical fraud absent: there is room for no 'charity' but the charity of an intellectual imbecility that can not see through the structure and elaborate net-work of the review. Whether the article reflects any credit on the organ in which it appears, we willingly leave to the judgment of the reader. Our own opinion is the result of deliberate consideration, and will not be reversed. At the outset, the reviewer professed that he would accomplish much; he has in reality achieved nothing, or nothing to the purpose. Ostentatiously inaugurated, by blast of egoistic trumpet, like a Chinese campaign, the article ends as it began.

"Like a tale of little meaning, tho the *words* are strong."

The article characterized.

A Barrister, we admit, is not to blame because good arguments are impossible in a bad cause. Had the Advocate of Alcohol abstained from ridicule and abuse (the ridicule being invariably founded on fiction, and the abuse *nicely adjusted* to excite scorn but not disgust), we could have judged him more leniently than is at present possible. He has done more than to sophisticate Science and Logic,—*that* might be regarded as an *elaborate joke* in bad taste;—he has done worse than merely to misrepresent the opinions which he pretended to confute,—he has tampered with Truth and sophisticated Science, expressly to array the sacred name of Philosophy against the cause of Virtue and of National purity. When writers suborn 'Science' to serve Sensualism, and pervert 'Logic' into the pander of licentious Liquordom, they transcend the limits of a jest, and betray the highest interests of humanity. Literature and Science have their moral responsibilities; and intellectual Talent should be the fast friend, as it was designed to be the instrument, of divine Virtue. All who are elevated by Ability and Knowlege above the multitude, are under *special* obligations to turn their gifts to healthy and happy uses. They should take heed to Tennyson's noble words, and resist every venal temptation to corrupt the Truth and abuse Knowlege.

"Hold thou the good: define it well,
"For fear divine Philosophy
"Should push beyond her mark, and be
"Procuress to the Lords of Hell."

Let us admit, however, two incidental uses of the Essay.

1°. About all that *can* be said, with any show of Logic or Science, in behoof of strong-drink, has now been uttered. Talent has done its best and its worst, by Sophism and Suppression combined, to uphold the False. We had here the Fallacies of twenty years skilfully drilled, disciplined, and concentrated upon *one position*. It was in sooth the

Two uses of the article.

*Mala*khoff Tower of Liquordom; fortified by a logical *Todt*leben, and defended by innumerable ditches and EARTH-works—not to speak of 'Infernal machines.' Its guns were of the largest calibre—at least looked at from a distance—and as an Indian might say, they were 'big-voiced.' But a *roar*, however loud, does not alarm us. The fortress, like its prototype, after all its vast preparations, was destined to fall before the allied forces of Fact and Science. It has been stormed and taken, and as we have seen, its unspiked guns turned upon the Town of Tippledom itself.

2°. It may be regarded as a Magazine of Fallacies—paradoxically useful even after being exploded. Should we ever find time to complete a work on Logic, conceived and partly published some years back, we shall have in this article of the *Westminster Review*, a ready reference to almost every possible fallacy, whether Syllogistic, Verbal, or Material, into which Simpletons can fall.

The ignored basis of teetotalism.

VII. *The ignored basis of the Teetotal Theory and Practice.*

"The stimulus of Alcohol seems selected for special reprobation WITHOUT CAUSE BEING SHOWN, except that people choose to say it is not natural."

This must be classed amongst the most unprincipled of the statements which the reviewer puts forth; for after misrepresenting the doctrines of the Teetotalers, he here attempts to conceal his perversions, by assuring his credulous readers that we *have no other reasons* for abstaining from Alcohol except a word! We therefore beg, in conclusion, to indicate a few reasons which we do not find that the reviewer has even *attempted* to refute.

In *Bacchus* and *Anti-Bacchus*, in our *Standard Library* and *History of Alcohol*, and in twenty other books published prior to Dr Carpenter's *Prize Essay*, as well as in that work itself, there are as many striking experiences and experiments detailed, illustrative of the virtue of teetotalism and the injury of alcoholics, as would fill volumes.

Infallible experience.

Teetotalism has been tried in all climates and by all classes and occupations of men. By the broad and infallible test of experience it has been shown that 'water is best'—and alcohol bad—as beverage. Youth and age, male and female, prince and peasant, unite in this teaching. Alcohol can add neither warmth nor strength to the body; can nourish neither muscle, nerve, nor brain. It is at all times and in all places, poison, not food: an enemy, and not a friend—and however charming, yet still only 'bewitching poison.'

It has been shown by experience and comparative tests in *Armies* and *Navies*, in *Sick-clubs* and in *Assurance Societies*, that a *body* of teetotalers have only half the sickness and mortality of limited drinkers. (On this point, Mr Harrington Parker is more candid than the reviewer—but less logical.) Dr Gilbert Blane and Dr Trotter, even in the last century, showed that grog-rations *doubled* sickness.

Is it hard work and endurance in cold that is to be exemplified? We point to the achievment of Jacques Balmat and his friend, who first planted human foot on the summit of Mont Blanc. With food and brandy he failed. With food and wine, he failed. With food, water, and syrup, he succeeded.

Is it muscular work that is required? We point to thousands of such testimonies as the following, given by Mr Mayhew in his book on London. A Coal-whipper is speaking. "I have backed as many as 60 tons in a day, since I took the pledge, with perfect ease. But *before I should scarcely have been able to crawl home;* certain to have lost the next day's work."

Is it in heat, or employments where work is carried on in heated places? We point to our Glass-blowers, our Furnace-men, and our Stovers—who declare that they can do *far better with water* than beer.

Is it the heat of the Indies, or the cold of Polar regions, that is to be faced? We point to evidence like the following:—

The celebrated Arctic navigator, Sir JOHN ROSS, R.N., says—

"My first voyage was to Jamaica, where the captain and several of the crew died. Excepting that I never drank any spirits, I took no care of myself. I exposed myself to the burning sun, slept on deck in the dew, and ate fruit without feeling any bad effects. I never tasted spirits, and to this alone do I attribute the extraordinary good health I enjoyed."

"On the last voyage to Honduras, all the common sailors, 12 in number died, and I was the only person that went out in the ship who came home alive, which I attribute entirely to my abstaining from the use of spirituous liquors." Sir John Ross.

Of his great Arctic Voyage (April, 1829 to Oct. 1833,) he says—

"I was 20 years older than any of the officers and crew, and 30 years older than all except 3, yet I could stand the cold and endure the fatigue better than any of them, *who all made use of tobacco and spirits.* The most irresistible proof of the baneful effect of spirituous liquors upon sea-faring men was, when we abandoned our ship in Victoria Harbour. We were obliged to leave behind us *all* our wine and spirits, because we could not carry any on our heavy loaded sledges, which we had to drag 900 miles before we got to Fury Beach. *There indeed we found provisions, but thank God, no spirits, and it was quite remarkable to observe how much stronger and more able the men were to do their work, when they had nothing but water to drink.*"

General JACKSON, President of the United States, remarked—

"He had observed that in hard duty, and in excessive cold, those performed the one, and endured the other, *better*, who drank nothing but water."

In a letter to the Admiralty, Oct. 6, 1852, Commander KENNEDY, of Lady Franklin's Arctic Expedition, attributed the fact of all his crew returning in good health from their arduous Polar Voyage, chiefly to the strict teetotal principles under which they lived—tho on one occasion they dwelt in snow-huts *for three months.* With such experiences, it is worse than folly to talk about alcohol increasing heat and force.

We have no need to go to the Arctic regions, however, for proof, that alcohol, as Cobbett long ago said, makes us colder. Men who are *not* teetotalers find that out, as well as ourselves. The 'Report from the Select Committee on Public Houses' (Aug. 1854) has a case in point. A Mr J. POWELL is giving evidence (p. 55).

"You have driven, for the last 40 years, hackney coaches and cabs?—Yes.

"During that time, you must, in a cold winter's night, in the rain, have suffered from being wet through?—I have.

"Do you not think it necessary that you should have some spirits

or beer?—I *know that water is best then*, if I am thirsty. I have been out one winter on water, AND I FIND I STAND THE COLD BETTER."

Is it the effect of abstinence in age that is desired to be known? or the senile syllogism of *vinum lac senum* that is required to be exploded? We point to the following, and hundreds of similar experiences.

Dr R. D. MUSSEY, in the *Boston Telegraph*, for June, 1855, relates these cases.

Teetotalism in Age.

"I was acquainted, some years since, with an intelligent farmer in New Hampshire, who at the age of 75, abandoned the use of alcoholic drinks, which for several years he had been in the habit of taking moderately. When he was 77 years old, he assured me that he had not since tasted alcoholic liquors of any kind, and *that his strength and activity had greatly increased.* He observed, that in 'the last two summers he did more personal labor than he had done in any two summers of the preceding twelve.' Of the instances of striking longevity on record, a great majority of those whose habits are detailed, rank among the water-drinkers. We occasionally tho rarely, meet with cases of individuals who have attained old age under a moderate use of alcoholic drinks. But does this prove any thing more than that their constitutions were better than the average, and *capable of resisting to a greater extent, influences in their nature adverse to health and long life?*

Dr Holyoke. Long-life, yet poisoned at last.

"A distinguished physician of Massachusetts reached the age of 100 years, and for the last 30 or more years of his life was in the habit of drinking every forenoon at 11 o'clock, *a measured table-spoonful of Jamaica rum* in a half-pint of water. He remarked to me that this was a 'habit' he had got into, but he knew it was 'a bad and foolish habit.' A *post mortem* revealed the fact, *that he died of chronic disease of the stomach*, showing that a course of living might have been adopted which would have carried him to a still higher age. There are some poisons which may be taken daily in portions too small to admit of their influence being appreciated by any powers of investigation we now possess. I have seen the solution of *arsenic* given for weeks without the least obvious impression, till at length a swelling of the face, or a diarrhœa, indicated the peculiar effects of this poison. So with lead. This metal may be taken in minute quantities for months, sometimes for years, before the symptoms of lead-poisoning make their appearance."

But perhaps the testimony which most directly refutes the notion of alcohol, in moderate doses, contributing to increase either muscular, nerve, or mental force, is that of the distinguished, wise, and witty SIDNEY SMITH, canon of St Paul's, in his letter to Lady Holland:—

Sidney Smith's experience.

"Many thanks for your kind anxiety respecting my health. I not only was never better, but never half so well: indeed, I find I have been very ill all my life, without knowing it. Let me state some of the good arising from abstaining from all fermented liquors. First, sweet sleep, having never known what sweet sleep was; I sleep like a baby or a ploughboy. If I wake, no needless terrors, no black visions of life, but pleasing hopes and pleasing recollections; Holland House past and to come! If I dream, it is not of lions and tigers, but of Easter-dues and tithes. Secondly, I can take longer walks and make greater exertions without fatigue. My understanding is improved, and I comprehend political economy. I see better without wine and spectacles, than when I used both. Only one evil ensues from it; I am in such extravagant spirits that I must lose blood or look out for some one who will bore and distress me. Pray leave off wine,—the stomach quite at rest; no heartburn, no pain, no distension."

Nor is there wanting to our cause the most abundant *technical* proofs that alcohol is a poison; as in the experiments of Beaumont, Prout, Fyfe, Vierordt, Cogswell, R. D. Thompson, Otto, Wright, Scholtz, Huss, Böcker, Naas, Lehmann, and others—which we have, again and again, published—*demonstrating* that alcohol is a *direct poison* alike to muscle, nerve, and blood.

All this evidence the reviewer ignores!

Liebig, while of course allowing the chemical fact of the combustion of alcohol in the circulation, has clearly and accurately described *the necessarily concomitant poisonous effects*—viz. Liebig, etc., on alcohol-poisoning.

1. The abstraction of oxygen from the arterial blood, thereby leaving it more venous and less vital:

2. The limiting of the normal change of tissue, thereby reducing the sum-total of life:

3. The retention of carbonic-acid, effete tissue, and other noxious matter in the system:

4. The excitement of certain organic functions at the expense of voluntary mechanical power, producing weariness, feebleness in the limbs, and drowsiness:

Thus demonstrating, that tho alcohol undergoes a rapid combustion (at the expense of a better element), it is necessarily accompanied by so many *pathological* effects as to render its *dietetic* use worse than a 'scientific' and philosophical' absurdity.

It is some comfort that while mere pretenders to Science are twisting their amateur knowlege into defences of tippling,—the profoundest of Histologists, and the most philosophic and cautious Interpreter of modern Chemistry and Physiology, has come to conclusions in exact accordance with all that we have taught upon the Science of Life in general and of Teetotalism in particular. From LEHMANN'S great work on *Physiological Chemistry* we reproduce two passages. *

"While the enlightened practitioner is disposed to attach at least as much importance to a rational *dietetic* as to a specifically therapeutic mode of treatment, the value of investigations on normal respiration, in reference to the science of medicine, can never be over-rated; for when once the fact is universally 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 speedily as possible the carbonic-acid which has accumulated in it*, these observations will have afforded us true *remedial agents*, which exceed almost every other in the certainty of their action. We may perhaps aid a tuberculous-patient quite as much by recommending him to respire a moist-warm-air, as if we prescribed *Lichen Carragheen*, or *Oleum jecoris Aselli*. Instead of tormenting an emphysematous patient, suffering from congestion and hæmorrhoidal tendencies, with aperients and saline mineral waters, we might relieve him far more effectually by recommending him to practise artificial expansion of the chest, in respiration, or to take exercise suited to produce this result,—*while we should forbid the use of spiritu-* Lehmann.

* Vol. iii. § On Respiration.

ous drinks, and not prescribe tinctures, which might hinder the necessary excretion of carbonic-acid.

The last verdict of science.

"Altho in our considerations of the influence of ordinary food on the Respiratory function, we have deduced the results of the observations from purely *chemical* relations, *we should greatly err* [like the Westminster] were we to adopt the same method in reference to certain substances occasionally introduced into the organism, such as the *ætherial oils, alcohol, theine*, etc. Their immediate effects remind us that there are *nerves* in the animal organism which exert the most important influence on all its functions, *on nutrition as well as on respiration*, and that, consequently, they in some degree disturb that uniform course of phænomena which we might suppose would result from chemical laws. WE CANNOT, THEREFORE, BELIEVE THAT ALCOHOL, THEINE, ETC., WHICH PRODUCE SUCH POWERFUL REACTIONS ON THE NERVOUS SYSTEM, BELONG TO THE CLASS OF SUBSTANCES CAPABLE OF CONTRIBUTING TOWARDS THE MAINTENANCE OF THE VITAL FUNCTIONS."

To recapitulate: Alcohol dries up the fountain of the salivary and digestive juices, and *precipitates* their solids; it corrugates and inflames the albuminous tissues; it arrests the nutrition and expends the force of muscles and nerves. It disturbs the mind as well as the body; it kindles up an artificial and tyrannous appetite, which often reduces the strongest souls to imbecility and slavery; it dissolves the tenderest ties of home and of friendship, quenches every spark of honor, and darkens with an eternal eclipse the once glorious possibilities of the Future.

"Reviewing *our* argument, previous to closing it, we find that Teetotalism" *can* "maintain its position as a scientific theory by proving that" in narcotics *something* "true of excess is true in a minor degree of Moderation,"—that Alcohol, poisonous in excess, *is* poisonous in moderation; that alcohol is pernicious, because, altho a *quasi* respiratory element, it is *also* a poison;—"that its assistance is delusive because temporary, and in its results dangerous;—and that [quantitative] 'Moderation' is not only deleterious in itself, but still more so by" *tending* "inevitably to excess. Every one of the arguments" against the Teetotal theory "we have answered: every one of" the scientific "positions, we have shown untenable against the evidence of Logic, Science, and Fact." We have proved, moreover, that the reviewer's veneered plausibility has been attained only by a studious avoidance of definite scientific terms and the perpetual employment of ambiguous words and elastic phrases;—by assertions without proof, and often directly in the face of fact;—by lingual trickery and illicit logic;—by the callid trick of *coining* for the adversary, defective or absurd propositions;—by the wholesale suppression of *our* real opinions and the ignoring of their proper evidence so copiously furnished in our text-books;—and finally, by the sophistication of Science, of Fact, and even of Quotation.

A SECOND ANSWER TO THE WESTMINSTER.

The Exeter Hall Manifesto.

Meeting in Exeter Hall.

The Committee of the *London Temperance League* having determined to give a public answer to the article in the *Westminster Review* for July, 1855, entitled 'The Physiological Errors of Teetotalism,' which had been so be-praised by a hostile press, and palmed upon its conductors as the expression of real science, applied to Dr F. R. Lees, of Leeds, to give a refutation of the reviewer, and to Professor Carpenter, F.R.S., to preside on the occasion. The meeting was fixed to take place on the evening of the 8th of October, 1855, in Exeter Hall, London, very extensive publication being given of it through the press. At the time appointed, the large hall was well filled, with an audience of a select character, numbering about 3000. Many literary, medical, and political writers, as well as clergymen, were present on the occasion, and tho the London press generally ignored this vast meeting, it told with great effect on the public mind. The full report prepared by the reporter of the *Daily News* was not simply cut-down by the Editor to half-a-column, but the purport and expressions of the speakers were in some instances quite inverted, while ready access was given, on the other hand, to a long letter of an M.D., in opposition—based upon the garbled report. To complete this controversy, and to preserve the memory of a meeting important in the History of the Temperance movement, we gather up a summary of the proceedings, so far as they are correctly given, from the *Daily News* of October 9th, and the *Christian Cabinet* of October 12th. Only a few passages of the speeches can be preserved.

Speech of Professor Carpenter.

Dr W. B. Carpenter took the chair at 8 o'clock, amidst great cheering. He observed, that twenty years ago, when he commenced the study of physiology, the principles and laws of diet were in a state of *chaos*. Since then, through the researches of Mulder, Liebig, and others, great light had been cast over this department. He would especially refer to the luminous distinction of Food into *Combustible-matter* for generating heat, as a condition of vitality and nutrition, and *Plastic-matter*, for building up the tissues or organism of the body, and repairing its waste. Chemical analysis had shown, that the *proximate* elements of food were the same, whether derived from the vegetable kingdom, or from the flesh of animals. Now, in the progress of physiological science it had become apparent that Alcohol had no claim to be regarded as belonging to the nutritive class, since it was destitute of nitrogenous matter: and as regarded the former, experience had shown that alcoholic liquors, tho combusted in the circulation, nevertheless diminished the power of the body to endure severe cold. It was in the independent pursuit of his own science,

and by a personal trial of the system, that he had arrived at the conviction that abstinence from alcoholic liquors as diet was physiologically sound. As a representative of physiological science, it was due to the meeting and to the cause, that he should state this. The *Edinburgh Review* last year, and the *North British Review* in a recent article, had both given their sanction to the movement and its principles: but now, for the first time, so far as he knew, among the great quarterly organs of literature, the *Westminster Review* attempted to dispute their truth. Whoever might be the author, he was certainly no scientific physiologist. He could not conceive it to be possible that any well informed Physiologist would either have ventured to dispute what is laid down by every Toxicological authority, that alcohol is essentially a poison; or would have attempted to draw a strict line of demarcation between food and poison, such as assuredly does not exist in nature. The reviewer alleges that his (Dr C.'s) argument, that alcohol *carbonizes* the blood, would be unanswerable but for one little oversight—that the supply of oxygen to remove the carbon is really *un*limited. Truly, the supply of oxygen *in the air* is unlimited; but the supply *in the blood* is limited. The quantity taken in thrō the lungs, is as strictly * regulated by the degree in which the external temperature is below that of the body, as the draught of Dr Arnott's stove is restricted by its regulating thermometer. The reviewer affirms, that "Food, of whatever kind, is ultimately translated into *force*;—whether it pass thrō the intermediate stage of tissue, or thrō that of fuel for the respiratory process, *its* final stage is motor-power." Now, he begged to say, that the reviewer had here jumbled together a number of heterogeneous ideas. Among the *forces* produced in the living body, we have to draw a marked distinction between *heat* and *nutritive force* on the one hand, and *muscular power* and *nerve-force* on the other. Heat may be translated into nutritive-force in the vegetable or animal body;—and nutritive-force, *with appropriate material* to work upon, generates living-tissue. It is by changes in this living-tissue, changes which involve its death and disintegration, that *Nervo-muscular* power is generated; and *without such changes* no production of animal force takes place. But alcohol interferes with these conditions. He had been trained a water-drinker, and found it to contribute both to his bodily and mental power—and he advised all parents to bring up their children as water-drinkers. (Cheers.) He then introduced the lecturer.

Correlation of forces.

Dr Lees, on rising, was greeted with enthusiasm. He said—With the motives of the writer of the article in the *Westminster*, he should not on that occasion deal: he had eslewhere exposed the *morale* of the production: and, unlike the reviewer himself, who had set his 'science' in a background of abuse, he did not desire to prejudice the discussion. He did not even object to the Reviewer *liking* his wine, nor defending what he liked: he himself liked teetotalism. What he objected to in the reviewer was, not a fair defence of his own principles, but an unfair attack upon theirs.

Dr Lees' lecture.

* The reviewer, in the *Leader*, changes this word, with his usual want of scruples, into *solely!*

FIRSTLY, the reviewer uses opprobrious epithets to excite scorn in an already prejudiced court—'the select circle' of the *Westminster*. Professing to treat us respectfully, he really did no such thing. He did not scatter his abuse, indeed, so profusely as some more vulgar opponents; he was too skilful for that—but there was still plenty of flies in his amber.

SECONDLY, he had fabricated the arguments which he professed to demolish: instead of dragging any genuine, representative Hector, around the walls of the Teetotal Troy, he had constructed a paper Hector of his own: quite unlike the real one. The principles which the reviewer put forth *as* teetotalism, were not it—and he calmly defied him to produce them out of the standard literature of the movement. Teetotalism, says the reviewer, rests upon two pillars and only two—1st, That alcohol is a poison, *and not a food*; 2nd, That *whatever* is true of the excessive use of alcohol is true, in measure, of *any* use. Now, teetotalism, as all those acquainted with its origin amongst the artizans of Lancashire well knew, had but *one* pillar—something firmer than verbal definitions—namely, the living *Experience* of working-men that they could perform hard labour much better without strong drink than with it. Science, and even Logic, might illustrate and adorn the pillar—as they did—but *Fact*, not phrases, was the basis of the movement. It made no difference to them what you *called* Alcohol. If food, it was proved by experience to be *unwholesome*—and that settled the question with men of common sense. In the *History of Alcohol*, nine years ago, he had anticipated this petty quibble, where he defines a poison as "that which cannot fulfil the purposes of Food and Drink, *or which can do this in no degree innocently or permanently.*" The property of alcohol contended for, its *combustibility* in the blood, *so far from being denied*, had, since the year 1842, formed the basis of his own exposition of the influence of alcohol on the human system—so that the reviewer is actually retailing old teetotal teachings while *representing* that we ignore the solitary fact on which his ingenious, but disingenuous, defence of tippling is based! * The reviewer, then, was simply beating, for the amusement of his readers, a wind-bag of his own filling: and he could not conceal his contempt both for the writer who had so treated this question, and for newspapers, like the *Economist* and *Nonconformist*, that had eulogized the article as for ever settling this question! The reviewer professed to know, gentlemen, what their question was, far better than themselves. He says it is *not*, How much better is *beef* than *Brandy*, but what is the value of Brandy *in itself*? Now the teetotalers didn't care a fig about such a question—the question concerned not brandy in itself, but *in them*, with reference to the *uses of food*. It was essentially a question of comparison: which they had practically settled, by proving that taken in the place of fuel-food, it *gave out less heat* than oil or sugar, and did much mischief while doing less service—and science showed that it could not at all answer the purpose of beef.

Only fictitious teetotalism assailed.

* See our Reply to Dr Lankester in 1851, vol. i. p. cli, where we answered the dead argument galvanized by the reviewer, that alcohol *replaces* food.

Swindling Logic.

THIRDLY, the reviewer dupes his readers with definitions and words, much as the juggler does the gaping rustics with his balls and sleight of hand. He first imposes on things a *common name;* and while the *specific* distinctions are covered up for the moment—*presto!*—what belongs to the one belongs to the other! "Many things are force: Food is force: Alcohol is force: 'argul,' alcohol is food!" And he denominates such wretched abuse of language, "the aid of logic and the aid of science"! But the most impudent specimen of logical-sleight is that relating to Food and Force. We have been accustomed to separate heat, light, air, drink, *and food*, into specific categories of vital-needs: but now he finds that "food *is* force," and therefore iron, or chalk, or sulphur, or salts, are food—that water is food—that air is food—and poison is food, and *food is food—because* all is Force, and force is food! With this definition he effects transformations more wonderful than the Wizard of the North!

Perversions of science exposed.

FOURTHLY, the reviewer perverted Science, and fraudulently cited scientific authorities. His discussion of the question, *What is poison?*—is a disgrace to literature, and an insult to common sense. In the *History of Alcohol*, a poison was defined as that which, by its physiological relation, *disturbed* the normal function or structure. Now the reviewer says alcohol is a disturber, but not a poison—so that he is simply quibbling about words. But it was very easy to prove their proposition out of his own mouth. He says, Poison cannot *replace* food. All we need to ask is, Has alcohol this property? Food modified in the blood, is *continually circulating* in the system. Now can alcohol do this? No, says the reviewer—"If alcohol were *continually* present in the circulating current, the effect would be *fatal*" (p. 113). Food is the householder, but alcohol must not be even a perpetual lodger. He (Dr Lees) denied that a single property made any article a food. Alcohol might do *something* that food did—but that did not make it food. Food was distinguished by three remarkable properties or laws;—1st, An appropriate *chemical composition*. Oil and Sugar, for instance, as fuel, were respectively adapted for burning up slowly, yet the oil fast enough for Greenland, and the sugar slow enough for India. 2nd, All food was marked by *physiological neutrality*. It was not irritating, but soothing: it did not burn or inflame. 3rd, It was *teleologically* safe—indicating by the sense of satiety *when* we had taken enough; it did not create but satisfy appetite. Now alcohol had none of these marks: its properties were the very opposite. It burnt too fast in the system, and flamed out rapidly. It was a disturber of the normal condition of the organism. It had a tendency to generate an increasing appetite for itself, and thus demanded a *supernatural* power to make it obedient. A substance so characterized could never be included in any rational category of food or drink. In the category of Food were three typical things—*Albumen, Oil, Sugar*. These were always present in the blood, formed from the food, even when the food did not contain them as such. The place of the first, as Liebig long ago said, alcohol could not possibly supply, by way of nourishing or building-up the body. And the same authority had distinctly shown that 266 parts of brandy, after disturbing the body and wasting nervous-force, only yielded as much heat as 100

Laws of food defined.

parts of the oil in the blood. Now they must recollect that the oxygen inbreathed could not use up *both* the artificial and the natural fuel—and therefore the drinker clearly *lost* the difference in heat-value between the two. The reviewer knowing this, he, in citing Liebig to show that "Alcohol stands high as a respiratory material"—*suppresses* the sequel of the passage, which would overturn his whole argument: namely, these words—"ITS USE IS IRRECONCILABLE WITH THAT OF FAT." Now that which frustrates the use of natural food, and keeps oil and waste matter in the blood, by *robbing the blood* of the oxygen needful to decompose them, cannot be regarded *as* Food. He admits, indeed, p. 109, that *if* the oxygen be limited, *which it is*, and if the *coal* [i.e. *oil* and *effete* matter] should be consumed, *which it ought, then every drop of alcohol is an obstruction and an offence.* The reviewer juggles characteristically with the word 'substitution.' "Alcohol," says he, "evolves [heat] *force* in its combustion, *which is a substitute* for the [vital] force which would otherwise be evolved at the expense of tissue" (p. 111). Nothing can be more untrue. Alcohol causes *less* heat to be evolved—alcohol therefore opposes the nutrition and the oxidation of the tissues, and *prevents* the development of Nervo-muscular force. On this point, Liebig is explicit: he declares that a moderate quantity of wine produces a diminution of the force necessary for voluntary motion—that the circulation is hastened *at the expense* of the force available for voluntary motion. The reviewer, after admitting the danger, potency, and alluring, fascinating character of Alcohol, finishes by comparing it with a *Razor!* Do razors lure to suicide? Could any one deceive himself by such figures? At p. 113, after referring to tobacco, *carbonic-acid*, beer, etc., he says—"And these poisons we *accumulate.* It is clear that the organism must possess some *admirable contrivance* for *righting* itself, some method of eliminating *all these poisons* as fast as they present themselves. On this the moderate man may take his stand to *justify* his practice." So, according to this, men may sin because grace abounds! And the rectifying of a wrong, makes the wrong *right*, and 'translates' poison into food! He thought the very fact of expelling the *excreta* proved that they ought not to be *kept* in, much less artificially introduced. It was not the good, but the *bad* citizen that we expelled. Such is the logic of the Bottle! But was no harm done? On the contrary, Dr Böcker's experiments showed that a glass of brandy taken in the course of a day, actually *diminished* the quantity of carbonic-acid exhaled, to the extent of 165,000 centimetres. ‖ It was drawing too much on the credulity of the world now, to ask us to believe that *no harm* was done by foul-air, badly ventilated rooms or courts, tight drawn bed-curtains, etc., because we could not always *measure* the directly evil effect, or because some few were found to reach 'a good old age' in spite of them. A citation from Liebig referring to the *medical* uses of wine afforded another illustration of the *suppressio veri.* The reviewer, in quoting a passage about the Rhinegau, calculated to produce the impression either that Liebig ascribes *innocence* to alcohol, or the health of the inhabitants to its use, wrenches out these explanatory words—"SO HIGHLY FAVORED BY NATURE"! Thus the benefit of pure air, water, and climate, is transferred to the *alcohol*-in-the-wine! But in

Suppressed passages.

The *force*-fudge.

‖ See WORKS, vol. i.

that very part of his *Chemical Letters*, Liebig directly admits that alcohol is *injurious;* and the virtue of the wine in resisting, or partly neutralizing the alcohol, is attributed to the Salts of the wine,—a merit possessed by grapes in a still higher degree.

Concessions.

Fifthly, the reviewer virtually concedes all for which we need to contend, theoretically. Teetotalism is essentially a question of *health* and *diet*, not of the use of alcohol as physic in disease: and the *Westminster* distinctly says that alcohol in health *does* produce a disturbance in the regular current of vital action, and that it is "certainly of no use." He also admits that "*Alcohol is a very dangerous tricksy spirit*, needing the power of a Prospero to make it beautifully obedient." Now as few, if any, do possess this power—it follows that men generally can not make it obedient—which is exactly what the teetotalers have been teaching. "*Wine is a mocker*" still, as ever: which, by a physical potency, *tends* to increase the automatic impulses of humanity, and to lessen the moral control of the will. The only plea put forth by the *Westminster* for the use of alcohol, which he was not disposed to controvert, was the honest one of 'pleasure.' All other pleas were shams and hypocrisies—everybody knew that men did not seek wine *as* food, but for joviality and excitement—to do, in short, what food could *not* do. The plea that alcohol is food, however, could not stand—Histology repudiated the claim—Lehmann had distinctly rejected it from the dietetic category, while Böcker included it under the 'means of enjoyment'—and even the *pretence* would in due time disappear with the advance of knowlege in chemical physiology—disappear in the ratio that they made this question, a question of *Education*—and for the rest he must appeal to the National heart and the National patriotism. Duty was higher than Pleasure, and would, he hoped, be yet accepted as the lode-star of the people.—(Prolonged cheers.)

Dr Oxley, of Hackney, said he had been a teetotaler for 60 years, a portion of that time serving in the Arctic regions. He begged to move a cordial vote of thanks to the lecturer. Dr Ellis, of Sudbrook Park, seconded the motion.

Professor Carpenter's further remarks.

Dr Carpenter, in putting the motion, observed, that they could all judge of the pungency of the logic of the lecturer. The gentleman to whom the article in the Westminster was ascribed, plumed himself upon his logic, but they would agree with him in thinking that in Dr Lees he had met with his match. As for himself, he could say that he had listened, and in a criticising-mood, to the defence of the lecturer, and could bear testimony to the fact that it was sound physiology throöut. By way of supplement to the lecture, he desired to make two observations. The reviewer had said, that if their assertion of the carbonizing influence of alcohol were true, the blood of drunkards ought to be habitually venous. Why, gentlemen, *so it is;* not always as to color, but always as to abnormal amount of unconsumed *hydro-carbon* and waste matter. Rokitansky, in his great work on Pathology, had shown how this tended to produce fatty-degeneration of the tissues. The reviewer, towards the end of his article, admits the cogency of those sections of the Prize Essay devoted to the *comparative merits* of Food and Alcohol, in enabling men to sustain *extreme*

cold or labor. Now, if alcohol is found to be not only useless but injurious, when there is *most* demand for heat and force, how can it be either the *advantageous fuel*, or the *force-producer*, which its advocates assert it to be?—(Cheers.)

The motion was put and carried unanimously, as also a vote of thanks to the chairman.

Physiological Errors of Teetotalism.

To the Editor of the Daily News.

Sir,—In your report of the meeting of the London Temperance League, held at Exeter-hall on the 9th [8th?] ultimo [instant], for the purpose of answering an article in the *Westminster Review*, under the title of "Physiological Errors of Teetotalism," Dr F. R. Lees, the lecturer, states, on the authority of Liebig, that the action of alcohol in the system is to "*exhaust the oxygen in the blood*, to pollute and deteriorate the vital fluid, and gradually to destroy the organs of life." * Now, whatever may be the other objections to the use of alcohol, and to beverages containing the fluid, this one certainly does not hold good, for the chemical theory of Liebig (that alcoholic fluids produced their inebriating † and injurious effects on the human body *by consuming the oxygen*) has been long since exploded. Alcohol can only destroy the oxygen in the blood by virtue of the carbon and hydrogen which it contains combining chemically with it, and giving rise to two new compounds, namely, carbonic acid and water, the former a most deadly poison certainly; but inasmuch as *no such combination takes place*, the use of alcohol cannot be objected to on that account. ‡ It has been found by experiment that the administration of 24 drops of chloroform, a fluid compounded of carbon and hydrogen, will produce in the adult subject as great insensibility as 7½ ounces of absolute alcohol, or two bottles of port wine. Now if the inebriation, and consequent insensibility, depended on the consumption of oxygen in the blood, ‖ the injurious effects on the constitution should be much greater in the one case than in the other, for it must be evident that the 7½ ounces of alcohol must contain infinitely more carbon and hydrogen than the 24 drops of chloroform, which only

A Dr Davis announces the discovery of a Mare's Nest.

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* We said that alcohol robbed the blood of oxygen, or, in other words, uses up *what is naturally designed to consume the oil and effete matter of the blood*, which is consequently *retained* in the system to its injury. Lecanu states that in the blood of a drunkard, the quantity of *fat* was 100 in 1000 parts, or *eight* times the largest amount ever found in health; and Scharlan says that he found the total quantity of *carbon* in another specimen of drunkard's blood, 50 per cent more than the normal amount. In other words, alcohol tends to make arterial blood *venous*.

Fat in Drinker's blood.

† This word has no relation to the subject discussed.

‡ "No such combination takes place." Indeed! Will Dr Davis inform us what combination *does* take place? Or does he believe all alcohol comes out of the body as it goes in? If this were true, then the solitary argument of the *Westminster*, that alcohol is food because it is fuel, is cut away: and the reviewer is left without a leg to stand upon.

‖ But no one *has* made the assertion that the *insensibility* of drunkenness is owing *solely* to the chemical action of alcohol, or that there is *no other* agent of insensibility, operating physiologically. Dr Davis's '*therefore*,' is a *non sequitur*.

yield 4 grains of those gases, an amount totally insufficient to affect the immense body of oxygen taken into the blood through the medium of the lungs. I think, *therefore*, that the doctrine of the learned lecturer which teaches the *ill effects* of alcoholic beverages on the constitution depend on the consumption of oxygen in the blood, must fall to the ground. * I must confess that I would prefer the total abstinent to the "drunk and incapable" principle, but I feel perfectly convinced—that conviction, to say nothing of the usages of society from the earliest period of civilisation, being based upon 23 years' practice in the east of London amongst the middling and working classes—that all persons employed in occupations involving great wear and tear of mind and body absolutely require [alcoholic] *stimulants*, and that digestion and the various other functions of the body are better carried on under their moderate use than without them. †

Again, Dr Carpenter, in his opening address, states dogmatically that the flesh of animals is unnecessary for the food of man, inasmuch as grain, roots, and vegetables contain the same nutritious principles; but he has not stated that the amount of those nutritious principles is much greater in the former than in the latter—that the chyle manufactured out of the flesh is much richer in nitrogen, upon which muscular power depends, than that abstracted out of vegetables—and that an immense amount of the one food compared with the other must be taken into the stomach to yield the same amount of nourishment. *In despite of all theories, Nature has settled this question.* She has created vegetable feeders, such as the cow and the sheep; flesh feeders, such as the lion and tiger; and mixed feeders, among which is the human race; and she constructed their digestive apparatus accordingly. ‡ She never intended the lion to eat straw like the ox, nor the ox to eat flesh like the lion. Such theories as those of Dr Carpenter and Dr Oxley may serve to amuse; but what says experience on the subject? Go into the courts and alleys of London, and what do you find?—the poor, who are *badly fed*, dying af scrofula, consumption, and other diseases. Go into the country, and you find the laborers, who have no meat to eat, suffering from dyspepsia, heartburn, flatulence, and acidity of stomach. Look to the Registrar-General's quarterly report, and what do you find?—that when provisions are cheap, and the population lives well, disease decreases, and *vice versâ*. Fancy, Sir, an Englishman having bread, *lettuces*, and *radishes* forbreakfast; potatoes, *turnips*, and *onions* for dinner, and some more [green] vegetables for supper, and what would be his condition in the evening? ‖ More fit to take an aerial trip, *a la ballon*, than to go to

* Our doctrine is, that to deprive the blood of its due amount of oxygen, and thus to frustrate the purpose of its absorption, is *an ill effect*—not that it is the *sole* ill effect.

† When Dr Davis details the *facts* with sufficient fulness to constitute evidence, we shall be able to appreciate the value of what he calls his 'experience'; —but, unless he reasons much better from his own facts than from ours, we shall not be very highly impressed with the value of his 'conviction.'

Vegetarians.

‡ Dr Davis makes equally bad work in theorizing on vegetarianism. The nearest type of man is the Monkey—but it *is* frugivorous by Nature. Apedom, therefore, is opposed to Dr Davis; and the Leonine logic goes too far on the other side.

‖ Dr Davis seems deplorably ignorant, alike of the doctrine and practice of Vegetarians. He who has ever attended one of Mr Simpson's annual Banquets, or listened to one of his able expositions, must know that they neither advocate the poor being *badly fed*, nor are averse to *living well* themselves.

bed; and if Drs Oxley and Carpenter were called in to attend him in this condition, the former would, I am certain, order a stiff glass of brandy and water, the latter recommend him to have meat dinners for the future.—I am, etc.,

R. DAVIS, M.D.

Holly-Oak Cottage, Surrey, Oct. 12.

PHYSIOLOGICAL ERRORS OF 'MODERATION.'

To the Editor of the Daily News.

Reply to Dr Davis.

SIR,—Permit me to trespass for a few moments on your time, in reference to a letter which appears to day in your columns, signed "R. DAVIS, M.D." I do so with no intention of entering into controversy with your correspondent, but simply with the view of preventing you from being imposed upon by a series of extraordinary mis-statements of fact and of science.

FIRST, the language imputed to me is inaccurate. If he desire to know our theory of the effects of alcohol he had better refer to my published *Refutation of the Westminster Reviewer*, and he will then find that his comparison of alcohol with chloroform has nothing to do with the question.

SECONDLY, the theory of Liebig has been exploded by nobody, but now ranks amongst the most accredited and latest expositions of zoo-chemistry, as your correspondent ought to have known. I refer him particularly to Lehmann's great work. Dr Böcker's and Professor Scholtz's experiments show that alcohol retains a large quantity of effete matter within the system.

THIRDLY, your correspondent forgets that in my lecture I accepted the basis of the *Westminster's* argument, which was Liebig's theory. *He is, therefore, arguing quite as much against our opponent as against me.*

FOURTHLY, Dr Carpenter made no comparison between the relative values of vegetable and animal food. He simply said that the vegetable contained the same proximate principles of nutrition as the animal, and he might safely have said that some vegetables contain more of it than even beef.—I am, yours etc.,

Oct. 12, '55. F. R. LEES.

'Fruits and Farinacea' is the title of one of their best books—not 'Turnips and Radishes.' They are not so verdant as Dr Davis supposes—*green* vegetables being *not* mistaken for the *staff* of life.

A THIRD ANSWER TO THE WESTMINSTER.

By E. L. YOUMANS, Professor of Chemistry, New York.

OUR readers have already seen that the answers of Professor CARPENTER and Dr LEES are substantially the same as regards the chief fallacies of the Reviewer. It now remains to show that the Scientific writers of America hold precisely the same opinion of Mr LEWES's production as ourselves. In the New York *Weekly Tribune*, under date of September 15th and 22nd, 1855, we find two articles from the pen of Professor YOUMAN, which we reproduce, with some slight corrections.

I. *Alcohol is* NOT *Food.*

Alcohol not food.

§ 1. Certain principles of Food subserve the purposes of *Nutrition*, and are ultimately resolved into force by a decomposition of the tissues which they form. Other parts of food are devoted to Combustion for the production of heat [being burnt in the body by the action of the inspired oxygen], and are hence called *Respiratory* elements. The plastic aliments give rise to Vital-force—the respiratory to Calorific-force. The one class resolves itself into muscular motion, mechanical power, and nervous force—the other into heat and nutritive-force. Alcohol is incapable of nourishing the tissues; yet it is claimed that it may rank as a *respiratory aliment.*

Attributes of food.

§ 2. Of all the endless variety of organized substances which Nature produces, *those few only are adapted for food which are so bland and neutral in their powers*, and in chemical and physical properties so exquisitely adjusted to their purpose, that they may be wrought into the living system [or circulated there, and finally], decomposed and expelled from it, *without the slightest interruption or disturbance of the vital processes.* The breaking down and rebuilding of the body takes place at an equable, uniform rate. Oxygen gas is the agent, in contact with every part of the organization, [exciting organism to action, and] perpetually decomposing waste matter. On this measured, regulated combustion, this *vital-oxidation*, life depends. The Infinite Chemist has graduated with omniscient exactness the reciprocal powers and affinities of the gas we inhale and the food we digest. * The natural rate of rëaction constitutes the equilibrium of *health.* If this be disturbed, derangement of the physical and moral powers is the consequence. If we *reduce the oxygen* below its normal point, as by breathing over and over the air of a close room, all the life forces are depressed. Or if *nitrous oxide* is breathed, containing an 'excess' of oxygen, and being very soluble in the blood, there is a preternatural exaltation of all the functions. But, by supplying to the blood *matters which are more combustible than ordinary food*, the effect is precisely the same—the functions of the fabric are quickened to an unwonted

* See Dr Lees' *Fallacies of Professor Johnston.*

speed, and we have a result which simple food is totally incapable of producing. * Such is the case with Alcohol.

Alcohol *too* combustible.

§ 3. Being an artificial compound, not brought into existence by the Hand of Nature through constructive growth, but coming by the route of organic decay,—coming *from* food by a decomposition which destroys the aliment,—the presumption is strong, that this factitious principle can *in no just sense* be classed with Foods. But when we examine its properties, the case becomes still clearer. Among the aliments which nature prepares, she has established *a fixed gradation of combustibility.* For the utmost natural necessities of the system in the way of calorification, nature has provided [a certain quantity of] Oleaginous compounds, rich in hydrogen. But in alcohol this combustible element is in still greater excess—*quite beyond the limits assigned by nature for our physiological necessities.* Now, when we consider that the fundamental event of the animal œconomy is the introduction and diffusion thröout it of Oxygen gas,—and that all the complex functions of the living being flow from this vital, combustive process—it is perfectly evident that any alteration of the *natural conditions* under which respiration is performed, can only be attended by peril and mischief. ALCOHOL, by its high combustibility, *prevents the aim of respiration, establishes a new order of changes, scatters excitement and discord thröout the organism,* developes the noxious products of decomposition with unusual rapidity, then, by using up the oxygen which *should* have acted upon the natural food and tissues, puts a stop to their healthy changes, and contributes to *detain* in the system waste materials. It is not food that produces such results, but food wickedly changed by the devices of art. Alcohol *does not behave in the system like a true dietary principle,* but *as a disturber of the physiological harmonies.*

§ 4. To say that alcohol evolves *force* in the system, is nothing. The question is—What *kind* of force?—*in what way* produced or evolved? [At what expense?] Milne Edwards injected Phosphorus dissolved in oil into the veins of an animal; it escaped thrö the lungs as phosphoric-acid—burnt phosphorus; it was therefore translated into heat-'force,'—but is *Phosphorus* therefore not poison? Nitrous oxide when inhaled, evolves force—yet who is simple enough to believe *that laughing-gas is food?*

§ 5. The Reviewer argues that alcohol *is* food, because it is capable of *replacing* food—and quotes two cases where less food was *used.* Admitting that spirits allay the appetite—so that less than the usual nourishment is taken—it by no means follows that they are *themselves* food. Fright may *thus* act—may even temporarily increase bodily-force—yet we can hardly consent to identify mental emotions with food. Foul air will replace food. † Manufacturers have refused to ventilate on account of the augmented expense of boarding their hands. Proprietors of Eating-houses who had introduced ventilators, have afterwards sealed up their ventiducts rather than advance the price of

* [Save under extraordinary circumstances, as when beef-tea is taken after protracted fasting, etc.; the subjective *factor* in the effect being abnormal.]

† [*Replace* is not the *right* word. *Displace* is nearer the truth.]

meals. Vitiated air thus *supersedes* aliment: shall it therefore be ranked amongst Foods, in order to give it all possible 'respectability,' and furnish an apology for vicious habits of breathing?

§ 6. If we appeal to the universally recognized effects of food and of alcoholics [respectively], the same conclusion is reached—that Alcohol is *not* food. Even the Reviewer has borne testimony to this point. Of what aliment which Nature has furnished, can it be said that it justly has a bad reputation—that it is 'a tricksy, dangerous spirit'? Such language is descriptive of anything but Food. Can it indeed be seriously contended, that men *do* procure and drink alcoholic liquors *as food?* Is it really 'nutrition' people are seeking in wine, beer, or brandy? *Is it not to obtain results which food is totally incapable of realizing, that these liquors are sought and prized?* *

Alcohol differently treated from food.

If the essential relation of Alcohol to the Human constitution be *not* that of an injurious agent,—if it *be* truly and intrinsically an alimentary principle,—*how comes it to pass, that, for hundreds* [thousands] *of years, it has forced itself into universal legal notice*—has been an object of marked and peculiar legislation,—has taken a separate and independent place on the Statute book, and been honored [or literally reprobated] by a jurisprudence of its own? It amounts to nothing to say that the 'abuse' of Alcohol has compelled Society to frame restrictive-laws for the control of its commerce. Foods have also been abused, but when has Society been compelled, in self-defence, to legislate against evils springing from this source? If Alcohol were food, it would follow the *law* of Food, and get the *treatment* of Food. Used with a different design, having *different properties*, and, as the whole world can attest, producing different effects from food, we protest against this *sophistical* attempt to improve the character of Alcohol in popular regard by associating it with food, and thus adding plausible-reasons to the bad-motives already existing, for its common employment as a beverage.

II. *Alcohol* is *Poison.*

§ 1. At the outset of the Temperance movement, thirty years ago, its advocates called emphatic attention to two facts:—*First*, that by all Chemists, Physiologists, and Toxicologists, who had experimented, studied, and written on the physiological action of various agents, and who therefore, it was presumed, best understood the subject, Alcohol was ranked as a Poison. And, *second*, that intoxicating liquors contain alcohol in common, variously diluted with water, but in no way altered in its essential nature or properties. Believing these facts, the advocates of reform demanded that the public should consider the question, and treat alcoholic liquors as *poisonous*. The devotees

* [Mr Lewes must surely have had his philosophy suggested by the slang phrase of jovial fellows—'*over nourished*'! His article is this very idea 'long-drawn-out.' Men drink *after* dinner, not *instead* of it, knowing that as alcohol will not replace Food, *so Food will not replace Alcohol*—will not enkindle those '*fiery flames of exaltation*' and create that initial jovialness at which all aim, but that leads so often to the stage of 'tipsy jollity,' and then, with thousands, into the revel and riot of a debauchery which taxes and curses the community at large.]

of Bacchus made many noisy protestations against so characterizing the contents of their favorite cup, tho they have been extremely diffident in offering *reasons* against its justice. But as the current of thought gradually cut deeper channels in the public conscience, and *Society begins to carry out its convictions into effective measures of relief*, the adversary is driven to make the best possible defence. He finds at last that this temperance warfare is no sham-fight. In this crisis, the *Westminster Review* comes thundering to the rescue, with a *vast parade of Science*, and the fainting friends of Alcohol take heart. But it is all in vain; whatever may be their numbers, or skill, they are doomed to be vanquished, for their cause is unholy. Alcohol is poison.

§ 2. The leading purpose of the Reviewer is to relieve Alcohol from the odium which attaches to it as a Poison, and procure for it the consideration which belongs to Food. He attempts to prove that it *is* Food, and then *infers* that it is not Poison!

We have disposed of his claim to regard it as Food. Whatever it may be, it certainly is *not* food. That its sale has long been signalized by special Governmental trammels and restraint, proves that it has not the character of food. But if not aliment, what is it? No one can suppose this agent to be inert. How then, in relation to the living system, shall it be characterized, grouped, classified?

§ 3. We know of but one word in the language descriptive of its effects, and that is *Poison*.

WEBSTER defines a poison as "any agent capable of producing a "*morbid, noxious*, or *dangerous* effect upon anything endowed with "life"—[otherwise than by mechanical action]. That the influence of alcoholic liquors is *morbid* and *noxious*, who can deny? That alcohol *does* produce 'morbid' effects in so decided a degree as to be *dangerous*, the Reviewer himself bears testimony. But it is objected that Alcohol is not 'intrinsically' a poison! This is an old trick. The Rip Van Winkle of *Westminster* attempts to re-animate a contest that was settled a quarter of a century ago—so to discriminate between the limited and excessive use of Alcohol, that, while the latter is repudiated, the former may be commended. To all this we reply: *Alcohol is a poison for the same reason, to the same extent, and under the same limitations, as other poisons*—and the temperance reformers have never claimed anything else. They only take Alcohol as they find it, catalogued with this class of substances [by Orfila, by Christison, by Hooper, and by Dunglison, along with Strychnine, Henbane, Foxglove, etc.]—*no more really a poison than they; no less really so than they;* just as essentially and intrinsically a poison as any other is, or can be. *

That it produces different kinds of effects when taken in different quantities, is not doubted; and the same is true of all other poisons. If alcohol be not 'essentially' a poison, then there is no such thing as essential poison.

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* [Dr Carpenter, in *Scottish Review* for January, 1856, has drawn out a parallel between Arsenic and Alcohol, establishing the same position. In Dr Lees' *Reply*, p. cxxi, a similar parallel is drawn between Opium and Alcohol.

§ 4. Any *hocus-pocus* of definition by which Alcohol can be relieved of this character may be applied with equal success to juggle out of the list any other poison whatever. A sufficiently small dose of liquor produces no perceptible effect, and this is equally true of arsenic, prussic-acid, etc. Slow and chronic poisoning by alcohol [*alcoholismus chronicus*] is as really a fact of medical observation as with arsenic, lead, phosphoric vapor, etc.

§ 5. Like all other poisons, alcohol may be given as a medicine to combat diseased conditions, but the powerful qualities which give it value in these cases are equally potent on the healthy organism. If it is not a medicine, it will be a poison. Its highly combustible and stimulant properties are in no respect *replaceable* by food.

For these and other reasons, it seems preferable that alcohol should retain its old associations, and not be suffered to be baptized with a new title into a more reputable communion.

§ 6. As if, after all, with a lurking apprehension of the invalidity of his argument, the Reviewer asks, "And even *if* alcohol is a poison, would it deserve *all the harm* said of it?" Every one with an eye to see and a heart to feel, is qualified to answer. The people of this country are replying by States, and at the present rate of progress it will not be many years before all Christendom will confirm their decision.

THE LOGIC OF THE LEADER.

The Pathology of Drunkenness: by CHARLES WILSON, M.D. A. and C. Black, Edinburgh. 1854.

THIS neat little book is a classic one on the subject whereof it treats, and can scarcely be too universally read, or too warmly recommended. It is at once *thoro*, and up to the latest tide mark of discovery and experiment in relation to the pathological effects of *alcohol*. Its *thoroness*, we perceive, has excited the ire of the *Leader* newspaper, a paper which has often taken occasion to sneer at teetotalism, but which now (No. 259, March 10) affects a formal refutation of what it calls our 'nonsense.' Let us see whether the *Leader*, itself, is not guilty of 'nonsense,' and of something worse. Hear what it says!

How the April *Leader* reasons like the *Westminster* in July.

1. "Dr Wilson writes of *intoxication* and its 'causes and consequences, learnedly, tersely, and with perfect propriety; but the moment he approaches the widely-different subject of Temperance, he follows the example of *all* writing and talking teetotalers, and seems, in a quiet Scotch way, almost to take leave of his senses. ... The effects of a *strictly temperate* indulgence he thus sums up:—'The diffusion of an agreeable [sensation of] warmth; the action of the heart invigorated; the voice becoming full and sonorous; the eye sparkling; every motion accompanied with a consciousness of elasticity and vigor.' So far so good. Our own personal experience during many years *temperate enjoyment* of ale, wine, and grog, each in their due season, testifies to the truth of the above passage."

Now, in a quiet English way, we must beg to remind the *Leader* that every word of his apology is just as fitting in the mouth of a Turkish *opium* eater, as of a British grog drinker. Opium, like alcohol, produces *all* the effects described. It is easy to prefix the word 'temperate' to either practice; but that does not *make* it temperance. True temperance is *adaptation* to the organ—but by Dr Wilson, and others long before him, it has been shown that alcohol *has no* adaptation to the dietetic wants of the body; and its use, therefore, is *not* temperance.

2. "We soon find our *moderate elation* qualified by such a bitter epithet as *transitory*,—as if *all* human elations were not transitory,"

This is something worse than nonsense—it is deliberate evasion, and *therefore* virtual misrepresentation. * Dr Wilson's argument is ignored and an incident of it substituted for it; for while the adapted

* This critique on the *Leader* appeared in the Bristol *Temperance Herald*, April, 1855. The Leader's *alter ego* in the *Westminster*, three months later, pursues the same course, notwithstanding our distinct protest.

excitement of health, after the use of food, is 'transitory'—yet food *gives* a fund of strength greater than that which it expends, and *hence* the gain—but alcohol only borrows a *transitory* use, leaving the system so much *below* par. That is, it either expends the *actual*, or the *reserve*, force of the constitution—it mortgages either the present or the future. That such is the fact, as well as law, a vast EXPERIENCE establishes. The constitution of the abstainer from even very *moderate* quantities, rises in elasticity, and he becomes, from the accumulated, œconomized force (what the schoolmen called the *vires in posse*) less liable to disease, because possessing more of the conserving and resisting power. The *Leader* has only tried one side,—*we*, and millions more, have tried *both* sides.

Experience.

3. "Even old age must not try and keep the *lamp of life* alight by pouring a *little* spirit in, *temperately* [what sort of a 'pouring' is that?] from time to time, as the flame flickers."

Senility may defend wine, but wine will not help senility. The fact has long been distinctly proved, but the *Leader* finds it convenient to ignore proofs which it cannot confute, that the flame of life (that is, the heat and purity of the blood) burns *most brightly* in the atmosphere of abstinence. The blood is colder, not warmer, after the use of alcohol, and nervous force is wasted by its use.

Dr Wilson affirms *a peril* in the use of intoxicating drinks, which is, "*but too frequently*, merely *a state of transition* towards the formation of propensities of a more marked character." To us it seems certain that men *do* become drunkards *by degrees*, or transitionally; and even if only half the number did so who actually do, it would be far *too* frequently the issue to allow us to look on the event with the *Leader's* placidity. Moreover, does the writer mean to assert that alcohol is exempt from the *tendency* of all other narcotics?—that of creating an appetite for their use? Does he mean to affirm the palpable falsity that the drunkard's appetite is *not* created by the use of the physical stimulant? Does he mean that some 'abstraction' has altered the nerves and brain of the drinker, and that the *drink* has not? If not, why dispute the truth? He next tries to lessen our estimate of the extent of the evil.

4. "Let us roughly divide temperate drinkers into two great classes—the *rich* and the *poor*; and let us judge the rich by dinner-parties, and the poor by gin-shops. The *majority* of guests at all dinner parties are moderate drinkers—how many of them acquire a habit of getting *drunk* after dinner? Why, drunkenness is hardly known in 'society' now,—the vast majority, *year after year*, [are] elated and satisfied with *fit*, temperate allowance."

First, 'dinner-parties' are not at all a fair test; second, getting *drunk* at dinner is neither the only proof of the proposition, nor the only *evil* of drinking to be removed; third, the alleged or real absence of 'downright drunkenness' by no means proves alcohol to be *fit* for natural and temperate use. The *Leader* evades a mass of evidence of the physical *un*fitness of alcohol as diet, by carping against what it calls extreme arguments; it attempts to prove alcohol to be *good*, by contending that in very small doses, very nicely timed in circumstance, it is not *so very bad!*

Our social state.

'Society,' however, is by no means so pure as the *Leader* endeavors to persuade itself. It may shut its eyes to facts patent to others, but the facts remain. Look at any general circle you please,—take twenty persons in that circle, and watch their history, *year after year*, for twenty years,—and tho the majority will not get *drunk* AT *table*, how few of the twenty will be able to say that they have not in that time occasionally exceeded, and how still fewer will exhibit exemption from a deteriorated moral tone, induced by our convivial customs. In the literary circles of London and Edinburgh, as elsewhere, we could point to many sorrowful illustrations of impaired moral tone, as well as of health. In the political circles we have still more examples. In college circles not less; and in military and naval circles witness recent exposures. The *Leader* wishes the public to imitate the instinct of the ostrich, and to extinguish disagreeable facts by putting its head under a bushel, where it will not *see* them!

Our social state.

Fashionable drinking.

5. "Are the regular customers at gin-palaces, the thousand, thousand artizans who fetch their *jug of beer* for supper, *too frequently* drunkards? All the *im*moderate drinking is ferreted out by the teetotalers, and all the moderate drinking is quietly passed over."

This is not true; for of moderate drinking, at any time the chief practice, we ask, *cui bono?* We prove it to be the occasion of half the sickness of the community, and other connected evils. Why does not the *Leader* answer facts? Simply because it can not. It is content to reason with words, for it has nothing stronger.

But we, who *are* acquainted with the people by constant intercourse and visitation for the last twenty years, know that *a vast proportion of them* spend their hard-earned wages, and thus waste their means of social elevation, upon that drink which is *not* bread, and which, *too frequently*, perhaps in the course of years to the extent of one half, becomes the generator of occasional excess, or downright drunkenness. At any rate, whatever the proportion, it *produces* two-thirds of our pauperism and crime, at the very least. But this is nothing to the *Leader* and his friend Job Smith!

6. "Job Smith is a moderate drinker, notoriously *never* intoxicated. No matter, let us talk and write at Job just as if he was Sloggins.

Rare Job Smith.

This is another perversion of the *Leader:* no one writes of Smith as if he were Sloggins. Such confusion we leave for the *Leader*. But we ask the *Job* of the *Leader*, if he has any sound physiological reason for taking his pint of beer? and if not, whether patriotism might not impel him to abandon what is unnecessary, at the least, for the sake of but *too many* Slogginses? Whereat, our modern Job, unlike the ancient one, loses all patience, flies into a passion, misrepresents his neighbor, and swears that we have *not* 'too many' Slogginses!

The *Leader* ignores the fact, that 'the *elation*' for which he pleads, is an unnatural 'elation,' produced at the expence of *disturbance*, and which, as the experiments of Drs Vierordt, Davy, Naas, and Böcker clearly demonstrate, vitiates the stream of the vital circulation, and interferes with the higher mental functions and social purposes of life.

THE REVIEWER'S RESPONSE.

The *Westminster Reviewer* attempts a defence.

MR G. H. LEWES, the author of the article on the Physiological errors of Teetotalism, in the *Westminster Review*, has attempted to defend himself in his capacity of Literary Policeman of the *Leader*, a London Newspaper of limited circulation. Singular to say, however, he abdicates his avowed police function, refuses to take *us* up—alleging we are "beneath *his* notice"—but does arrest (on false pretences) our coadjutor. To show that *we* bear no malice, and affect no contempt, we reprint all he has said *in extenso*—word for word. We assure him that *he* is not beneath our notice. He is the very game we like—and while we regret that he should skulk away, instead of meeting our attack, we promise never to give up the hunt until the Fox is earthed. He thinks Dr Carpenter difficult to deal with: we think Mr G. H. LEWES very easy to deal with. It would not be at all hard to pursue all his *windings* and *turnings* over the course: the workings of his mind are perfectly transparent; and the very motives of his fallacies as evident as the choleric condition in which our *Refutation* has put him. We subjoin notes by way of correction:—

[*Article from the Leader of Dec.* 1, 1855.]

CRITICS ARE NOT THE LEGISLATORS, BUT THE JUDGES AND POLICE OF LITERATURE. THEY DO NOT MAKE LAWS—THEY INTERPRET AND TRY TO ENFORCE THEM.—*Edinburgh Review.*

The *Leader's* billingsgate.

IT is an old remark, that men professing the most ardent desire for the moral reformation of others are singularly unscrupulous in their employment of *im*moral means. "To lie for God" they do not think unworthy; it is a pleasant way of indulging malevolence, and at the same time forwarding their own views. The weapons of fanaticism are wielded with a fury which, by calling itself virtue, shuts out all remorse. The weapons of fanatical polemics are such that the combatants would blush to wield if unsanctified by a 'purpose.' Religion, however, is by no means the only instigator of fanaticism. Political rancour is almost as unscrupulous. * Any opinion which aims at bettering the moral condition of the rest may become a cruel watchword. Even a theory so far removed from theological doctrine as Teetotalism, becomes, in some fanatics who accept it, and in many quacks who live by it, a crusade against all oppo-

How a *Leader* may lie for gold.

* Why not add, Literary *cliquism*, or literary rivalship; or the spirit of positive Philosophy, so often exhibited in the *Leader's* reviews? Hatred, no doubt, is excited in many ways, and has endless manifestations. But what has that truth to do with our exposure of the various fallacies, misrepresentations, and blunders of the *Westminster Review*? Our language has nowhere equalled in severity, that of the Reviewer and the *Leader*; but we have accompanied our characterization always with the *proof*. The *Leader's* present articles justify all that we have uttered. He has in this matter played the part of a literary *Dousterswivel*,—a part utterly unworthy of the author of the *Life of Göthe*. Let him follow Biography, but shun Science. He has enough brilliancy for the one, but neither depth nor breadth for the other.

nents, as rancorous as Methodism: the same foolishness is envenomed with the same unscrupulousness; in both the exercise of reason is imputed to bad motives.* Teetotalism *has* advocates and followers to whom these observations in no sense apply; men as sincere as they are benevolent, as charitable as they are sincere. But the paid advocates, † the ranting lecturers and pamphleteers, are as reckless and intemperate as they are absurd. In America the doctrine has become an instrument of tyranny. In England, if we judge from the writings we have seen, the same spirit is at work. ‡

Proletarian sneer at rewarded services.

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* No doubt there are fanatical Teetotalers, as well as fanatical Infidels or French-philosophers: but what has that again to do with those who are *not*? If Dr Lees, selected by the Temperance Body as their representative-man, has put forth *fanatical doctrines* and *foolishness* in answer to the *Westminster Review*—so much the worse for them, and so much the better for the Reviewer. Why did not he refute the real, accredited Teetotalism, if he felt competent to do it? Why did he not expose the Rant and Quackery, when he had it before him? All he *does* is to "blackguard defendant's counsel"! The *Leader's* readers must be stone-blind, if they do not see thrö so stale and vulgar a proceeding. The fact is, the Reviewer has lost his temper, and writes under intolerable irritation. At page lxxiv of our exhaustive *Reply*, we predicted that he *would* not even attempt an answer—and we assigned the reason.

† A word as to *paid* Advocates. Who is *not* paid for his services? Is Prince Albert not paid? Are the Bishops and Clergy not paid? Are the Ministers of State not paid? Does not Mr Lewes himself get something for writing ordinary articles in the *Leader*,—did he not get something *extra-ordinary* (from *extra*-publishing sources) for the very laborious and peculiar article in the *Westminster*? If he did not, he certainly deserved to do—for besides his ordinary talent, it displayed immense labor and ingenuity in excluding facts and fabricating opinions—as we have fully shown. Now what we want to know is, *Why* Mr Lewes never assails Prince Albert and men high in Church and State, with the *vulgar sneer* which he hurls against the Teetotalers? Why not, in these cases, also appeal to the *selfishness* which desires services for nothing? Where is his bravery? He either bows down to Mammon, Convention, and Power *there*—or he reveals a mean and despicable passion in using that weapon *here*. On which horn will the *Leader*—the ranter against Emancipationists and Methodists—be impaled? With the *Leader*, the use of such words (abuse by insinuation)—as 'intemperate,' 'ranting,' 'paid advocates', 'reckless,' has become a perfect *cant*. We have long been accustomed to translate such language into its true meaning—"We cannot refute: *therefore* we revile."

Slang.

‡ So much for *general* disquisition, as to the state of things in America. If the same spirit is at work in England, it is a pity—and the *Leader* would have done good service to the great cause of Temperance by showing that its accredited expounders in Exeter Hall *were* guilty of this Tyranny. If not, this elaborate introduction is both impertinent and unjust. We beg to inform Mr Lewes, also,

The Teetotal doctrine was examined in the *Westminster Review* for July, in an article entitled "The Physiological Errors of Teetotalism," which, to judge from the uproar it created among Teetotalers, must have made them very uncomfortable. * When a man howls, we presume he is hurt. When public meetings are convened in the country, and Exeter-hall is hired in London, for the express purpose of answering an article, we may suppose the article to have some importance in the eyes of Teetotalers; yet, if we are to judge from the *Exeter-hall Manifesto*, all this hubbub has been about a very weak and ignorant production. † The principal speakers at Exeter-hall appear to have been

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that the Drinkers, Brewers, and Publicans, both in America and England, have *their* paid Advocates—not only writers in Reviews, Magazines, and Newspapers, but also Public Lecturers, as Mr Beebee of New York, and Mr Oxford of Leeds. || Their advocates and agents are also found in Parliament and Parliamentary Committees: as in Mr Cobbett, Mr Berkeley, Mr Alderman Wire, etc., etc. Did Mr Lewes ever peruse any *anti*-teetotal speeches and writings? If he takes the trouble to do so, he will find some of the lowest and vilest abuse ever uttered. When did *we* throw the sins of that party upon the *Leader* or the *Westminster*? Our method is to meet specific charges with specific proof; to make each writer responsible for himself alone; and not to insinuate general errors against particular individuals.

|| Whose bills are headed, "*Teetotalism the offspring of Cowardice, Avarice, and Self-mortification.*"

* Mr G. H. Lewes *knows* the contrary. We transmitted to him in July, the notice taken of the article by the British League Convention at Bradford, in which we, Dr Beaumont, and others, spoke of the article as the most subtle, and *least* abusive, that had been written against us—and in the publication of which we rejoiced as the best thing that could happen to us. We *wanted* our opponents to stir the pool of discussion, and therefore gladly accepted the article as a *target* to shoot at—for *our* amusement and the public instruction. We even paid a compliment to the author—not detecting, at a hasty, first perusal, the various *suppressions* and *studied misstatements* which became apparent on a second and critical reading of it: the subsequent exposure of which has so irritated the reviewer. It is quite true, that when a man *howls*, we may presume that he *is* hurt. It is however the *Leader* that is 'howling,' not ourselves. He howls, because he cannot *bite*: and he cannot bite, because we have extracted his fangs. While *he* howls, *we* laugh—for we can not help it. We do not remember ever enjoying ourself more than while engaged hunting out the fallacies, and exposing the frauds, of the *Westminster Reviewer*. We have no pleasure, indeed, in *his* pain—tho the pain he feels is a just punishment—but we will not conceal the fact that, while writing our Refutation, as fallacy and *Foxy* fraud, one after another, came in sight, we pursued them with an exulting *Tally-ho*!

Which is the dog that howls?

† *We* did not call the article weak and ignorant. On the contrary, we differ from Dr Carpenter. Where he *charitably* ascribes fallacy to ignorance, we ascribe it *chiefly* to design. The reviewer blunders indeed, now and then, as we suppose all men do, but we can pardon a blunder, if there is nothing worse behind. That there *is* something

Dr CARPENTER, whose arguments the article exposed, and Dr LEES, a Teetotal lecturer. We have read the speeches with surprise and pain: surprise that so poor a defence was all they could make, pain at the thoroughly unscrupulous tone. Dr LEES is altogether beneath notice. *

Discretion the better part of valor.

Dr CARPENTER came forward, and boldly told the meeting that the "Reviewer, whoever he may be, is certainly no scientific physiologist." Such an assertion, publicly made, and by a man claiming to be "a representative of physiological science," demanded some *evidence*. All the evidence he thought proper to adduce was confined to two illustrations, which, on examination, turn out to be blunders of his own. † Here is the first:—

"The reviewer alleges that his [Dr Carpenter's] argument, that alcohol "*carbonizes* the blood, would be unanswerable but for one little oversight— "that the supply of oxygen to remove the carbon is really *un*limited. Truly "the supply of oxygen *in the air* IS unlimited, but the supply *in the blood* is "limited, as the Reviewer will learn when he shall study the A B C of "physiology."

Had Dr CARPENTER, in his other writings, manifested *less* inaccuracy and confusion of thought, we should wonder at such a misconception of the Reviewer's argument as is implied in the foregoing criticism. The *Review* lies open before us, and, if we understand the English language, the meaning of the passage does *not* point to the blood, which is never mentioned, and which, indeed, could not have been alluded to in that argument: ‡ indeed, that

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far worse, see our proofs. If the *Leader* had no scruples in misrepresenting, and in suppressing, Truth—we can have none in *exposing* the iniquity. We can not deal out charity at the sacrifice of sincerity.

* This is very characteristic of Mr Lewes. 'The force of *impudence* can no further go.' Dr Lees, as the representative of *Teetotalism*, is before him—an exhaustive Refutation of 60 pages is published—and the convenient and discreet answer is—"Dr Lees is altogether beneath notice"! We point out *his* blunders, misstatements, and suppressions, and his answer is—"We are surprized at so poor a defence—it is beneath notice"! Why, then, did he notice the subject at all? This justifies all we have said of this most unprincipled writer; he fabricates a *fictitious* teetotalism, but of the real one he says—"It is beneath notice"! Was ever evasion more pitiable? His surprize is as *affected* as everything else. If Teetotalism is the thing he represented, (a mingled *blunder* and *fraud*)—what *sound* defence *could* he expect?

A *short and easy* method with the Teetotalers.

† It was *not* all the evidence adduced by Dr Carpenter (see his letter further on): tho it *is* all that was given in the bare outline of the 'Proceedings,' to which the *Leader* prudently confines attention!

‡ No one said it *was* alluded to: Dr C.'s argument is that a real physiologist could not have FORGOTTEN the fact: while our position is, that it was *omitted* to be named—not overlooked: for the supply of oxygen *in* the blood being *limited*, to recall this fact would have been to destroy the reviewer's argument. (See the *Review*, p. 109; and our *Reply*, p. xciii.) Observe in our citation from the Reviewer, *we* did not attempt to prove it—we simply added after 'limited,' the words [*as it is*]. The *Leader*, then, is really trying to mislead attention—and thus escape in the confusion he has created!

The Sepian ruse.

a *limited* quantity of blood could not contain an *unlimited* quantity of oxygen, we suppose must be patent even to a logician of Dr CARPENTER'S calibre, who nevertheless undertakes to *prove* this self-evident proposition! He adds:

"The quantity taken in through the lungs is as strictly regulated by the "degree in which the external temperature is below that of the body, as the "draught of Dr Arnott's stove is restricted by its regulating thermometer. "This is how it comes to pass that—as the general experience of foundrymen, "glass-blowers, and other men working in very hot places fully proves—if "they drink of alcoholic liquors *while they are at work*, they soon pay the "penalty in a loss of muscular energy; their supply of oxygen, already cur- "tailed by the high temperature, being further reduced by the amount taken "away by the alcohol for its own combustion." ‖

‖ From *Scottish Review*, Oct. 1855.

It is singularly unfortunate for Dr CARPENTER that, in trying to prove a self-evident proposition, he has committed himself to a statement inaccurate in respect of fact, and to a deduction from that statement at which physiologists will smile. It is *inaccurate to say* that the quantity of oxygen absorbed by the blood depends solely * on a simple relation of temperature; every physiologist knows that it depends on the state of the organism (its temperature being one state): for example, *less* oxygen is absorbed during the hours of digestion than during hunger, † *less* oxygen is absorbed if an extra quantity of sugar be present in the blood, and so on. Moreover, the question of temperature has no place in the dispute between him and his Reviewer as to whether alcohol carbonizes the blood; and to cite glass-blowers in illustration of the *normal* effects of alcohol, is as logical as to cite the Black Hole of Calcutta to

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Mr Lewes forges a blunder for Dr Carpenter.

* Dr Carpenter did not say '*solely*.' This word is foisted in by Mr Lewes. The 'blunder,' therefore, is his own, if it is not worse than a blunder. The external temperature may be a *strict regulator* of the quantity of oxygen absorbed, without being the *sole* regulator. So again, Mr Lewes forgets the fact (if he knew it), that the use of alcohol *in small doses*, as proved by Böcker, is another condition which *strictly limits* the capacity of the blood to absorb oxygen. As Liebig says (*Animal Chemistry*, p. 228), "the number of degrees of heat liberated in a given time, bears a *definite proportion to* [or is strictly regulated by], the number [and state] of *blood corpuscles* which have passed thrö the capillaries in the same period."

† This is not truly stated. The amount of CO^2 (carbonic-acid) *exhaled* during digestion is *certainly not diminished*. (See Lehmann.) Now if more oxygen *is* absorbed *before digestion*, what becomes of it? We know indeed that animals *kept fasting* absorb more oxygen; and for the reverse reason that with much sugar they absorb less. The hydrogen of the sugar has *already* its equivalent of oxygen: but the *flesh* of its own body being oxidized *in fasting*, the same thing *then* happens as if it lived on flesh-food: there is a *surplus* of hydrogen, which *absorbs* an equivalent of oxygen to form water. That happens with flesh-eaters, whether *hungry* or not. So our critic puts an accident for an essential! It is certain that other things being the same, *less oxygen* is absorbed immediately before dinner than an hour after. Mr Lewes states even his facts misleadingly.

prove that breathing carbonises the blood. * But this inaccuracy and confusion lead him to the assertion that glass-blowers lose their muscular energy if they drink alcoholic liquors while at work, *because* they thereby curtail their supply of oxygen. Any one but a Teetotaler would suspect that the loss of muscular energy was owing to quite other causes. † The glass-blowers, already *over*-heated, add *more* heat in the shape of alcohol; already *over*-stimulated, they add *extra* stimulus, and pay the penalty, just as a man who has already sat up one night will pay the penalty for sitting up the night following, or one who having fatigued himself with a twenty-mile walk adds ten miles to it. ‡ But the idea of the glass-blower "limiting his supply of oxygen" by drinking alcohol, is absurd. § The oxygen is supplied from the air, where it is in *unlimited*

Douster-swivel-physiology.

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* Fudge! The *Leader* admits in his second article that it was an 'illustration' of the statement going before it—which statement, being true, upsets the original argument of the Reviewer, by proving from his *own* premisses, that alcohol is an obstruction and an offence. Alcohol *has* no 'normal effects': they are all abnormal.

† Liebig, however, who is very far from a teetotaler, explains the matter *as* the teetotaler does. (See our *Reply*, p. xcvii, note.) It is a case of Liebig *versus* Lewes, quite as much as one of Lewes *versus* Teetotalism.

‡ It is not a case at all like this: it is rather the case of one who has inhaled a little dose of *chloroform*. The thermometer, and the diminished exhalation of carbonic-acid after the use of alcohol without increase of perspiration, demonstrate the FACT (no matter how Mr Lewes may asseverate the contrary) that the glass-blower is *not so warm* after its use as before.

§ *Is it?* Then are *facts* absurd. For it is a fact that alcohol increases the proportion of fat, and lessens that of the corpuscles in the blood—which corpuscles have the function of more specially absorbing oxygen. It is a fact also that alcohol diminishes their capacity for doing this. It is another fact that alcohol, by its disturbance of the nervous system, diminishes the respirations of the lungs. It is still another fact that less *excreta* is expelled from the body after the use of alcohol—and *therefore less oxygen absorbed*. If Mr Lewes did *not* know all this, he is ignorant of the subject—if he *did* know it, he is —what we judge him to be. He had just shown that the free-use of sugar *limits* the absorption of oxygen. Why? *Because* sugar already has its hydrogen combined with oxygen. Now oily and effete elements of the blood *would absorb* (if permitted) 512 volumes of oxygen; where Brandy would absorb only 181 volumes; if, *therefore*, the law as in the case of sugar, holds good—to *displace* the natural by the artificial element, is to lessen the absorption of oxygen very materially. By the way, the experiments of Dr Pavy prove, that "so soon as the blood had lost its *vital characteristics*, oxygen is no longer capable of exerting any metamorphosis on its saccharine ingredients." Now one of the arguments of the Reviewer is, that alcohol *retards* vital changes, and Böcker has shown that it also *de*vitalizes the blood: whence it follows that in this way, also, alcohol interferes with normal respiration.

How alcohol lowers the *absorbing power* of the blood.

Effects of sugar.

Mechanical physiology.

quantity; for, although the temperature of the air being raised, each cubic foot will be less dense, and therefore contain less oxygen, still there is a constant rush of fresh oxygen to fill up the place of what is abstracted. * From the air this oxygen is absorbed by the blood, in *exchange* for carbonic acid. This exchange is incessant, as long as the oxygen in the air is present in sufficient amount. Nothing that the alcohol burns in the organism affects this exchange. The oxygen taken up may burn alcohol, or fat, or enter into any other combination, but it *cannot affect the supply constantly renewed from the air;* and although when it burns alcohol, the Teetotaler may say it spends on alcohol an amount which might have been spent on *other* substances, the physiologist will reply that these other substances are thereby saved, and are ready † for the

Error upon error.

* The question does not concern oxygen *in* the air, but oxygen *absorbed* by the blood. It is very fine to talk of the next *rush* of oxygen; it may pass off as science with the readers of 'Rose, Blanche, and Violet,' of the galvanized play of 'the Noble Heart,' or other light works of fiction from Mr Lewes' facile and philosophic pen: but after all it is *not* Science. Man is more, and other, than a mere *bellows.* Oxygen does *not* 'rush' into his blood; it is atmospheric air that rushes into the lungs. The question arises, Why does so much *oxygen,* and so little nitrogen, pass *into* the blood? He had just above told us that what *does* pass is not a *fixed* quantity. That several conditions *limit* it. Now, for a purpose, all this is ignored! He diverts the attention of his dupes to another point, and talks of the *supply renewed from the air* being unaffected by the oxygen *consumed!* Can we, then, under the same circumstances, absorb as much oxygen as we please? Is the *absorbing power* of the blood, after all, *un*limited? Does it matter nothing whether the air be warm or cold, dense or vaporous; or whether the blood be fatty, bilious, sugary, or alcoholically poisoned? If not—what does Mr Lewes mean? He is laughing at his readers.

Man not a mere bellows.

A few passages from Lehmann's work, will make the reader aware of the *reliableness* of Mr Lewes:—

"Water absorbs only 925° of its value of Oxygen, whilst from 10 to 13° may be taken up by the blood. This greater force *can only* [be supposed to] *depend upon certain constituents,* and principally, as we know, upon the red corpuscles. Only from 1-14th to 1-11th of the oxygen can be absorbed *mechanically.* This is only conceivable thrö some *chemical attraction.* ... Increase in the absorbing-power of the fluid cannot be referred to any other cause. We think we are justified in concluding with Liebig, *that the quantity of oxygen which may be absorbed* by the blood, is [for the *same* blood] CONSTANT IN AMOUNT, and to a certain extent independent of external pressure. ... *No more oxygen is absorbed even in an air very rich in oxygen* than in the ordinary atmosphere." (Vol. iii. p. 521. Appendix.)

† EXPERIENCE, which is the test of true theory, shows that the use of alcohol does not leave the fuel whose combustion it prevents for a time, "*ready* for the next rush of oxygen." Both as regards the fuel of the effete tissue, and that of sugar-and-oil *ready for combustion,* alcohol diminishes the normal amount; by arresting the progressive metamorphosis on which one depends, and by interfering with the

next rush of oxygen, precisely as oil cast on the fire in burning saves the coal which is burned immediately after the oil is consumed. *

The *Leader's* article.

Thus the first of the two instances upon which Dr C. founds his assertion respecting the incompetence of his Reviewer turns out to be a misconception of his own, illustrated by inaccurate physiology and bad reasoning. It is, doubtless, very convenient and consolatory when we are refuted, to tell the public our antagonist is an ignoramus, but Dr C. would have acted more prudently if he had confined himself to the assertion, and not betrayed his weak-

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functions of the Liver which creates the second. In Mr Henry Stephens' *Book of the Farm*, we have just met with a testimony to the *fact*, all the more valuable that it is from one who relishes whisky-toddy by way of night-cap. The Scotch Drover and Shepherd

Experience.

"Tho exposed all day to the air, and even tho he *feel* cold, he "should avoid drinking Spirits, which only produce temporary warmth "[of sensation], AND FOR A LONG TIME AFTERWARDS INDUCE CHILLI-"NESS AND LANGUOR" (ii. p. 89. Ed. 1843).

If the waste tissue, and hydro-carbons of the blood and bile were really *ready* for combustion,—and *if* the combustion depended only on the next *rush* of oxygen,—the reserved fuel so readily burnt ought to avert chilliness and languor. *The effects prove that there is a loss somehow.* So far from thinking it a source of real-heat, the practical man insists that to *counteract* its eventual chilling effects, it be taken warm —besides a warm-fire—and before retiring to a warm-bed!

"Much rather let him reserve the allowance of spirits he gives "himself, until the evening, when he can enjoy it in *warm*-toddy, "besides a comfortable *fire*, before retiring to rest for the night."

* All this was answered in the *Reply*. We need only repeat here, that the *absorbing power* of the blood is limited, and dependent on various conditions. *Blood with no alcohol in it, absorbs much more oxygen than blood with alcohol in it.* As Liebig says, "The use of alcoholic liquors causes *a considerable* diminution in the amount of carbonic acid given out" (*Animal Chemistry*. p. 27). Mr Lewes is engaged in an attempt to show that a *fire* that burns dully, and gives out least decomposed elements, *uses up* as much oxygen as a fire that burns brightly! When the oil and effete elements of the blood are burnt up, they *consume more oxygen* than when brandy is burnt up—besides leaving the normally absorbing power of the blood undiminished;—it therefore follows to a demonstration that as "the use of alcohol is *irreconcilable*" with *their* use, a limit is artificially put to the absorption (or blood supply) of oxygen. Wriggle as he may, Mr Lewes can by no words, and no hardihood of assertion, get out of this dilemma. A *physiologist* will also tell the Reviewer that what he thinks he gains *by saving*—viz. oil and *effete matter*—is something he had much better get rid of, being the great source of disease. He is recommending to the housewife for saving her fuel, what will incommode her own movements, keep the rooms cold, stuff up the flues with ash, and fill the chimneys with soot!

Alcohol opposes absorption of oxygen.

An untruth.

ness by citing proofs. * He has rested the assertion on two cases: the first we have just seen; the second is simply a definition of food † which Dr CARPENTER opposes by a very confused statement of his own, ending with a point-blank assumption of the matter in dispute. We need waste no space on it, being attracted by another example of Dr C.'s power of—misstatement. After referring to the luminous distinction which has been established by the researches of MULDER and LIEBIG (and which we observe ‡ the Reviewer insists on), namely, that food is of two kinds, *Plastic*, or tissue-making, and *Respiratory*, or heat-making. Dr C. adds, "Now, in the progress of physiological science it had become ap-
"parent that alcohol had no claim to be regarded as belonging to the nutritive
"class, since it was destitute of nitrogenous matter: and as regards the other
"(i.e. the *Respiratory*) experience had shown that alcoholic liquors diminished
"the power of the body to endure cold." This statement can have but one object
—to prove that alcohol had no claim to rank as food; because if alcohol will neither nourish nor warm, it has no quality of food. § Exeter-hall, doubtless, cheered the demonstration. And yet Dr CARPENTER knows very well that alcohol *is* one of the heat-making substances; knows very well that it is food, and that *he has classed it as such* in his *Human Physiology*; knows very well that the body requires about five times as much of respiratory as of plastic mat-

Dr Carpenter charged with insincerity.

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* A pretty piece of self-revelation this! He tells Dr C. that he ought to follow the *Leader's* own tactics, and combine insolence with insincerity! Mr Lewes carries out his own recommendations. "It *is*, doubtless, very convenient and consolatory when we are refu-
"ted, to tell the public that our antagonist is *beneath our notice*, con-
"fining ones-self to the assertion, *and not betraying our weakness by*
"*citing proofs.*" But even *this*, as the *Leader* will in due time discover, cannot avert chastisement and exposure. For one reader of the *Leader*, we will find a thousand readers and hearers of the exposure of his cowardice and superficiality.

† See the observations of Dr Carpenter, p. cxxxii, as to Mr Lewes' blunders concerning the *Correlation-of-Forces*. Dr C. said not a single word about any definition of food! This is evidently a sore point, and Mr Lewes cannot bear to have it probed.

‡ "Which *we* observe the Reviewer insists on"!—the *Leader* writer and the *Reviewer* being identical!

§ Mr Lewes assumes what is *not* true. Dr Carpenter and Dr Lees distinctly admitted that Alcohol is decomposed in the blood, and gives out heat—but their objection is, that it poisons the system *before* it is decomposed; and when decomposed prevents the decomposition of more valuable fuel; which, in turn, being retained, tends to disease. Dr C. says expressly, and in his *Physiology* teaches at length, that if Alcohol be *called* Food, it is *unwholesome food:* and in the very article referred to by the *Leader*, says—"We do not deny that Alcohol, when introduced into the system, takes the place of [in the sense of *dis*placing] other combustive material; on the contrary, *our strongest objection to its habitual use is founded on that very fact.*" Mr Lewes, then, must be convicted, notwithstanding his outcry about 'charity,' of deliberate falsification, *in order to induce the belief that we ignore a fact*, and that Dr C. plays the part of Pander, in turn, both to the Teetotalers and to the Profession! The *Westminster Review* for

ter, and also knows that alcohol, to use the words of LIEBIG, "stands high as a respiratory material." *But of all this he said no word in Exeter-hall.** He was there as the "representative of physiological science," declaring that the writer who had exposed his logic was an ignoramus, and not, therefore, worth attention. He was there to triumph over his antagonist, and he did so, as we have seen.

An untruth: third repetition.

[*From the Leader of December* 8, 1855.]

We have received the following letter to which we give the same prominence as was given to the article it answers :—

"SIR,—As you have commented with some severity upon the part which "you suppose me to have taken in a recent meeting at Exeter-hall, on the "Temperance question, I must beg to be allowed to inform your readers that "the report which has been transmitted to you does not by any means accu- "rately represent what I said on that occasion. No opportunity was given "me of revising it, and I only saw it after its publication.

"I *did* assert my conviction, that the author of the article in the *Westmin- "ster Review* could not be a scientific physiologist; and the chief reason which "I assigned was this—I could not conceive it to be possible that any well- "informed physiologist would either have ventured to dispute what is laid "down by every toxicological authority of the day—British or Foreign—that "alcohol is essentially a poison; or would have attempted to draw a strict line "of demarcation between food and poison, such as assuredly does not exist "in nature.

Dr C.'s *chief* reason.

"I am quite willing to sustain the position I have taken in this matter in "fair argument with any one who shall come forward *in propriâ personâ* to "meet me; but it can scarcely be expected that I should enter the lists with "a champion who can assume to himself an authority, whilst anonymous, to "which, if his mask was pulled off, it might prove that he has no claim "whatever. I am Sir, your obedient servant,

"Dec. 3, 1855. WILLIAM B. CARPENTER."

The writer in the *Leader* challenged.

Dr CARPENTER is difficult to deal with. The *Westminster Reviewer* refutes him, and his answer is, "The writer cannot be a physiologist." We point out his blunders and misconceptions, and his answer is, that we wear a 'mask.' Now it seems to us that if the *Westminster Reviewer's* arguments are sound, it matters little whether he be a physiologist or a geologist, a tinker or a tailor, † since he does not rest his statements on his own personal

The *Leader* declines an open encounter.

January, 1856, which has to apologize for citing the *Physiology of Temperance* as the *Prize Essay*, this latter being a distinct work which the reviewer had not even seen!—*disclaims* any intention of charging Dr C. with 'venality.' It *only* implied that he had played 'fast and loose'!

* Prof. C. distinctly stated that alcohol *was* combusted in the body; Dr Lees, in the report before Mr Lewes, states it six times, and actually had to *defend* that position in the *Daily News* against Dr Davis. What can be said of such an *unscrupulous* opponent?

† If Dr Carpenter may not decline controversy with an anonymous literary-tinker or tailor—what right has the *Leader* to put forth the pretence that anybody is "beneath the notice" of said possible Tinker? Let us here say that it is not anything in the article itself that induces such public notice, tho we admit the kind of cleverness evinced; it

'authority,' but on evidence. Moreover, in shifting * the ground of accusation, Dr C. has not bettered his case; for the Reviewer expressly declares alcohol to be poison *in large doses* (which is all that toxicologists maintain), ‖ but that in *small doses* it is food; and he shows conversely that all food becomes poison, in excess. But Dr CARPENTER persists in confounding excess with moderation—persists, in spite of evidence, in attributing to small doses what is true only of large doses, and thus claims the toxicologists as authority for his assertion that alcohol is *essentially* a poison. †

As for our anonymous selves, we admit the terrible and obvious fact of wearing a 'mask,' but we cannot comprehend how the removal of that mask would suddenly change Dr CARPENTER'S blunders into accuracies, or his misconceptions into clear conceptions. He endeavours to meet our exposure by disavowing the report of his speech at Exeter-hall, ‡ which, of course, may have inaccurately reported his words; ‡ but we find from the *Bristol Temperance Herald*, of December 1, that he has, in the *Scottish Review*, written an article in reply to his Reviewer, and in this article there is this very passage, *word for word*, which we quoted last week as containing a strange misconception of the Reviewer's statement, and very serious blunders by way of illustration. Will the removal of our mask alter these things §

Dr Carpenter at fault.

End of the *Leader's* article.

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gains notice from being elevated to the platform of the *Westminster*. So long as the ideas were confined to the *Leader*, we made no noise about them—knowing they could do little harm; tho we might use them, now and then, as a peg whereon to hang an argument—nothing more.

* Dr C. has *not* shifted his ground: he only supplies another reason omitted in the report.

‖ "The *quantity required* to kill (or injure) cannot be made a ground for distinguishing a poisonous from a non-poisonous substance."—Dr TAYLOR.

† To all this we answer, Toxicologists maintain *more* than Mr Lewes here asserts: they class Alcohol with *nux vomica*, etc., as an essential poison. Dr C. does *not* attribute to small doses what is true *only* of large: and Mr Lewes *knows* that he cannot cite any passage in which he does this.

‡ This last statement is like all the rest: a deliberate perversion of the truth. Dr C., in the letter above, does *not* disavow the passages cited: he only intimates, first, that there were *other* reasons assigned by him, not reported: and second, that he is *prepared* to meet his Critic unmasked, and *sustain* "*the position taken*"—of which the passages cited form part. The *Leader* retreats to his—kennel.

§ Take away the mask which imposes on the weakheaded who peruse the *Times*, or the *Quarterlies*, and the superstition of 'authority' dwindles away. Moreover, *responsibility* for suppression, evasion, and falsehood is established: and consequently these vices of a venal Press are checked: and discussion becomes, in some measure, fairer. The *Leader* betrays a consciousness of this, by declining to *un*mask. True, it makes no difference as to argument—but a good deal as to what is put forth under that cloak. The removal of the mask *would* alter several things very materially.

Masked writers *ir*responsible

Mr Lewes complains that Dr Carpenter treats *him* as an *ignoramus*. And *why* should he not intimate Mr Lewes to be an *ignoramus*, if he thought him one; and *therefore* not worth attention? Is not that quite as legitimate as for Mr LEWES to declare Mr LEES to be something "altogether beneath notice"? As the proverb says—"what is sauce for the Goose is sauce for the Gander." It is because Mr Lewes can *not* triumph, that he bawls so loudly. To borrow the *Leader's* own figure, it is the licked Cur that goes home 'howling': the true English Bull-dog behaves after a more plucky fashion.

Science *versus* Sciolism.

Besides the special objections to the *sham*-Science and *real*-Quackery of the *Leader* stated in our notes, we have the broad objection to his general stand-point, already given in the words of Lehmann. Mr. Lewes may not be disposed to profit by the caution: and the following citations are therefore given for the benefit of our more dispassionate readers. The *characteristic* of the QUACK is to talk or write confidently with very limited knowlege and one-sided views: the *Leader* articles we have reprinted illustrate our meaning to perfection on the subject of Respiration. Now let us contrast the way Mr Lewes writes, with the manner in which LEHMANN approaches the subject.

Lehmann's caution.

"It would seem that the simultaneous action of the alkali and of the free oxygen upon readily oxidizable substances, might afford an explanation of the entire process of oxidation in the organism. But the present affords an instance of *the danger of being led astray, by perfectly correct but isolated facts*, to adopt extreme and exclusive opin ions. We frequently enough encounter contradictory phænomena, which sufficiently show that we are deficient in the elements necessary for tracing the whole of these phænomena in their *causal* connexion. ... If we were to draw the conclusion that oxidation could not be accomplished in the organism without the concurrence of free oxygen and an alkali, *we should err quite as much* as if we were to conclude that all oxidizable matters which have once reached the blood must be consumed, provided only there were enough oxygen and alkali present for their oxidation. ... We at all events learn this much from these experiments, that *no one* perfectly correct chemical fact can enable us to foresee, and correctly prejudge, the result of chemical effects in the living body; and it would be no less unsuitable to endeavor to elucidate the mystery of life by *rude chemical hypothesis*, than it would be senseless to banish chemistry from the sphere of vitality" (vol. iii).

Liebig.

BARON LIEBIG, also, warns us not to regard the body from a one-sided point of view:—

"No one will seriously deny the share which the *nervous apparatus* has in the Respiratory process; for no change of condition can occur in the body without the nerves. Under their influence, the viscera produces those compounds which serve for the production of the animal heat; by the nerves these substances acquire the form and the properties, in virtue of which they are *capable of combining with oxygen* in a given time; and when the nerves cease to perform their functions, the whole process of the action of oxygen must assume another form. Every disturbance of the nervous system reacts visibly on the process of respiration."

He further illustrates the subject by an instance parallel, if not identical, with the fallacy of the *Leader* :—

A parallel.

"If we divide the *medulla oblongata* in two animals, and keep up respiration and circulation in the one by blowing air into the lungs, while we observe the cooling in both, the temperature of the animal in which artificial respiration is kept up, is found *for a time* higher, altho by the change of air in the lungs, evaporation, and consequently cooling, must have been accelerated. The temperature of both, however, sinks. ... If the combination of the oxygen of the air with the elements of the blood were the only cause of the development of heat in the body, the temperature of the blood in these experiments could not fall; nay, by *merely agitating* the blood with oxygen, we should be able to keep up a high temperature: the only difference would be, that, in one case, the experiment would be made in a glass vessel, in the other it would be made in the blood-vessel. But only *one* condition is here fulfilled, namely, the supply of oxygen: *for the oxygen in its course does not find the substances with which it would, in the normal state have combined, in the proper form:* and on this, as the experiments show, the nervous system has a most decided influence. By the absorption of oxygen into the blood, indeed, *a certain amount* of heat *was set free*, but far less than the animal lost in the same time by cooling and evaporation: the *conversion of oxygen into the* NORMAL *compounds was prevented*" (pp. 39—40).

This is precisely the position of the Teetotaler as to Alcohol in Respiration, which Mr Lewes seeks to keep in the background, and hood-wink his readers by the reiteration of an admitted, but *inconsequential* fact. The sum of our observations is—

Summary.

That Alcohol gives *less heat* than the matter it displaces.

That it does not prepare matter to be more readily burnt up, but, as a robber of oxygen, and an antiseptic and narcotic, arrests that eremacausis or decay which is the necessary antecedent to combustion.

That in particular, it retards the formation of the *albuminates*, of *lactic acid*, and other metamorphic elements, equally tributary to the functions of Digestion and of Respiration.

That it lessens the *absorbing power* of the blood generally.

That it diminishes the absorbing capacity of the corpuscles by its directly *poisonous action*.

That by its action on the nerves, and the character of the blood, it lowers the permanent activity of the circulation in the capillaries, and consequently reduces the normal activity of Respiration.

Mr Lewes totally ignores the fundamental rule of Lehmann :—

"The *chemical* qualities of a body cannot be at variance with the *physiological*. That method which fulfils the requirements of *both* sciences, Chemistry as well as Physiology, can therefore be the only correct mode of treating zoo-chemistry" (i. p. 27).

Liebig says— "*Clothing* is an equivalent for a certain amount of Food"—but he never borrowed the *Leader's* logic to infer, that "Clothing *is* Food"! Mr Lewes argues—that whatever is combusted *is* food, *because* food is combusted!—as if food had but *one single attribute!* Now we admit that if alcohol were combusted in the blood *like* food—i.e., if it warmed efficiently and innocently *as* food does—it might be classed as such. BUT UNFORTUNATELY IT DOES NEITHER.

The reader can hardly fail to note, that the Westminster Reviewer assigns two distinct and contradictory reasons for classing Alcohol under the category of Food.

First, says he, Alcohol is FORCE, and therefore food!

The supreme absurdity of this, as logic, we have sufficiently exposed; but as a matter of fact, we observe, (*a*) Food is a special material for the *creation* of organic force, not force itself, (*b*) that Alcohol does not increase but diminish the *permanent* power of the body, (*c*) that Forces generated in the body are no more *practically convertible* than various forces out of it, as for example, gun-cotton and gunpowder, for blasting rocks, or these agents in comparison with steam, for propelling locomotives. Alcohol is as unfit for the *steady-uses* of the body, as those explosive-agents for the engine. Contradictory pleas.

Second, says the Reviewer, following Johnston, Alcoholic drinks SAVE food, by *retarding* the loss of the substance of the body—"They "*diminish* the absolute amount of matter usually given off by the lungs "and the kidneys—they *thus lessen the natural waste* of the *tissues*," etc. (W. R. p. 116.)

Here is a kind of Food then quite as contradictory as the reviewer's own logic, and quite as little at-one with itself! It is food *because* it gives out force in being decomposed,—and it is food besides and because it *arrests* decomposition and therefore lessens force! It is food because it does what food does, and it is food because it also abolishes the *necessity* for food! It is Food because like WEALTH, which can *supply* the bodily-wants, and it is Food because like WANT, which *stops* the supply!

We adhere to our old judgment of this writer: his defence has all the evasion and meanness of his first attack, with all the malignancy generated of certain natures by defeat. Our original arguments remain untouched: the Teetotal stronghold is impregnable as ever—ALCOHOL IS *not* FOOD: ALCOHOL *is* POISON. No flag of Truce shall induce us to admit it within the Citadel of Life—it belongs to the 'tricksy' tribes of the Alien TOXIKOI, not to the family of BETH-LEHEM 'the House of Bread'—and we therefore drive it back amongst its ancient kith and kin.

DOES ALCOHOL MAKE THE BODY WARMER?

AN apology is perhaps necessary for bringing a local controversy extensively before the public: the only one we have to offer is, that while the question discussed is one of scientific moment, the way in which it has been treated illustrates two facts—the low state of education and absence of logical discipline in certain quarters, and the debasing influence of the Traffic, which is found to ramify itself thrō the press, from the *Times* to the smallest of the small-fry of the provinces. It illustrates also the *temper* in which Drinkers discuss the subject.

I.

To the Editor of the Easingwold Chronicle.

Alcohol said to *prolong life* in exposure to cold.

Dear Sir;—In your *Chronicle* of last month, you give an account of the lamentable circumstances connected with the death of GEORGE JACKSON, who was found, in an almost lifeless condition, on a frozen pond in this neighborhood. He had lain there during ten hours of one of the coldest nights of the late severe storm. Your account is correct: but I trouble you with these few lines, because of certain reports and disputes which have since taken place, respecting the evidence I gave at the inquest. The correctness of that evidence was doubted by the worthy Coroner, in the presence of the Jury; and I find misconception prevails in the minds of others. I gave in evidence, that the large quantity of rum which Jackson had taken, was the means of his preservation in life for so long a period, and under such very trying circumstances. The explanation is soon given, and according to the principles of human physiology and animal chemistry. In the case before us, it was the preservation of the internal animal heat which chiefly prevented, for the time, the utter extinction of life. Its operation was in supplying the elements of respiration for the cold and condensed atmospheric air to act on, and expend itself: and, in that action, its oxygen combining with the carbon and hydrogen of the spirit, heat was evolved, and supplied to the body. He had taken largely of the undiluted rum, which served as fuel in the consuming process of respiration. Its constituent elements are, three of hydrogen, two of carbon, and one of oxygen, *nearly*.* Here are five parts out of six which would be consumed by the oxygen of the air, † to form carbonic acid and WATER, which would be given off in the breath. But for the quantity of rum taken by Jackson, *no doubt*, his body would have become as cold and lifeless as the ice he lay on, long before the time he was discovered. As it was, even, the brain and nervous system were affected to such an extreme degree, that notwithstanding the assiduous application, internally and externally, of means best calculated to be of service, it was quite unavailing for his restoration—he never headed for a moment,—and I doubt not, that the internal effects of the rum were bad, and *very unfavorable* on the

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* '*Nearly*'! The use of this word betrays that he is talking of chemistry without understanding it.

† Wrong again! In $C^2 H^3 O_1$, the 1 atom of Oxygen will unite with 1 of Hydrogen, leaving only 4 out of 6 to unite with the Oxygen *in the blood* (not the Oxygen *in* the air, but the Oxygen drawn *from* the air). The *water* is given off chiefly by the skin.

brain and nerves, altho it had served, thrö its chemical elements, to keep up the internal animal heat, for a time, and with it, also, a LOW DEGREE of vitality.

Kilburn, 20th *March*, 1855. JONAH HORNER, M.D.

II.

To the Editor of the Easingwold Chronicle.

Sir,—My attention has been called to a very singular letter in your Journal, signed 'JONAH HORNER, M.D.'

1st. It is asserted that the *large* quantity of rum drank by JACKSON, was *the means of his preservation* FOR SO LONG A PERIOD!

The case put.

Does this mean that the *narcotizing* effect of the spirit-poison was *not* the occasion of his death? Does it mean that a *sober* man, after a rational meal, would have perished as Jackson did, or perished *more suddenly*? If not, I fail to perceive the pertinence of the statement: and if it does mean that, then I beg to say it is contradicted by all experience, and by *true* Physiology and Chemistry. The experience of the shepherds in the Highlands here, of the Canadians, and of the Arctic Voyagers, proves that nothing is *worse* adapted than rum or whisky for resisting cold *permanently* (i.e. for 8 or 10 hours), and nothing more dangerous in a low temperature than an *excess* of it. I could furnish you with a volume of evidence. But the other day, I was conversing with a Sea captain, who informed me that he has had more than once to work his vessel on the wild shores of Labrador, when the sails were sheeted with ice, and no time to eat or drink for 12 hours at a stretch, and done this without a drop of alcoholic liquor. Now, why did not he and his crew perish, instead of remaining well, if the hypothesis of Dr HORNER be true? As *workers* they must have *lost* more heat than Jackson, who was *still* and stupified; yet *he* perished, and they did not. The secret is, that the amount of heat lost was *supplied* by the generation of an equal measure in their case, but *not* in his. The activity of their respiration brought the oxygen of the air into the system, to unite with the *natural, oily* and saccharine fuel of the blood and the tissues: whereas JACKSON, whose *nerves were poisoned, lungs congested, and breathing reduced* (*being in short, in an apoplectic state thrö drink*), *had his furnace choked up, and his best fuel kept unconsumed.* Dr DAVY, F.R.S., long since proved, by the test of the thermometer, that the *blood* is colder after the use of strong drink, not warmer. The explanation is at hand. As LIEBIG has proved, where 266 parts of spirit give out a certain measure of heat, 100 parts of the oil of the food (or oil of the blood, always present) will give out as much. But each equivalent of *alcohol robs the blood* of 12 atoms of its oxygen (which gets there in reduced quantity in the coma of drunkenness), to unite with itself, leaving *unburnt-up* the more valuable natural fuel. *The difference is the loss.* The fact is also proved by PROUT, VIERORDT, BÖCKER, and LEHMANN, that after the use of alcohol, *less carbonic acid* is expelled from the lungs—hence less heat must be given out to the blood.

Why rum could not prolong life in Jackson's case.

2nd. When Dr HORNER says, that "as it was, *even*, the brain and nervous system were affected," he implies *that but for the chemical effects of the alcohol, matters would have been worse!* Here he is wrong again—for if the man had been *narcotized* to the same degree with

opium, things would have been *better*, for this reason—that the opium would not have been consumed as fuel to the *exclusion* of the more *heat-giving fuel* of the blood. The man was made *colder* by the rum than he would have been by opium. Hence alcohol is a double poison, physiologically a narcotic, chemically a reducer of the vital *heat*.

Aberdeen, April 27th, 1855. F. R. LEES.

III.

To the Editor of the Easingwold Chronicle.

Good.

Dear Sir,—It is easily accounted for, why your daily and *temperate tipplers* possess unhealthy blood, and therefore unhealthy tissues, and have so little power to resist the influence of morbific causes. No wonder that with blood so deficient in vivifying oxygen, and so replete with qualities of an opposite nature, such persons are without mental and physical energy,—and, their brain being so supplied, that they suffer from lowness of spirits, excepting at the time when they are under the stimulus of alcohol.

‖ Queer effects of *temperate* use!

The effects of the regular and *temperate use* ‖ of intoxicating drinks is, *to keep up in the body an undue proportion of carbonaceous blood*, and *to keep down* the due proportion of *de*carbonized blood. In other words, it operates in causing that there be too much of *venous*, and too little of *arterial* blood; besides, it causes the retention of other noxious and depressing impurities.

Kilburn, May 18th, 1855. J. HORNER, M.D.

IV.

Puff of Dr Sheridan *vice* James Muspratt.

The following letter from Professor MUSPRATT to Mr Joseph Smith, on Drs LEES and HORNER's letters, we think ought to settle the question, in our columns at least, between these gentlemen. The opinion of a man of the world-wide fame of Dr MUSPRATT—the favorite pupil of LIEBIG, the friend of DUMAS, the apologist of BERZELIUS, the author of *Chemistry, Theoretical, Practical, and Analytical*, and many other learned works on Chemistry—*ought to be received with the utmost respect.*

Royal College of Chemistry, Liverpool, JUNE *9th*, 1855.

Dear Sir;—I have only just time before leaving town to answer your polite note relative to the inquest that lately took place in your neighborhood. I have read the letters of Drs LEES and HORNER, and I certainly agree with the latter;—there cannot, *chemically* speaking, be the slightest doubt as to the man's life having been prolonged by the quantity of alcohol (rum) which he had imbibed; in the words of Dr HORNER, 'it was the preservation of the animal heat'—i.e. the incipient combustion of the spirit, 'which chiefly prevented, for a time, the utter extinction of life.'—You are perfectly aware of the large quantity of *respiratory food*—oils, spirits, etc., that can be taken by savages in the regions of ice, and how often life is preserved by their imbibition.—I am, yours very truly, SHERIDAN MUSPRATT.

V.

To the Editor of the Easingwold Chronicle.

Dr Horner's perversion of Dr Lees' statement.

Dear Sir,—A *truly singular* letter appeared in your Chronicle of last month, with the signature of F. R. LEES, *of* Aberdeen. I have no wish whatever, to dispute with its author; and confess that I was surprised at its insertion in your paper, seeing so very little connection between its contents and my previous statements on the case of JACKSON, and of which it professes to be a refutation. The simple law of animal chemistry, in the generation of animal heat, and which I briefly explained in its application to Jackson's case, *will ever* remain true, whatever may be the wishes and views of F. R. LEES. I

have only and finally to add, in kindly feeling, that the great and philanthropic cause of Teetotalism stands in no need of that advocacy which disputes the operation of established natural laws: and when properly understood, they are all in support of it. Yours respectfully, J. HORNER, M.D.

Kilburn, 21st June, 1855.

VI.

Sir,—I am amused at the manner in which my communication has been replied to. At the same time that my letter appeared, the only object of which was to show that Dr HORNER had formed his opinion on a too narrow (i.e. a mere chemical) view of the case—another letter appeared from Dr HORNER, the motive of which is evident enough. Next comes Dr MUSPRATT'S letter, prefaced by "the *opinion* of a man of the world-wide fame," etc., etc.! But what have I to do with his world-wide fame and his opinion? I did not write about *opinions*, but facts. I did not give you my opinion in opposition to somebody else's opinion. I always endeavor to mould my own opinion into harmony with facts; not conversely. Authority is not science; it knows nothing of Popes and Infallibility; and you ought to be aware that the great names you cite, LIEBIG, DUMAS, and BERZELIUS, are the names of men who have *long combatted each others 'opinions.'*

Authority scorned.

I repudiate the settlement of questions by such a method—Facts in the first place, and Logic in the second, are the only proper means of determining the Truth. Now, if I was wrong in any one of these points, why did not Dr HORNER point it out?—and thus *end* the matter by showing that *my conclusion* was erroneous? Instead of that, he adopts an evasive method of reply. He insinuates that 'the *simple law* of ANIMAL-chemistry, in the generation of *animal*-heat, will ever remain true, whatever may be the *wishes* of F. R. LEES.' But I have no wishes about the matter. Will JONAH HORNER show what law (simple or otherwise) of Chemistry (animal or not animal) I have denied? If he will, I shall readily allow that my letter *is* 'singular': but at present I only perceive that JONAH HORNER, M.D., thinks he must say something, and for want of something better, he says *that*. It was not a *law of chemistry* I disputed, but Dr HORNER'S *application* of the law. I showed first, from *facts*, that the natural oil in the blood is *better* than rum, and gives out more heat, and for a longer period, viewed *chemically*. Second, that in the case of JACKSON, the rum had interfered with the nervous system and arrested the *respiratory-function*. Here, then, is the mistake of this chemical school (as LEHMANN, in his great work, has pointed out) *—they speak of *chemical* laws too exclusively, ignoring the fact that man has a nervous and vital system which modifies mere chemical laws. It is a gross misrepresentation on the part of Dr HORNER to affirm that *I* have "disputed the operation of natural laws." What I disputed was his *application* of an admitted law, and his *inference* from it. Will you, or Dr HORNER, in all good temper, meet my facts and reasoning by something better than *mis*-statement and grandiose 'opinions'?

Tests of truth.

* "*No one perfectly correct* CHEMICAL FACT *can enable us to foresee and correctly prejudge the result of chemical agencies in the* LIVING-BODY" (*Phys. Chem.* iii. p. 234).

Lehmann *versus* Muspratt.

By the way, when you speak of Dr SHERIDAN MUSPRATT as the favorite pupil of LIEBIG, I am reminded that the master and his pupil are at loggerheads on a point kindred to this before you. Dr MUSPRATT, in his empirical testimonial to *Allsop's Pale Ale*, says distinctly that it contains "*much nutritious matter.*" LIEBIG affirms, on the other hand, that in brewing, the nutritive matters of the barley "*are lost for the purposes of nutrition.*" To show you the value of even LIEBIG's 'opinion'—look at the grand announcement of the nutritiousness of *gravy*-soup, in his work on Food—an 'opinion' now so thoroly exploded (*creatine*, or gravy, being really effete matter) that its author has nothing to say in its defence. Again, Dr HORNER is of 'opinion' that Teetotalism is right—but your grand authority, 'Professor' MUSPRATT, is of 'opinion' that it is wrong. When Doctors differ, who shall decide? Perhaps you will condescend to inform me, *who* is the veritable Pope to whom I must appeal at last?

Meanwood, July 3, 1855. F. R. LEES.

VII.

To the Editor of the Easingwold Chronicle.

A dreary blunderer.

Sir,—The discussion between Drs HORNER and LEES would appear to have been carried far enough, for any good likely to accrue to the public, and therefore further observations may be looked upon as superfluous. And yet some parts of Dr LEES' letters are so ambiguous, not to say contradictious, as to provoke remarks, and lead to the supposition that he had taken his degree at a college founded by the celebrated Frenchman who defines the use of speech as being intended to disguise our ideas. Other parts however are plain enough.

The subject under discussion is—Is the taking of spirituous liquors *heat-creating, or cold inducing, as applied to Jackson's case?* The taking of a *directly poisonous* quantity of alcohol to *suspend animation* or *entirely destroy life* is not the question in point. * *Jackson traveled, and chiefly on foot*, some *six or seven miles after drinking the rum.* Now for the theories. Dr HORNER says, "In the case before us it (*the rum*) *was the preservation of the internal animal heat*, which chiefly prevented, for the time, the utter extinction of life," etc. One would think that a philosophical chemist, like Dr LEES, could not differ in opinion with this. Dr LEES, however, holds no 'opinion' or theory on the subject—nothing but 'facts.' † He says, "as proved by the test of the thermometer, the blood is *colder after the use of strong-drink, not warmer.* Where 266 parts of spirits give out a certain measure of heat, 100 parts of the oil of the food or blood will give out as much. But each equivalent of *alcohol* robs the blood of 12 atoms of its oxygen to unite with itself, leaving unburnt up the natural fuel. *The difference is the loss.*" On these '*facts*,' diametrically opposed to the more *modest* 'opinions' of Drs MUSPRATT and HORNER, I shall offer no remarks, but allow Dr LEES to speak for himself in his communication of July the 3rd. "At the same time that my letter appeared," says he, "*the only object of which was to show that*

* Dr H., in his first letter, says that Jackson had drank "*a large quantity of rum*," and that "the brain and nervous system *were affected to an extreme degree.*" O Joseph Smith!

Notes

† Dr LEES stated an opinion in opposition to that of Dr HORNER: but distinguishes between *facts*, and *opinions* or inferences drawn from facts.

Dr Horner had formed his opinion on a too narrow, i.e. a mere chemical, view of the case," etc. Not that his 'opinion' is *erroneous,* but not sufficiently *broad*—not *comprehensive* enough. * If this (and other passages equally suicidal) is not admitting the correctness of Drs HORNER and MUSPRATT'S theory *as far as it goes*—a theory he strenuously repudiates in his first letter, written purposely to show that the *use of spirits causes coldness* in opposition to Dr HORNER'S proving *that it creates heat,* †—I fail to see the use of words. "A too narrow—a mere chemical view" means, I should suppose, that it is not a morbid teetotal view, as *if a simple scientific question* like the one under review must be viewed through *a teetotal medium.* Away with such teetotal advocacy! It clogs and impedes the good cause it undertakes to further.

Confusion worse confounded.

Dr LEES is amused at the manner in which his communication has been replied to. I should think a great many of your readers are amused at the indifference with which he treats some, and the manner in which he speaks of other, of our brightest European luminaries. By the way, as regards the *alleged* difference between Baron LIEBIG and Professor MUSPRATT respecting Bitter-beer, does not Dr LEES know that in popular language heat-producing and tissue-producing substances are indifferently called *nutritives*? When LIEBIG, in speaking of the brewing of ale, says, "the *nutritive* matters of the barley are lost for the purposes of nutrition," he alludes to it *as a non-tissue creating substance only.* And when MUSPRATT says Allsop's Pale ale "contains much *nutritious* matter," he is speaking of it as a heat-creating substance, and also a tonic conducing to nutrition. Both are right.

A HATER OF TEETOTAL, AND ALL OTHER KIND OF, CANT.

Wuss-Bank-top, August, 13*th,* 1855.

VIII.

To the Editor of the Easingwold Chronicle.

Dr Lees' reply.

Sir,—My attention is directed to an impertinent letter in your journal, signed "A HATER OF TEETOTAL AND *all* OTHER KIN*d* OF CANT." I am accused of writing *confusedly,* and of *contradicting* myself, and I am asked a *question.* Here is my answer.

After reperusing my two short letters, which have so disturbed the philosophy of your correspondents, and excited their intolerance and ire, (as if it was a *crime* to have an opinion, and prove it!) I am unable to perceive the confusion of language or the contradiction of thought.

Tho I cannot give 'A. H. CANT' *capacity* to comprehend either the exact meaning of words or the facts of science, I am very sorry I have excited his bile. If it will soothe him, therefore, I will try to clear up the cephalic fog which affects him, and show him that while I am not contradictory, he need not be so contradictious. Let us, for the nonce, compare the human body to a house in which there are apartments required to be kept warm, a machinery for warming it, and fuel to be burned. *First,* then, I admitted that alcohol put into the grate

* Another blunder. It was precisely because the mere chemical-fact which formed Dr HORNER'S premiss was too narrow for the physiological basis of his 'opinion,' that we hold it to be erroneous: as Professor LEHMANN points out. We said, the *facts* were not broad enough for the opinion: not that the *opinion* was not sufficiently broad. It was *too* broad. The critic puts the cart before the horse.

† That alcohol yields *heat* in its combustion no one disputes. The question is, does it make the body *warmer* than fat, the combustion of which it prevents?

of the body, would, thrō the action of oxygen, be consumed, and thereby give out *heat* (say, for illustration, a measure represented by 50). Dr HORNER, taking this fact of chemistry, applies it to Jackson's case, and *infers* that he must have *died sooner* than he did, but for the rum! *Second*, I dispute, not the fact, but the inference—and I showed that the bare chemical fact was not *broad* enough to warrant that inference [in other words, that the inference was too broad]. For, 1st, alcohol as a narcotic, disordered the breathing and nervous machinery concerned in the use of the fuel; 2nd, alcohol prevented *the more valuable oil* and effete matters of the blood, etc., from being consumed, which would have yielded a measure of heat represented by 70; and therefore that the difference of 20 was the loss. I then showed, in addition, that *experience* harmonized with *my* opinion and conflicted with Dr HORNER's. * Moreover, I understood Dr H. to *be* a teetotaler, and I was not conscious myself of specially advocating, as 'A. H. CANT' says, teetotal*ism*. I fancied it was rather a point of science than of teetotalism, tho no doubt science and all truth is favorable to that *ism*. An illustration from Watson's *Practice of Physic* may be of service. A *drunken* man slept in an oven, at 120 degrees, and died. The verdict of an ignorant jury or coroner might have been —"Life destroyed by excessive heat,"—and the testimony of some Kilburn philosopher might have been—"Would have perished sooner but for the rum"—had not true Science been enabled to show that a *sober man* would have woken up without any material injury. The 120 degrees of heat does *not* explain death—neither does the *cold* of the Winter's night explain Jackson's fatal case. But add—the *men were drunk*, and had lost their vital, resisting power, and death is accounted for.

Alcohol prevents due warmth.

In popular thought, '*nutrition*' is that which 'sticks to the ribs.' So too in LIEBIG's vocabulary. When a (self-dubbed) 'Professor of Chemistry' gives a *scientific* certificate, we expect him to speak in accurate language. Moreover, if popular language *knew nothing* of the modern distinction between respiratory and plastic food, then, at best, the testimonial of MUSPRATT was *purposely* worded to catch the 'popular' *un*distinguishing notion. But, finally, 'A. H. CANT,' in defending his Bitter-beer-pet with a bitterness that shows no love for 'the good cause' of teetotalism (as he *cantingly* calls it) only gets him out of the frying pan into the fire. I defy him, or any one else, to show that "Pale-ale contains *much nutritious* matter." Will he reply—there is *much gum* in it? Granted—but gum is not *even fuel* for the body: BOUSSINGAULT, BLONDLOT, and many others, have demonstrated that it is *indigestible*—and that of 50 grains swallowed, in ordinary circumstances, 46 will be found in the *excrements*. This, once more, will serve to show that chemists are not *therefore* good physiologists. Like your correspondent, they often reason on too narrow a basis, and jump to conclusions.

What is *nutrition?*

Muspratt's blunder anent Gum.

I must decline any further correspondence with anonymous persons, unless they write respectfully and in good temper: but conclude with subjoining a letter from a physician of long standing and extensive

* See Mr Stephen's testimony, p. cliii.

practice, whose 'opinion' also I shall ask on the point at issue, and to whose judgment I would defer, much sooner than to 'A hater of Teetotal and *all* other *kind* of Cant' !—Yours, etcetera,

September 11, 1855. F. R. LEES.

IX.

To Dr F. R. Lees.

View of Dr M'Culloch.

Dear Sir,—I have carefully perused the correspondence about the case of Jackson, and append my remarks. Evidently Dr HORNER has been led into a grave misconception as to the efficacy of the Rum, by a foregone conclusion,—viz. that Jackson *must* have perished had it not been for some *extraordinary* cause of preservation,—in other words, that in *ordinary* circumstances a healthy man *must* die if exposed to the same trial as Jackson. His statement that the Rum "was the means of his preservation in life for so long a period," either implies this, or that assertion, with the subsequent argument, has no meaning at all. Dr HORNER surely cannot be acquainted with the narratives of our Arctic Expeditions, especially the land-ones, and similar experiences of high latitudes, otherwise he would have found that exposure, for weeks together, to a far more intense cold than ever occurs in Great Britain, has been endured by many of our countrymen with comparative impunity, but certainly *not* whilst under the influence of drink. The retention of life by Jackson was, therefore, nothing wonderful, were it not for a reason the very opposite to what Dr HORNER has supposed, viz. *the fact that he was drunk.* As to the Chemical-*reasons* adduced in the Rum-theory, neither time nor space permit me to show (an easy matter) their utter futility: but if they were even the undisputed and accepted *theories* of Chemistry and Physiology, which most decidedly they are not, they would be worthless against the recorded facts and enlightened experience of the following eminent authorities—Sir JOHN RICHARDSON, M.D., Sir JOHN FRANKLIN, Sir JOHN ROSS, the Rev. Dr (formerly Captain) SCORESBY, Dr HOOKER, Dr J. ROBERTSON, Dr R. A. GOODSIR, etc., all well known in connexion with Arctic discovery, and not one of whom were Teetotalers. The testimony and facts given by these competent, impartial, and experienced observers, are *directly* opposed to Drs HORNER and MUSPRATT'S *opinions*, and prove that spirits diminish the power of resisting cold, even in what is called 'moderate' quantities, and that in large quantities they are so dangerous to life as to be fatal in cases where, *cæteris paribus*, the absolutely sober would be, and were, safe. A great number of well authenticated cases can be cited in our own country to the same effect. Can any amount of plausible argument, *founded on mere theory*, be accepted for one moment against such an array of facts and experience; more especially if such arguments are untenable theoretically, as they really are? One of your opponents cries out, "Away with such Teetotal advocacy" !—and that you "view facts thrö a teetotal medium." This is miserably silly and impertinent; it is of no moment whether it is teetotal or bacchanalian: *Is it true?*—that is the only question. Dr JOHN DAVY, (brother to Sir Humphrey,) and the late Dr PROUT, have proven, the one by the thermometer and the other by measuring the amount of carbonic-acid respired, that spirits lower the temperature of the blood. The

Experience.

'Hater' will surely not assert that the Thermometer can be influenced by teetotal or bacchanalian prejudices? What folly, then, to adduce opinions founded on the heat given out by spirits burned in a *lifeless* lamp, against facts proven by actual experiments upon the *living* human body! My own experience, *personal* and professional, and it has been extensive, is directly opposed to Dr HORNER'S opinion;—and, I believe, so would be the opinions of all the Colleges in Europe. I deem it unnecessary to say more; with the exception of expressing my disgust at the arrogant and ignorant dogmatism of MUSPRATT, *who is no authority whatever upon a physiological question like this.*—And then his designating his Laboratory in Duke Street, "*Royal* College of Chemistry, Liverpool"! It has no more title to be so called, than my Kitchen! And the nauseous, fulsome, and mendacious puff by which his letter is prefaced in the newspaper! Out on such contemptible Quackery! Yours faithfully,

Dumfries, Sep. 12, '55. JAMES MURRAY M'CULLOCH, M.D. etc.

X.

The following is the whole of the anonymous writer's next letter, save a few personalities, and what he calls a brief *recapitulation* of the arguments—occupying half a column. At the close the Editor intimates that the correspondence must end. Begun in sham-science it closes with genuine abuse!

To the Editor of the Easingwold Chronicle.

Sir,—It is quite refreshing to see Dr LEES make *any* acknowlegement of his ambiguities and contradictions; for an acknowlegement of error is certainly considered as made, when a man, leaving alone his antagonist's reasons, falls upon him with abuse. (!) My letter pointing out the ambiguities and contradictions of Dr LEES, called from him the letter which appeared in your last paper, containing nothing worth noticing (except the valuable information that the blood contains oil!—without informing us where it gets it from) *

* How very far behind the age, our Coxwold Critic is, may be seen from a work published eight years back,—the *Medical Chemistry* of Professor D. P. GARDNER (Philadelphia, 1848), which was an able *resumè* of the works of Mulder and Liebig.

Professor Gardner.

"The difference produced by respiration, between venous and arterial blood, resolves itself into three prominent circumstances. There exist in the blood several bodies which have a powerful affinity for oxygen.

"1st. *Oxygen* causes the protein compounds to take on a new form preliminary to their precipitation in the tissues.

"2nd. A portion is expended in resolving *fatty* and *effete* matters into carbonic acid and other oxides, for the maintenance of the animal heat, and the preparation of the effete matters previous to their separation as excretions.

"3rd. A consequence of these actions of the oxygen is an increase of the affinity of arterial blood for the tissues.

"The Liver prepares the fatty matters, and the Lungs, by the introduction of oxygen, regulate their consumption. If too little oxygen be admitted, the fat of the blood becomes deposited in the tissue of this organ, and to such an extent as to constitute from 30 to 50 parts of its solid portion. The Liver likewise suffers, fat being deposited in this viscus whenever the respirations are reduced, *or when some substitute for fat*, as alcohol, is introduced."

Action of alcohol on blood and liver.

that was not said previously, and does not answer my objections; for, *if Dr* LEES'S '*facts*,' *viz. that the rum in Jackson's case caused him to be colder and shortened his life by choking up his furnace, be right*; *and Dr* HORNER'S *theory, viz. that the rum by slowly combusting in the lungs kept up the animal heat and preserved life, be wrong,—how can the* NARROW VIEW DR HORNER *takes be right?* *

As regards Dr LEES' friend, his arguments are simply "cold broth warmed over again." There was "cauld Kail in Aberdeen" "a long time ago," and it appears there is "cauld Kail" "warmed over again" in *Dundee* now. † "Bonnie *Dundee*!" thy Culinary-College-Professor throws Boethius, to whom thou gavest birth, completely into the shade! Style of our opponents.

There is no doubt that the letter signed 'JAMES MURRAY M'CULLOCH,' is in that person's handwriting, neither is there any doubt *who* the author of that letter is. ‡ Children will sometimes themselves prove their paternity by striking family likeness. Again, I say, away with such teetotal advocacy!

A HATER OF TEETOTAL, AND ALL OTHER KINDS OF, CANT.

Wass-bank-Top, Sep. 25, 1855.

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* This quintessence of imbecility is printed by its author in italic type! Need we say, that we do not admit Dr HORNER'S *one view* TO BE right. The single fact from which Dr H. professes to draw his erroneous theory, is one thing—the theory founded thereon another. With intolerable stupidity, this writer confounds together a fact—a *view* of that fact—and a *theory* founded on it!—as if *object—spectacles*—and *brains* were all one.

† It seems that this writer—*and* Mr JOSEPH SMITH of Coxwold, who appends another thoroly *Musprattian* puff concerning the Duke St College—are so obfuscated that they cannot distinguish DUMFRIES from *Dundee*! This fairly leads to the supposition that 'the Cant-Hater,' of Wasp-bank, is the identical *Joseph*, of Coxwold.

‡ So, it seems, the Editor of the *Easingwold Chronicle* (Mr GILL) shows the letter of one correspondent to another. We suspected that before—but he wrote to *assure* us that we were in error! Of course, we need not to tell *our* readers, that, in every sense of the word, Dr MACCULLOCH'S letter is as *independent* of any prompting of ours, as the letters of Mr JOSEPH SMITH himself.

BLACKWOOD'S MAGAZINE.

IN the preface to our first volume, p. xii, published in December 1854, we charged *Blackwood* and the *Leader* with the criminal folly of assailing a fictitious Teetotalism, and gave seven examples of the fact. We are not alone in our impressions.

The Glasgow *Commonwealth*, edited by Mr P. BAYNE, the author of what the *Leader* allows to be an admirable and philosophic work (~~*The Senses and the Intellect*~~), has the following observations on the article against Teetotalism in *Blackwood's Magazine* for January 1856, which the *Leader* eulogizes as "a well-timed article on Teetotal-nonsense."

"There is one joy which, in all honesty and humbleness, Temperance Reformers may yearn after. Oh for a thrill of

'That stern joy which warriors feel
'In foemen worthy of their steel!'

Want of principle in the opponents of Temperance.

It is not that our opponents are intellectually feeble. We claim no monopoly of shrewdness, liberalism, or philanthropic ardor. *It is that they will persist, despite entreaty, appeal, and defiance, in unmanly and unfair representation.* We are informed that we are a set of weaklings and fanatics; our arguments are prejudices, whims, crotchets, delusions; a complacent sneer, more or less tempered to the shorn lamb, is thought quite sufficient to dismiss us to oblivion. Well, so be it; but our complaint is—and we make it once more broadly and fearlessly—that our adversaries will not come to close quarters. We taunt them with the declaration that they are afraid to take the measure of our weapons—that they do not dare to look our arguments in the face—and that *they outrage common honesty in cutting, with their leaden swords, at argumentative images of their own devising, slanderously imputed to us.* A man with a pen in his hand, one is sometimes tempted to think, conceives himself bound by other laws than those which prevail in honorable society. There is something in the glance that passes between man and man, in open conference, which burns up a certain amount of preliminary twaddle, gratuitous falsehood, groundless assumption, and that declamation on truisms which is the grand distinguishing feature of the bore. But one who waves the pen-sceptre may exercise the royal right of expatiating, to his heart's content, in complacent and irrelevant maundering. Urged by hunger, *un*restrained by honesty, and aided by a certain filminess of intellectual and moral vision, he may deliberately *commence* his argument with the implication that his opponents are ignorant and stupid almost beyond conception. With the opponents of total abstinence this has been conspicuously the case. Dishonestly eluding, or dishonestly ignorant of, the *real* arguments of Temperance Reformers, *they have persistently driveled out truisms which no one disputed, and gravely propounded, as indisputable facts, what were impudent falsehoods.* We speak strongly here, and we think it is time. By all means let us be demonstrated imbeciles, but we will not have it done by vociferating that we do *not* believe truisms, or insisting that we *do* believe absurdities. It is the law of society, that a man with a flaw in his honesty has no claim to politeness; and our assertion touching our opponents is, that they refuse us common honesty."

While on this topic, we may as well give a few illustrations of *Blackwood's* honesty with a circumbendibus: premizing, that in its number for November, 1855, it distinctly sanctions Professor Carpenter's dictum that alcohol is a poison, and a bad element for warmth.

1. "As the people who in old fable believed their territory to be desolated by some *supernatural* [did *they* believe it to be supernatural?] Dragon, fled hither and thither in ignorant terror, instead of calmly examining the evidence of the animal's devastating power, and assigning to *it* [the *super*natural?] a place in Natural History—so the well-meaning world is driven frantic by the very name of that *instrument* which has been *perverted* to so much evil. ... No opportunity is given for calm, dispassionate consideration of the *real manner* in which it accomplishes its mischief, and the *true* nature of the *proper* remedy."—p. 103.

Teetotalers frightened out of their propriety!

So, the Dragon-of-Drink has a history parallel to the Dragon of Fable! Teetotalers—"the well-meaning world," as *Blackwood* calls them—are scared out of their wits, not by "the *Doings* of Drink," as they call it in their journals—not by the *reality* of "so much evil," or "the *real manner* in which it accomplishes its mischief"—but *only* by its NAME! *Al-kohol*, 'the fiend,' has only to be uttered, and straightway the Teetotaler, like an Arabian of old in the presence of al-*ghoul* or af-*freet*, trembles in every limb, and what little sense he had, crystallizes within the inmost chambers of his brain!

A not very faint impression has been entertained that the Teetotalers had been exceeding-busy in dissipating certain 'Popular Superstitions' as to the nature of Alcohol, and in diffusing nearly *all* the knowlege that exists amongst the people, as to the Chemistry, Dietetics, Physiology, and Pathology of the whole question of Strong-Drinks! Long years ago, we have seen *advertized* books on the Chemical History of Alcohol, the Physiology and Pathology of Alcohol, etc. But, it seems, all this is delusion—they have trembled solely at a *name*—written solely about a *word*—appealed only about an *appellation!* "The great Delusion," argues *Blackwood*, has had a purely subjective origin—has been a *delusion* of the watery brain!

This is not all: for, unless *Blackwood's* zeal has driven correct ideas of grammatical antecedence out of his head, he assures us that the Teetotaler's endeavors are directed to the very absurd and worthless object of driving *it* (the NAME of the instrument) out of existence, so that, as he further says, no opportunity is given for considering the real manner in which *it* (the NAME) accomplishes *its* mischief! A man who writes such slip-shod English, may well enough string together "the Lies of the Cavaliers," but we can *not* expect from him anything like compact common sense. Nor are we doomed to disappointment.

Having thus fabulized *our* position, he proceeds more truly to describe his own. The strut of our histrionic philosopher rises to the dignity of—farce.

2. It is "incumbent on those who *feel* that they *can* handle the matter BOLDLY and FREELY, to do so. We, *modestly*, claim to be in that position."

Handle *what* matter? The paper is an elaborate piece of twaddle about what the author *says* that he *sees* in Teetotalism, but which cer-

tainly does not exist there to *be* seen. The philosophy of the genuine matter, that of the cause and cure of Drinking, is left just where it was found. Instead of producing a philosophy of his own, he contents himself with misstating that of others.

How handle it *boldly?* He writes to a prejudiced circle, on a question in which appetite and habit are the chief-counsellors: writes where the Teetotaler is not allowed to respond. We deny the boldness, while we admit the brass.

Handle it *freely?* Yes! *too* freely perhaps, because licentiously irresponsible. Freely is a poor substitute for 'fairly.' He lays about him with a fury that is almost marvellous—screaming out at the terrible Dragon of Sobriety which his third tumbler of toddy has raised up in his heated cranium—"ABSURDITY, TYRANNY, BLASPHEMY"—till we have all the *wud* of the old *Noctes Ambrosianæ* without a particle of their wit. ‖ (If things progress with *Blackwood* crabwise, we must begin to understand the 'wood' as descriptive of a literary quality rather than of publishers.)

‖ *Wud*, is Scotch for *mad*, or wild.

3. "We must take man with his passions and propensities such as they [naturally] are. We shall make an imperfect piece of work if we begin [what?] in the supposition that he is to be *stripped* of them."

As corrected, a very true truism this—but not the less an impertinence, since Teetotalers no more propose to strip man of his passions than of his skin. The second section of our First Volume (printed in 1853) is devoted to a discussion of the primal question, Whether man, by *nature*, has any desire for special toxic stimulants? We decide in the negative—that an Alcoholic-passion is no part of his original nature: and if it be *acquired* by himself, it can be *abolished* by himself. The objecter, however, left out the essential word 'naturally.' He seems to concede, indeed, that we have not the objective stimulant of the passion ready-made, for he says—

Difference between *natural* and self-made propensities.

4. "The Deity has given him the faculty to *create* stimulants, and the *propensity* to enjoy them."

Not so fast, if you please! The Deity has given the *faculty to create* instruments of pleasure, and also the *faculty to create the state called a propensity* (i.e. a *propension* or habit)—but we must not allow this self-created 'propensity' to take rank amongst the original *God*-created "Passions and Propensities of Man"—i.e. of man *as* man.

Illustrations, like windows, let light into a subject: and lay bare lurking sophisms. Let us, then, reduce the generality to a speciality.

"The Deity has given to man the faculty to create Dice, Thimble-riggery, and other instruments of gambling stimulation, and the *propensity* to enjoy them. ERGO"—what, Mr Black*wud*?

5. "On the grounds of simple reverence," etc. [we leave out the *cant*, to get at the kernel of the argument], we will not admit that *any* of his *gifts* are a pure curse," etc. etc.

Who asks him? If man himself *creates* alcohol and bowie knives, then they are not the *gifts* of the Creator, except in the very same sense that Idols of gold, or silver, or stone, are such, tho "graven *by art* and *man's device*" (Acts xvii. 29). There either is a distinction

between Nature and Art, Divine work and Human work, or there is not. If there be *no* such distinction, then "*whatever* is, *is* right"—equally right *or* wrong—and in justifying drink, the critic justifies every kind of diabolism as well. If there *be* a distinction, then we claim the benefit of it in this argument, and will not be sophisticated out of it. *Blackwood* cants about reverence, and screams 'blasphemy' against others while in the very act of contravening Bible doctrine, and making scripture truth of none effect:—"*Lo, this only have I found, that God hath made man upright; but they have sought out many inventions*" (Eccl. vii. 29). Blackwood argues point blank, that all man's *inventions* are God's gracious *gifts!*

The critic denies scripture.

6. "Nay, we believe that it is *out of his passions*, and the means of gratifying them, *that*, through much peril and calamity, *Man works out* the high destiny of civilization and *purity* for which his race was created."

There is no accounting for beliefs: for credulity often transcends counting. We can understand how a man rises superior to disease by the latent energy of vitality—how the purely inclined will of a soul can subdue and conquer hostile passion and impurity, and rise above temptation—but we can *not* understand, and therefore we can *not* believe, to borrow the beautiful language of *Blackwood*, "that it is OUT OF HIS DISEASE THAT MAN WORKS OUT HIGH HEALTH—and THAT IT IS OUT OF HIS BASE PASSIONS THAT MAN WORKS OUT SPIRITUAL PURITY." We refuse to believe that Virtue has so bastard a parentage.

Passion *not* the parent of purity.

We quarrel, not only with the general doctrine, but with its special application. Go to the noblest Biographies, and show us, if you can, that Vice is the mother of Virtue, or passion the source of spiritual life! Gather your instances, induct your facts, and show us, not whose virtue was *tested* in temptation, but whose virtue was made out of it! * Gambling, Drinking, and similar things, not only blunt the mind's perception, but, in the long run, and in the mass, *unhinge* the pivot of the soul's self-government.

Besides all this, we must recall the old fact, that we have no 'alcoholic-passion' in our constitution, and therefore such generalizing as the critic indulges in is simply impertinent.

7. "Remove *any* of his appetites and propensities, we remove the *rich-materials* out of which he is to work his purification; for purity is not negative, —*the non-existence of what is gross*— but the creature of *its* conquest," etc.

Now apply this flux of words to a practical point, and see how it looks. "Remove the *dice*, or the propensity for gambling, and you remove the *rich-materials* out of which he is to work *his* purification, for purity is not negative, but the creature of *conquest*"!!!

Is the man then to gamble a little, and *play* with the dice? or is he to—abstain? If the latter, then, in like manner let us act with Drinking. *Conquer* that vice, and destroy its instrument, and then go on to conquer something else. Does *Blackwood* believe that we shall

* Had the Critic been JOSEPH, we suppose he would have stopt to dally with Mrs POTIPHAR, instead of *teetotally* flying from temptation! But who was wisest? HE has declared, who said—"*Lead us not into temptation, but deliver us from evil.*"

Purity misconceived.

have no useful *natural* propensities left behind to regulate and control, that he contends so strongly for wasting our strength in battling with an useless and self-engendered appetite?

By another grammatical blunder, purity is made to be the creature of the *conquest of the non-existence of what is gross!* But, no doubt, he meant "the conquest of the *gross*." Here, however, he falls into paradox—since PURITY is precisely what he says it is not—namely, a soul *without grossness*. An angel or a woman may be *pure*, who has never sinned—or a man or woman may become pure, who *having* sinned, have *conquered* sin. That, however, is the TEETOTALISM *of the Soul*—the very state this illogical critic is arguing against.

Nor is it our function on earth to *subdue* our passions and appetites as the critic urges; but only to subdue *disordered* and *unfit* desires: amongst which MUST be placed the lustful use of exciting drinks which have no fitness for the body. If they *have* a legitimate use, state it and prove ti, and the whole question is at an end. All else is leather and prunella.

8. "The *fully developed man* has a natural desire to enjoy himself by the consumption of exhilarative liquors. Are we to compel people to be sober in spite of their appetites; or are we to cultivate these appetites until they produce *honest grain* instead of *tares*?" p. 104.

New definition of man!

Ha! ha! ha! ha! The 'fully developed *drinking* Man'—

> Whose nose is blossom'd all o'er,
> And flames with a carbuncle glow—
> Whose life is a long-drawn snore—
> *He*, he, is the true *homo!*

How to define the genus *homo*, has been long a puzzle amongst the logicians: even from the time that a great ancient proposed to call him, "A featherless *biped*." *Blackwood*, at last, plucks the Goose of difficulty—"Man is the fully-developed biped that has learnt *to brew and be fou*"! Where are the cap and bells? Here is a worthy and successful candidate. Let him wear the honors upon his brow—o'er all the ills of life victorious! Or parody his philosophy more gravely.

"The fully developed Man—*créme la créme*—has a natural desire to enjoy himself at Crockford's or other hells—by the handling of dice, and other instruments of the stimulating passion, puritanically designated gambling"—ERGO—"The appetite for (such) stimulants is a (*necessary*) element in the best developed races."

Is that what you mean, Mr Black*wud*?

The critic, however, while talking of culture and restraint, actually approves of the principles he professes to be condemning. "The Savage," says he, "drinks *without stint*. The present English gentleman, with his cellar fully supplied, uses its contents *rationally*, if *not beneficially*." So far good. Knowlege and culture teach *restraint*—but what of the well-bred Gentleman of the *future* time? May he not so far progress in consistency and culture as to learn that the use of seductive drinks can not be *rational*, if they are *not beneficial*?—and that it is no less an absurdity in human culture to sow in*toxica*ting liquor and expect a harvest of *sobriety*, than in agriculture to sow tares and expect wheat?

PROFESSOR LAYCOCK AND HIS RIOTOUS STUDENTS.

Social and Political relations of Drunkenness. Two lectures by THOMAS LAYCOCK, M.D., Professor of Medicine in the University of Edinburgh. 1857.

AMONGST the most erratic and *noxious* events in the history of Temperance societies must be ranked the delivery of these *semi*-teetotal and *anti*-total-prohibition Lectures under the special auspices of Mr T. Knox and the Committee of the Edinburgh Total Abstinence Society—lectures to which the inviters of them were by courtesy precluded from giving any official repudiation, and to which, indeed, by manifest hostility towards independent refutations, they have rather given a sanction than a disclaimer. The peculiar circumstances have invested these professorial prelections with a pernicious influence and an 'authority' which their mediocrity and pretentiousness could not otherwise have attained. Put forth on their *own* merits, they would have fallen flat and dead upon the public ear: while delivered from the platform of that temperance which THEY betrayed, they were eagerly seized by the enemy and ventilated thrö the hostile press of Scotland. Of course, in the *abridged* form in which they appeared in the *Scotsman* and other crapulent organs, the most trenchant and hostile passages were selected, mostly stript of the modifying context: and we are glad to record the fact, that, *as now printed*, the first lecture assumes a less hostile position towards some of the subordinate dogmas of teetotalism than did the original newspaper reports.

It is not our intention to enter into any elaborate examination of these now authentically published lectures, but simply to furnish such quotations as either speak for themselves, or the fallacy of which may be indicated by the briefest comment. J. M. Macculloch, M.D. (after the subsidence of a week's rioting in Edinburgh) lectured in reply to the first discourse. His first attempt indeed was met by *riot* and *rowdyism* on the part of the medical students, for whose conduct (that of breaking up by *filthy* language and *physical* force Dr Macculloch's meeting) the professor publicly returned thanks. Dr Lees, on the part of the British Alliance, answered the second lecture in Queen Street Hall: but of course *the press* never published the refutory lectures, so that the antidote might circulate where the poison had been injected. The refutations, nevertheless, were very widely circulated, and our own replies to the chief objections urged against Prohibition, will be found embodied in the *Sequel* to the Alliance Prize 'Argument,' in the places noted in the index.

Professor Laycock starts with professing to "penetrate the scientific ground from whence his conclusions come." He defines a drunkard as "a man who habitually *impairs* or *abolishes* his mental and bodily powers *by the use* of poisonous drinks, the effective constituent

of which is alcohol." This is very good, and succeeded by a good definition.

Poison.

1. "*Intoxication*, in its medical sense, means *the morbid state induced by any poisonous agent;* so that, strictly, a man who impairs his faculty by other drugs, as Ether, Opium, Tobacco, or Indian Hemp, intoxicates himself, and in fact the drugs I mention, are used by mankind for the same purpose as alcoholic drinks."

The Indian Massacres—mostly perpetrated by the Sepoys under the influence of *bhang* (or Indian-hemp)—are an appalling comment on this statement.

2. "*Alcohol, in common with all poisonous agents, produces, when taken into the blood, results which vary in extent according to various circumstances,* but under any circumstances, if taken in sufficient quantity, it abolishes the functions of the brain."

The truism of the first lines is not practically applied. *When* does the abolishing begin? Is it a work of progression and degree, or does it occur at once? Is the evil in the quantity of alcohol?—and if so, which and what quantity?—or is it a question of *quality?* Does the following read as a sufficient warning against the beginnings of evil?

3. "When alcohol is taken in *small quantities*, its immediate effect is to stimulate the activity of all the organs of the body, and to excite an agreeable sensation of vigor, both bodily and mental. The blood courses *more rapidly* thrö the blood-vessels, the voice is more sonorous, the eye more bright; the muscular system braced up,—in particular, the intellect is felt to be clearer—the imagination more vivid—the thoughts more free,—in short, all the faculties are exalted."

All this is abnormal and of course injurious, like every illicit source of pleasure. That it *is* so is strikingly exemplified in the *consequences*, which establish the old truth, that *Wine is a mocker.*

4. "*It is rarely that the drunkard holds his hand at this stage of the poisoning;* he desires to have still more intense enjoyment, for *the exciting agent has itself developed the appetite for pleasure.* He takes more; and then its principal effect is to derange the functions of the nervous system. This is manifested most distinctly in the derangement of the thoughts and of the will. *The mental balance is impaired; the ordinary power of self-control is sensibly diminished. Hence the individual manifests more conspicuously the infirmities of his nature,* whatever these may be.

Wine is a mocker.

"*If the drinker stops at this point, then the system busily expels the poison from the blood thrö every practicable outlet,* and after a while the individual returns to his usual condition, except that he more or less *experiences a sensation of languor and depression,* the natural result of the unduly excited activity that preceded it. Now alcohol excites these various changes in the mental state in virtue of its action upon the brain, that is, upon the organ of the mind. And *if the alcohol were to remain permanently in the system of the drunken man, his mental derangement would also be permanent; in other words, he would be insane.*

"Now, if there be a predisposition to any disease of the brain or nervous system, alcohol will excite that predisposition into activity. But *smaller doses will be as effectual in persons thus predisposed as large doses in persons otherwise constituted.* Insanity is thus often induced where there is a family predisposition, or paralysis and various other affections of this kind.

"And this is the sum of the psychological influence of alcohol and other intoxicating agents on the brain; *destruction as to the organ of the moral will,—development as to the organ of animal will.* But what a fertile source of crime and wretchedness!"

In introducing the following, which are amongst the most striking passages of the pamphlet, we need but remark, that it is grossly *inconsistent* on the part of Society to treat as *insane* the temporary and the chronic drunkard, while on the one hand it licenses and legalizes the monopoly of the Traffic in that Drink which creates the insanity; and on the other, after having shared in the manufacture of this madness, holds the victim *responsible* for the (often unconscious) actions which he performs in that insane state!

Is the drunkard responsible

5. "I express distinctly my conviction that a *just and true law should consign the habitual, will-less, soul-less drunkard to the restraints of an asylum.* Far more needful is it in his case than in the case of hundreds now treated as irresponsible beings, and deprived of freedom.

"Then what is the fate of the children? Death by suffocation or fire, or starvation, or neglected disease and injury, is to many a happy lot, because it takes them away from the evil to come. If they survive these perils, they are worse than orphans, inasmuch as they are either left without control or advice, or deliberately trained to vice, and especially to drunkenness, prostitution, and theft. It has been ascertained *that 85 per cent of the children received into the Original Ragged School in Edinburgh, at its first opening, were the children of drunkards.*

"Attempts have been made to estimate the amount of crime caused by drunkenness. The judges of the land have declared that a very large proportion is due to it. But they refer only to the direct results; they *have taken no count of the indirect,* as manifested in the children of drunkards, whether in consequence of a vicious cerebral organization, of bad parental example and want of all moral training, or of an actual training to vice. We have no account how many of our dangerous felons are the children of brutal drunkards, or how many of our *educated castaways owe their want of self control to the inherited infirmity of a parent.*

"More than all other vices, it deteriorates the whole nature of man, because *its peculiarity is to strike at the very root of all goodness, whether of intellect or will.* It deteriorates the material organ, and thus renders all healthy and fitting mental action impossible. This deterioration being transmissible, it is apt not only to develope vice in the man, but also in his offspring to the third and fourth generation. From its multitudinous relations, it is, in fact, *one of the greatest political questions* of the day."

A great *political* question.

Truly does the professor exclaim, "*What a question for a great statesman!* All attempts at systems of education, at the reformation and management of criminals, the prevention of vice, and the diminution of sickness and poverty, *will fall short of effectiveness, so long as this leprosy* is continually spreading thrö the population."

The explanation of the *origin* of Intemperance, is in part true, and in part defective. It is too abstract, and promises more of solution than it realizes. Words and truism heaped together do not constitute real philosophy. The professor shall speak for himself, however:—

6. "To certain animals (and man is amongst these), God has made it an inherent and necessary part of their nature, that they shall not only feel happy, but always desire to continue in life and enjoy happiness. This is *the instinctive*

desire for life and for happiness. In virtue of this desire, they necessarily strive to attain those things which give pleasure, and since, by the Divine arrangement, those things which give this instinctive pleasure, are also necessary to the proper co-operation of the organs, it happens that while they are striving after what will give pleasure, they also seek after what will maintain life. *Consequently, that which according to the will of God is desirable, is also beneficial.* It follows, therefore, that so long as man, in common with all other animals that have feeling, obeys the will of God, as thus expressed in the conditions of his existence, *his desire for pleasure is not only innocent, but to seek its fitting and lawful gratification is a duty.*

Truisms on pain and pleasure.

"But let us pause here to dwell upon the condition of performance, namely, *a knowlege of the will of God concerning us.* The will of God in our redemption is revealed to us in his written word; his will in our creation and preservation is revealed to us by scientific research.

"I have only spoken as yet of good and of happiness; I will now speak of evil and suffering. The *harmonious co-operation* of the various machines which make up the entire individual man, *is apt to be disturbed by various causes*, such as injuries to them, or the want of the things necessary to their action, as air, food, drink, or imperfections in their construction. This imperfect fulfilment of the will of God is evil, and when it occurs, the feeling of pleasure in the soul ceases, and that other and antagonistic state of the consciousness takes its place, known as pain. *Now, however, there arises a desire to remove the pain, that is, to recover the pleasure*, and to avoid and remove the circumstances or things that give pain or interrupt the pleasure.

"*We only feel thrö our brain the sum of their working in the indefinite sense of health, and pleasant existence when they work well*, or the opposite thereto of languor and pain when they do not work well. Now it is the effect [property] of alcohol *to excite* this pleasant sense of health and vigor; it exhilarates, for a time it invigorates, and thus causes a stronger sense of enjoyment. On the other hand, *where there is the feeling of bodily languor and exhaustion, it removes for a time at least that painful feeling*, and often substitutes for it a pleasurable state. The desire for alcohol then has a twofold origin.

"When the brain works as the organ of mind in accordance with the will of God, that is, either intellectually or morally, a pleasant state of the consciousness is felt. That is the state of a good conscience,—hope, joy. Under the contrary circumstances, an unpleasant or painful state occurs, that is an evil conscience,—anxiety, sorrow."

The desire for alcohol has *not* a twofold origin: it is the effect of *one cause*, the action of the drink. What the professor perhaps means, is, that the *desire itself* is COMPOUNDED of two elements—present pain and prospective pleasure.

7. "I have hitherto spoken of man in his relations to his Creator and his own consciousness; but *it is one of the necessary conditions of his happy existence that he shall exist as a social being.* He has, therefore, social desires and aversions, and these constitute the sympathies and antipathies of his nature.

"*And hence, in reference to alcohol, the origin of all the drinking customs of society, whether domestic, hospitable, or convivial.* Every kind of emotion finds its expression in social participation, and its development or solace in alcoholic drinks.

"Youth and manhood are, therefore, the ages *most tempted* to indulge in convivial excesses, as they are to all other pleasures which depend upon the free use of the instincts. It is from this period of life that drunken habits date so often their beginning.

"*Idleness*, and want of sufficient stimulus, are *temptations* to the gratification of the desire for pleasurable excitement by the gratification of the instincts, and especially for that induced by alcoholic drinks.

Social temptation.

"In this country the cessation by the laboring population from labor on the Sabbath, *constitutes that a day for idleness and enjoyment*, unless it be fully occupied with religious duties; and as alcoholic drinks offer the readiest, indeed the only source of pleasure to many, they are taken as a matter of course. *Hence Sunday drunkenness.*

"But these stimuli are often taken for the purpose of removing or alleviating pain or misery; we will therefore enquire next into the conditions which develop the desire for alcoholic drinks, by inducing distressing or painful sensations. Fatigue, whether of the body or mind, is a painful sensation; the result of excessive cerebral or muscular exercise. It indicates *that the materials necessary for the healthy action of the organs are wanting in the system*; *alcohol takes the place of these as a stimulant to the natural functions.* Hence it is that it is given or taken to urge men to efforts beyond their natural powers, or to re-excite their flagging energies,—a step necessarily of a dangerous character, and *sure to lead to the habitual use of the drug.*"

Dr Laycock next approaches the vexed-question of medical use, dangerously recommending people to become therein their own doctors!

8. "When individuals have been enfeebled by any of these physical conditions, they become irritable; all depressing emotions act more powerfully on the brain, and excite more readily that cerebral pain known as depression of spirits and heart-ache.

Medical use.

"Now nothing alters this unhealthy condition, and gives temporary relief, so effectually as alcoholic drinks. It is for this reason that they have been considered, from time immemorial, as the best solace for the care-worn and sorrowful. Long ago it was said, by a Chaldaic writer, author of the Proverbs, ch. xxxi, 'Give strong drink unto him that is ready to perish, and wine unto those that be of heavy heart. Let him drink, and forget his poverty, and remember his misery no more.' Abstainers, I understand, have concluded that this passage was meant to be ironical, but that I think it is not. *It contains a practical medical truth disguised to modern minds by its oriental turn of expression.*

"Nor is it mere depression of spirits that indicates this special medicinal use,—the condition of the heart and the digestive organs must be taken into account. It is in this direction that sound knowlege is required by the public at large, so that they may rightly use what, rightly used, is a great blessing. *Undoubtedly the use I recommend is a medicinal one*, but can it be expected that men and women would think it necessary to go and consult a medical practitioner whenever they have the heart-ache or are overwhelmed with sorrow? I don't know a more important point for the total abstainers to investigate in reference to their pledge than this."

The reference to the old Jewish custom is unfortunate. The Professor should eschew Biblical criticism. His interpretation of the text in Proverbs, is not 'disguised' to occidental minds only by its 'oriental turn'; for, if we turn to the old Jewish and oriental commentators themselves, we find it was equally 'disguised' from *them*. The professor is simply foisting his own crotchet into the old Hebrew text—the victim of a verbal *equivoque!* (See our discussion of the text in volume ii.)

The Pledge allows the 'medical use'—tho we don't believe in

soothing sorrow with gin—but he who becomes his own doctor, in *this* respect, has indeed a fool for a patient.

Dr Laycock reminds us of a passage in our earliest studies of *Logic*—that book of Wolf's, written nearly two centuries ago. It will be found under the caption 'Of Inventions':—

Wolfius.

"If that which the solution prescribes is indeed practicable but unservicable, nay detrimental, the solution is false. As if one should recommend the drinking Wine to a person under disquietude of mind in order to banish cares, the drinking is indeed practicable, but yet his disquietude of mind is not thereby dissipated, nor tranquillity permanently restored. A person drinking in company with others may indeed, *for a time*, forget his uneasiness; but when by himself again, his uneasiness recurs, and therefore is not removed. And consequently the solution is false."

We cannot concur in the teaching that immediately follows:—

Paralogy.

9. "The principal CAUSE of drunkenness, lies in that love of pleasure or desire for happiness *which is an essential part of the nature of man:* we must, therefore, inquire how it happens that alcohol and other intoxicating drugs *minister* to this desire. We must penetrate into the deepest springs of human action."

Now, whatever Dr Laycock may have *meant* by what he has written, we protest against finding the CAUSE of a vice in a *desire for pleasure*—in an essential part of man's nature—and in that, the gratification of which is a fitting and lawful act of *duty!* We protest against ascribing the foolish and vicious act of drinking, or the corrupt *lust for liquor*, which is of the essence of Intemperance, to the innate and deepest-springs of *human nature*. The theory is at once absurd and blasphemous. *

* In a valuable work, "*Western Africa, its history, condition, and prospects,*" by Rev. J. L. WILSON, eighteen years a missionary, the author says: "Like other branches of the human family, the Africans *are* fond of strong-drink, and, when they have the means, are much addicted to intemperance. They greatly prefer the distilled liquors of Europe or America to anything they can prepare themselves, and New England rum always commands a high premium. The only intoxicating drink of their own production is the palm wine. This is *merely the sap of the palm tree*, obtained by tapping it under the leaves and suspending a calabash to catch the liquor as it flows, or by cutting the tree down and taking the sap at the upper end of the trunk, where an orifice is made, from which it continues to flow for several days in succession. The wine is of a pale whitish color, *of a sweet but a peculiar taste when fresh*, but when fermentation commences *it acquires a bitter taste*, and is about as strong as hard cider. It must be taken in very large quantities to produce drunkenness. Often, instead of having it brought to the house, large parties repair to the wood where the wine is made, and spend the entire afternoon in drinking and frolicking, *often ending in quarrelling and fighting*. Distilled liquor seems to have a different effect upon them; it stupefies rather than excites. The African cannot indulge for any length of time in these excesses. His constitution will not endure the steady use of intoxicating drinks for a considerable length of time, and a drunkard of this race seldom attains to old age. The Banaka people, on the Gabun coast, are sufferers from European intercourse. Foreign vessels have had no trade with them until within the last fifteen years. *Previous to that time they had no relish for ardent spirits,*

How light wine *feeds* Intemperance; not prevents it.

There is in man by nature no more desire for strong-drink, than there is a desire in monkeys for pipes, cigars, and snuff. Of course we don't dispute the truism that there is in man's sentient nature a *liability* to corruption—as in his body a *liability* to cholera and typhus. But we deny that the mind or the body is THE CAUSE of either corruption or cholera. These are *induced* effects, whereof man is the *subject* and the *victim*—not the CAUSE. Conceal, distort, or confuse the question as the professor may, with the jargon and pretence of 'philosophy'—the old teetotal truth remains, that the *sole cause* of Intemperance is the action of the Drink—which *creates* the lust for itself, not 'ministers' to a prëexisting natural and normal desire.

The next extract presents the professor's solution of a fact—that is entirely imaginary. There *are* no teetotalers who seek to *compel* men to abstain from strong-drink.

10. "The great truth is that all societies constituted of aggressive reformers of morals, contain men who, combative in their nature, and endowed with an energetic will, appeal instinctively to physical force. They find moral coercion impracticable; they therefore appeal to physical coercion; *failing in converting people to total abstinence by example and persuasion, they would compel them to it by total abolition of the traffic in the drinks.* They practically argue that the SOURCE of the vice is in the THING, and not the *desire for it.*"

Solution of a *non*entity.

We plead guilty to arguing, both practically and theoretically, that the lust for alcoholic stimulants is the *effect* of the use of alcoholic stimulants; and we maintain, moreover, that when the professor argues that "the *source* of the vice (lust for strong-drink) is in the *desire* (or lust) for it"—he is not simply setting the cart before the horse, but he is making a vicious desire its own parent! Perhaps the doctor was unconsciously thinking of 'covetousness,' where the *thing* coveted is not the source of coveting; and thus fallaciously extended the comparison to the case of strong-drink, which is in full contrast to that.

11. "Least in importance, because the rudest, the simplest, as experience has shewn the least effectual in the long run, and not without danger, are all kinds of denunciations, *meddling restrictions*, and irritating *police laws*. Let us examine why they are so, and in doing this grapple at once with the fundamental principles of government and law.

Confusion between *Prohibition* and *License*.

"*Abundant* experience shews that the real operation of ALL SUCH ACTS upon the people is to familiarize them with habitual and systematic evasion of the law. *Unlicensed retailers will sell drink, and set up shebeen shops; drinking clubs will be established.*"

Partly true and partly false. We contend for no meddling-restrictions, no wild denunciations, no police irritations—but for a popular law of Protection, founded on *Prohibition*, with a clean sweep of the whole thing. A law made by the people will *not* familiarize the people to evasion of it: but even partial prohibition (as on the Sunday) has

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and *it was with difficulty that any of them could be induced to taste of it in the first instance.* But those days of happy ignorance are gone; the taste *has* been ACQUIRED, and no-where is rum now in greater demand. How very important it is that the influences of Christianity should be thrown around these people before they are carried away by this fearful temptation."

not increased, but, as the Scottish police testify, greatly lessened *illicit sale*. What, however, would the professor be at? Does he oppose *license*? His argument does—but, further on, we learn that *he* does not! He proves too much, and thus answers himself.

12. "No publican should permit drunkenness in his house on pain of losing his licence; and, in particular, no one should be allowed, whether publican or not, *to turn* a drunken man out of his house into the streets *without sharing the responsibility of his acts, or sending some one to take charge of him.*"

If the law has a right to prohibit the turning of a drunken man into the street, it has clearly the right to prohibit the turning of a sober man into a *drunken* nuisance.

"Every man committing a crime when drunk, should be considered *more guilty* than if he had done it when sober, for he has added the crime of destroying his own power of self-control to the other."

This is both absurd and impracticable: for, in the first place, a drunken man is an insane man, and even if we could absolve society from the responsibility of making and licensing the machinery which contributes to this manufacture of insanity, and lay the *whole* of the crime of destroyed-sanity at his doors, *so soon* as he *becomes* insane he is as *morally* irresponsible as if he were *born* insane—the insanity being itself the punishment * of a previous course of mistaken or wilful action;—and, in the second place, you could not make a publican *responsible* for 'murder' committed by his excited customer—or if you could, that would at once put an end to the Traffic, since *who* would carry on a trade involving such frightful hazards of interchanged responsibilities between vendor and victim?

13. "Perhaps *a reduction in the retail strength of ardent spirits might be worth consideration.* All attempts at adulteration should be met with a withdrawal of the licence; for the drugs used to adulterate, by inflaming the stomach and enfeebling the nervous system, *increase largely the temptation to drink, and aggravate the effects of the poison.*"

The professor does not seem to regard these as 'meddling-restrictions'—yet, undoubtedly, they would be parliamentary interferences with private life and habit. As to 'drugs,' we know of none worse than the alcohol itself, and the *prohibition* of the plural-drugs, while denouncing the prohibition of the single-one, does appear to us a marvelous piece of self-stultification. It reminds us of a current controversy, concerning Opium, which shows how

> 'Men compound for sins they are inclined-to,
> 'By damning those they have no mind-to.'

Opium and alcohol traffic compared.

The philosophical *Examiner* has assumed the office of counsel for the East India Company, and conducted its defence avowedly in reply to Dr Trench, who had said in Westminster Abbey—"If there was one thing which more than another was *a cursed* thing in England's relations with her Indian possessions, it was the traffic in opium. It was a hideous fact, that the government of India raised a revenue of some

* We might be justified in confining him, but we *could not* regard him as otherwise than a madman; his being dangerous, does not make him *guilty*.

millions from trafficking in this poisonous drug, which was so destructive both to the bodies and souls of millions in the east. This was their sin, and it was also ours." The *Examiner*, like most advocates with a bad case, would *blanche* the blackamoor by blackening the Egyptian. The words of Sir Benjamin Brodie are quoted: "My deliberate opinion is, that opium eating is not nearly so fatal to life as spirit-drinking is to us. I do not know any mental disease from opium corresponding with *delirium tremens* from alcohol. I have never been called to attend to any accidents arising from the use of opium similar to those arising from the use of ardent liquors." So fortified, the *Examiner* proceeds: "The cultivation of the poppy for its inspissated juice, is as important to the agriculture of India as that of barley or the vine to that of Europe. It is more beneficial to mankind than either of them, since its produce is incomparably the most important article of the *materia medica, while its habitual use is*, according to the testimony of every trustworthy observer, *less noxious than that of the strong liquors that proceed from barley and the vine.*"

Why is the professor so insistent on *licensing* the sale of the essential drug—of 'the effective constituent'—yet so clear on *prohibiting* the incidental and minor adulterations?—We are glad to perceive, that, notwithstanding much talk to the contrary, there are *some* 'temptations to drink' which the professor would remove by that moral-suasion which has behind it the *back-bone* of Law.

The professor uses against practical Prohibition many arguments equally bearing against social-law in the abstract; and falls into the additional inconsistency of declaring that he does *not* oppose all prohibitions and laws of restriction! He argues about a perfect *State* and perfect *Laws*—things which are not, and never will be—and which, being, would render 'states' and 'state-law' needless. The problem of practical life is to subordinate *imperfect* society to the best law attainable in each age. The 'model law' of reason is to be *subordinated* and *adapted* to the actual humanity. This is a mission we *can* perform, if we WILL it; and to mistake the nature and meaning of this problem, is virtually to abandon the task which is possible, for that which is impossible—nay, it is to ignore that actual gulf of discrepancy which it is our very duty as legislators to bridge. *Solitudinem faciunt, pacem appellant.* The professor makes a fiction, and calls it fact.

The following passage regarding the pledge is quite unobjectionable. As the pledge *expresses* the obligation, not makes it, our duty must be determined by our inward-conviction, as expressive to us of the highest law; nevertheless, a pledge, or a declaration, has *many uses*—and serves both to confirm the strong and strengthen the feeble.

Uses of the pledge.

14. "It is obviously necessary to vows being effective, that there shall be actually operative in the pledger a regard for the opinions of his fellow-men, or for the approval of his conscience or of his God. Now that regard, if habitual, constitutes of itself, in the healthy state, a motive sufficiently powerful to restrain the desires against which it is directed. As to one's fellow men it is the powerful controlling force of public opinion,—as to God it is the strongest feeling—the religious—of our nature. It follows, therefore, that the man who feels this regard is already a moral and religious man to the extent of the feeling, whatever that may be. A sincere pledge is only taken after

these motives have operated on the mind; *it is, therefore, in fact the manifestation in action of the motives.* Hence it is, that sincere total abstainers are usually moral and trustworthy."

An eloquent and just tribute is paid to Temperance Societies.

15. "It is in the collection and diffusion of the *experience* of mankind as to the effects of alcohol on man, and the practical application of that knowlege to the abatement of drunkenness, that the great glory of temperance societies consists. *It is a fact unique in the history of mankind*—a work likely to last as long as the pyramids.

Good.

"To do justice to the labors of the temperance societies in this particular, would occupy too much of our time; I will say no more than this, that they are multifarious and incessant. The practical question is,—are they sufficient to attain the object aimed at? *Are voluntary associations, however powerful, equal to the mighty undertaking? I think not;* and, therefore, more effectual means should be attempted."

Concurring fully in the next statements, we need but observe, that while knowlege will do what law can not, it is equally true that law may effect what mere knowlege will utterly fail to accomplish. We desiderate knowlege *and* law—the latter the expression and *instrument* of the former.

16. "*We never can carry sanitary laws into effectual execution, however just, however simple, however well devised, unless the people—the whole people—are instructed in the conditions necessary to healthy existence.* It is knowlege alone that will lead the people to co-operate in the execution of the sanitary laws, and it is this knowlege which *will* lead the people to do that which no law can reach, and no law *compel* them to do.

"And acts of parliament cannot effect this *unless the convictions of the people as to their justice and importance go along with them. But to right national convictions, national knowlege is necessary,—to national knowlege a well devised system of national education.*"

The *national* traffic in drink counteracts to a vast extent the work of national education; and we can see no sense in licensing a practical source of ignorance and crime on the one hand, and setting-up theoretical counteraction on the other.

Taps *versus* Teachers.

The following is excellent, and shows that the *natural* desire for happiness has *natural* sources of gratification, and needs neither the intoxicating drug alcohol, nor the intoxicating amusements too much recommended by many.

17. "Why should not there be an excursion-train every day, and to suit all classes? A day's visit to nature as she is 'at home' cannot be made amidst a crowd. *She is far more charming in solitude, or with one or two companionable friends.* Crowds belong to towns and cities, not to her. Next to, or co-equal with, the pleasure of nature, I would place domestic pleasures. Lectures, soirees, and amusing speeches, music and capital songs may be all very good in the absence of anything better; but *there is no place like home.*

"There are several sedentary and mechanical operations very favorable to *meditation*, and *quiet, simple, scientific research. Gardeners, ploughmen, shepherds, tailors, shoemakers, masons,* have occupied their minds ere this with matters of thought in every department of culture, and have won themselves a name among men. And I am quite sure that in this direction there is much latent genius, or at least capacity for mental culture, if there were

but a time and a place for their minds to work in; and therefore much has to be done in the way of providing new sources of higher gratification for our general population. *Here, then, are untouched stores of antidotes to drunkenness.*"

Let us add, however, that neither these nor any other 'antidotes' will really avail, *until the public Drink-shop is first suppressed.*

The next sentences shall conclude our extracts—the first referring to 'popular amusements'—the second to Sabbath teaching.

18. "I will venture to say, however, that *deprived* of their meretricious accessories, and purified from what is coarse and indecent, *they may be made available to withdraw our youth from the cider-cellar and the gin-palace*, and to give literary refinement and culture.

Our spiritual militia.

"But besides the time, there is the plant and staff of the Establishment maintained by the nation for *the application of the time.* There are the 45 thousand clergy in the United Kingdom, constituting a large militia embodied expressly to control vice, and there are the 40 to 50 thousand churches and chapels,—all for the Sabbath business of the nation."

This vast machinery would, doubtless, have achieved greater success, and left less intemperance to combat, had it treated the evil in the *right way*, and battled the real causes. But what can the Churches do by pulpit prescription, while the State *licences* above twice the number of *Devil's Temples* to seduce and deprave the people?

Lehre der Nahrungs-mittel: Von Jac. Moleschott. Erlangen, 1853.

In the first volume of our *Works*, p. cxcix., we had sufficiently considered, years ago, the philodoxy of Professor Moleschott, who was only treading in the track of Liebig; and in the present volume (p. 136) we have also indicated the nature of the mistake into which both professors plunged, when regarding *oxygen* as an agent from the action of which it was either imperative or desirable that our 'tissues' should be 'protected.' As error, however, *dies hardly*;—and as the circulation of an extract from Moleschott, in the daily press, is accompanied with the comment that we, in citing him for a specific purpose, produce "a false impression that Moleschott "held the same views with regard to alcohol" as ourselves, we may be excused for again referring to the fallacy.

Fallacy of Moleschott.

"Alcohol does not effect any direct restitution, nor deserve the name of an alimentary principle. Still it passes into the blood. By the oxygen we inhale it is burnt in the blood into acetic acid and water, and finally into water and carbonic-acid. But the oxygen, which decomposes the alcohol, is withdrawn from the albuminous and fatty substances of the blood. *Alcohol, from its greater combustibility,* protects *these constituents of the blood from being burnt.* And if, in addition to this, both special experiment and ordinary experience prove that alcoholic beverages *diminish the quantity of carbonic-acid we exhale,* ... there is a twofold argument for believing that alcohol *moderates the combustion* of the constituents of the blood, and therefore diminishes the first cause of the need of restitution. * Alcohol may be considered *a saving's-box* of the tissues. He who eats little and drinks a moderate quantity of spirit, *retains as much* [what?] *in the blood and tissues* as a person who eats proportionally more without drinking any wine, spirits, or beer. Hence it follows (?) that it would be cruelty to deprive the working man, who earns his frugal meal by the sweat of his brow, of those means by which he is *enabled to prolong the nourishment* yielded by his scanty food. Or are we to abolish a custom which renders abuse possible, to degrade man by demanding of him to renounce an enjoyment, in order that he may not succumb to a bestial-instinct? The monk who requires the vow of chastity does not do greater violence to the true nature of man, than does the physician who would prohibit spirits *because* some men are drunkards. Goethe has given afresh to the contemplation of the world the noble watchword, '*Memento vivere.*' He who preaches the renunciation of *spirits,* transfers us to the Christendom of the middle ages, which by its motto of '*Memento mori,*' has stifled the fairest blossoms of humanity."

A good motto badly applied.

As to the charge of unfairly citing the first two lines printed in capitals. We quoted the sentence simply to show that Moleschott repudiated the claim put forth by the *Westminster Review,* that alcohol was food. Is not *that* the plain and literal statement of the professor? Does our accuser hold that Moleschott afterwards says something *opposite,* or only something *else*? Even if he contradicted himself, which he does not—for instead of saying that alcohol *is* food, he, after saying that it did not deserve that name, asserts quite a different

* See reply to *Westminster Review,* antea, p. xciv. and p. clx

belief, viz. that the use of alcohol *prevents the use of food*. Whether this is a sound argument for its use, is altogether another matter, of which it was not our purpose to speak when we made the citation objected to; but a question which we are quite willing to discuss here and now.

If Moleschott simply asserts something *besides*, but something not contradictory,—how can our ignoring *this*, affect the right impression of *that?*

We will not stop to draw-out in elaborate detail the assumptions and fallacies of the entire extract. Drunkenness is not an '*instinct*' at all, much less is it a *bestial* one. It is an artificially, humanly generated craving. Nor can Alcohol be compared with good and natural objects which possess adapted relations to the normal wants and faculties of man; nor does the teetotaler abstain *merely* 'because' some men are drunkards, but because alcohol is needless and bad, and because the *gratification* derivable from narcotic stimulus is itself a low and unnatural form of intemperance, *tending* to sensualism more and more, and in a greater measure than any practice known in history, actually "stifling the fairest blossoms of humanity."

The physiological fallacy is exposed by the simple substitution of the word *prevents*, or *retards*, for the false word PROTECTS. The fuel-food and the waste-matter *ought* to be burnt in the blood; and that which *opposes* their combustion, opposes the *purification* and the *ventilation* of the Living House—conditions on which the highest health and the longest life are necessarily suspended. The gest of the fallacy.

Göthe's watchword is ambiguous, and as illustrated by himself, wretched. The *true* life of Man, the Christian, has no connexion save that of *antagonism* with the sensualisms and passions which ever tend to enslave him. In the 'battle of life,' no man is ever helped, most men are hindered, and vast numbers are wrecked, by means of *Drink-pleasures*. On the other hand, every one is the better for denying the lust-for-liquor,—physically better and morally stronger.

"For one restraint, Lord of the world beside."

SPECIMENS OF 'CLOTTED-NONSENSE.'

ABSURDITY has reached its climax in the literary and political circles; and Mr *Whitty*, of the *Liverpool Daily Post* occupies the pinnacle. The following letter was rejected by the *Post*, which has had four leaders upon my two speeches—and each leader has outstript its predecessor in absurdity. The correspondence explains itself.

To the Editor of the Liverpool Daily Post.

Mr Editor,—You have honored me with a long leader, in reply to which I only want a short letter. You call us *fanatics*, and other hard names; I only repeat what I said at the meeting, that you want *information*, and in the absence of which you necessarily write—what is not sense. You charge me with repudiating 'authority,' and yet quoting 'authority.' Why not? *Answer a fool according to his folly.* Why should I not meet authority *with* authority, when stooping to those who are incompetent to form opinions for themselves? But you confound two things which differ—namely, the citing the '*testimony*' of scientific men as to experiments and facts (which I did), and the citing their '*authority*' as to inferences or opinions (which I did not, at least by way of argument.) Nor did I set up my own opinion in the place of *objective fact*. Surely, sir, if I assert that I have seen the Black Forest on fire, that does not transmute me *into* that fact? In truth, however, you ignore the *fact* I cited, and then talk of authority. Again, I will not follow you (until I re-visit Liverpool) into the *new issue* you raise as to alcohol being *necessary to the operation* of the stomach (tho my stomach has operated twenty-two years without it. Is that authority, or fact?) The statement of yours I actually commented-on was very different, viz. "that *combustion is kept up in the human stomach.*" I will not be diverted from the issue, yet I fearlessly say it is to me incredible that Liebig could ever have made either of the absurd statements;—therefore I conclude you have not understood what he said, as certainly you don't understand what you say yourself. For example, "there is," say you, "alcohol in some form in nearly all nutritious food." This excites one's risible faculties, for it is talking error while it fancies it philosophy! I refer you to my 'Chemical History of Alcohol' (*Works*, vol. i.) for a full exposure of your error. I cannot afford time to teach you by letter the A,B,C of chemistry. Yet once more allow me to stoop to authority for your sake, and cite from Liebig. "It can be proved that the hydrogen of the sugar *does not exist in it in the form of alcohol. Sugar contains neither alcohol nor carbonic-acid.*" Turner's *Chemistry* says, "alcohol *does not* exist ready formed in plants." Chaptal says, "Nature never

formed spirituous liquors." When you have studied chemistry, you will yourself find out your blunders; until then, writing more would be in vain. Your reference to Father Mathew only proves that moral suasion cannot do *everything*, and that the social legalised sources of intemperance should be met by legal prohibition. I have in the Sequel to the 'Argument for Prohibition' (p. 72.), used the fact, to draw your own inference, that the antidote must be 'more comprehensive' than simple teetotalism. The complement is legal prohibition—a movement into which you, Mr Editor, might enter, even if "a little wine for your stomach's sake and other infirmities" were indispensible. I will not debate your assertion that drunkenness is a concomitant of education, and a bulwark of liberty! I leave it in all its originality and genius. Such a discussion I must postpone until I may happen to visit Bethlehem Hospital, or some similar establishment.—
Yours truly, F. R. Lees.
Oct. 27, 1857.

A few days after the appearance of this rejected-epistle in the column of the *Alliance Weekly News*, the writer addressed a large and respectable audience in the Hope Street Hall, Liverpool, on the blunders of the *Liverpool Daily Post*. The exposure of its extraordinary logic and chemistry—does not seem to have delighted and amused the Editor nearly so much as it did the auditory; and he has therefore bestowed upon our good-humored instructions a series of leaders in which the science and sense are in an inverse ratio to the virulence and knavery. It is not, however, our purpose in this place to pursue the fallacies of the *Daily Post* thrö all their windings; we reserve the hunt and the 'death' of Reynard, for a future occasion. We present the reader with merely one specimen of his quality—but it is one which reaches the moral sublime of impudence. In reference to the Editor's assertion that "the *Stomach* was the *place* of combustion" of our food, we explained that the elements of respiration were decomposed *in the capillary circulation of the blood*, by the action of oxygen—that the arterial circulation was therefore the true furnace of the body, not the stomach—and that, in placing the furnace in this latter organ which merely received and prepared the fuel for being burnt in the blood, the *Post* had committed precisely the same mistake as if he had made the *coal-hole* into the *kitchen-furnace*, where the fuel was really consumed. We further said, that if the Editor could cite a single passage from Liebig's works, where so absurd a statement was made, that the *stomach* was the *place* of combustion, we would present £20 to the Infirmary.

The *Post* calls upon us to fulfil our engagement; and gives the following as the sentence the production of which we challenged!

"In the *living-body* the food undergoes precisely the same changes "as if we had burnt it in a furnace," etc.—(Liebig's *Letters on Chemistry*, p. 394.)

Of course it does—as we have taught a hundred times in these Works—but is the *stomach* the furnace? Does Liebig say *that*? The stomach is *in* the living-body, and so is the bladder, the spleen, and the kidneys,—but are these *the furnace*? "The fire burns *in* the

house; the cellar is in the house; *ergo*, the cellar is the grate in which the fire burns!" Such is the logic of the *Daily Post*. He talks as if the living-body was *all* stomach!—and as if his readers were all fools; for he thus practically displays the utmost contempt for their understandings. He errs in saying that we observed that he was *witty* but not *wise*. We said no such thing: what we said was this—"He is W*h*itty, but not wise." And now, if he will have it, we may add, that he is neither *witty* nor wise—and our readers will fully agree with us by this time.

To J. B. GOUGH, Esq.

Citizen of the United States of America.

I HAVE for sometime past observed, in certain organizations, and certain *professed* organs of Temperance Literature, symptoms of an attempt to modify and corrupt the true and original Teetotalism which it has been my aim and effort (not without success) to teach, defend, and enforce for nearly a quarter of a century. For the promotion and triumph of the cause I have been content to devote the best portion of my life, to give *gratuitously* above one half of my whole time and labors, to forsake the ordinary social ambitions and 'successes,' and to endure a measure of persecution and reproach (as well from professing friends as open foes), before which few men could have stood, and from which most would have speedily retired in profound disgust. The *temptation* to the latter course was never stronger than in reference to the immediate occasion of this letter; but on reflection, as many a time before, I deem it the braver and the better part to meet the enemy *on his own selected field of conflict*, and by Truth's help, I hope to rout and scatter his boastful array.

Portion of a letter in reply to the charges of *calumny*; now apologized for by Mr Gough.

In no spirit of vanity do I write this: it is known to *all* who know the HISTORY of the Temperance Movement in Britain, and can be *substantiated* by citations from my now-declared enemies themselves. The fact is recalled for two reasons—the one public, the other personal—to show, 1st, that my *contributions* to, and my historic connexion with, this cause, necessarily originate a deep moral interest in its welfare, and entitle me, without presumption, to an occasional word in its discussions; and 2nd, that I may at least challenge *ordinary consideration* from its professing friends, whenever they may think proper to drag my name before the bar of public opinion.

Some persons have ungenerously striven to produce the impression that great danger of weakening the 'old foundations' arose from the success of the United Kingdom Alliance for the Prohibition of the Liquor Traffic: whereas the truth is, that the organization referred-to is *itself* one most essential part of the 'old foundations,' without the triumph of which nothing permanently great and good *can be erected upon* the other portions. To use a figure which will be understood, Prohibition is the preliminary scaffolding by which alone the perfect arch can be sustained till the mortar hardens and fixes the key-stone; —and then, Prohibition becomes the *palisade* of the bridge, which will not allow the work to be damaged, or the mortar picked-out.

The Alliance and the old-paths.

The very parties that would fix the suspicion of corruption on the Alliance, misrepresent BOTH prohibition and temperance. The Alliance places the evil of the trade essentially in the *evil of the thing* sold —THEY, on the contrary, deal with the house and the hours, the vendors and the victims!

The Alliance fixes upon the *drink itself* as the active generator, the sole universal, proximate cause operating upon the man, to seduce,

disturb, and deprave—THEY, on the contrary, teach that the Drunkard's Appetite is but a branch growing out of a native root of Sensuality!

The Alliance affirms that the cause and the danger of intemperance originate in the *bottle*—THEY, that it lies *perdu* in the human '*heart*'!

We affirm that love-of-drink is created by *the use* of drink, and by nothing else—THEY, that it springs *from* the man himself, and is produced by sociality, company, and want of recreation! *

In short, the doctrine with them is, that the man abuses the drink, while the Teetotalers of England hold the converse—that *the drink* abuses the man.

I don't here assert, that you hold the views which we repudiate †—but I DO say that these are views constantly being advocated in the organs of *your* patrons, and of *our* assailants.

Enthusiasm and feeling no basis fo social reform.

It is important for you to know what are the views of the original teetotalers, and of all *my* converts—who seldom change—tho it is quite possible that they may *not* be the views of the remnant of your converts, who have had the courage and moral power to remain faithful to their pledge. In many places, I know, not one in ten are true amidst the temptations of the Traffic. In Ireland we have a conclusive illustration of the folly of basing a National reform on mere *sympathy* or momentary *enthusiasm*. Great beyond parallel as were the successes of my departed and honored friend, Father MATHEW—(who, however, was perfectly *sound* both in his physiological and scriptural wine-views)—profound as was the veneration and love which his unmercenary and self-sacrificing character inspired—the enthusiasm, like all enthusiasms, passed away. Excitement is no safe-basis for our movement. Even the most effectual forms of Moral Suasion will fail to realize 'the Utopia' which you have dreamt of in America ‡ You have talked and acted twelve years—others have toiled more than twice-twelve years—an average generation has passed-away—Washingtonian enthusiasms have swept the land like Prairie fires—general education and religious instruction have aided—and yet, you assert (what I suppose you believe) that in the city where, in your matchless way, you have Moral-suasioned the citizens for 120 nights together—even there, and in your whole *Commonwealth*, more drink is consumed by the People than you ever knew before! Now I, for one, cannot help thinking, that if the teaching had been of the right sort—if the effort had been to *instruct* as well as tickle—to *inform* as well as to excite—*thirty years of earnest work would not have ended in this lame and impotent conclusion.*

* See *Auld Reekie* in *Commonwealth*, examined in my *Sequel.*

† One of your 'witnesses,' indeed, goes much further than I ever did, or shall—for he calls drinking a sin *per se*; whereas apart from intellect and knowlege, 'Sin' is an absurd term and an impossible thing. I simply believe (for myself of course) that intoxicating drink *is* toxic, i.e. *bad* or poisonous.

‡ Your friend of the Glasgow *Commonwealth*, in *chanting* (as part of your Chorus) a pœan of (premature) victory, Aug. 1, says:—"*Your* little missive, dropt carelessly at 337 Strand, dissipates the *delusion* (of the Alliance as to the benefit of a Maine Law), and ... *recalled* British temperance reformers ... from a *wild goose chase* OF A YANKEE UTOPIA to the more truthful principles on which the reform was *originally based.*"

Do not imagine I am reproaching *you* for your peculiar method of advocacy, and your 'histrionic ability'—my purpose is far otherwise. Men *are* wanted to excite and arouse the public mind; * and if that excitement is *legitimately* brought about,—with policy, if you will, but policy not divorced from principle—I do not complain. But I would not have it forgotten, that excitement is not FOOD: the food of agitation being solid *truth*, and *truthfulness*. Let our sacred cause be as free as possible from cant and sham of every kind—and from what, in your country, is called *Barnumizing*. St Beauve says of the Parisians, they are *saved* by the Theatre and the Stage. Now I don't believe in dramatic-salvation;—on the contrary, I believe that it is a species of social-Opium, giving rise to alternations of excitement and stupidity. God forbid that a morbid-taste, and a debauched appetite, be formed and fostered in connexion with OUR agitation. Above all, let the *principles* inculcated be *thoro*, *consistent*, and TRUE. If, in the mission on which you are again entering, you work in this spirit and with these means—I wish you God-speed! Much will rest with yourself—much depend upon your independence and integrity of purpose—for with these you may control, to no inconsiderable extent, the tendencies I dread, and the teachings which I deplore.

Truth *versus* excitement.

Do you ask why *I* thus address *you*, and in a letter rebutting the accusation of calumny? I will tell you, bluntly. It is because I hope you are better, and will be wiser, than your conduct *to me* would indicate; and I cannot forbear an endeavor to deduce *some good* to the cause I love, out of an antagonism that ought never to have existed—or existing, should never have been protruded before the world. † I do not speak for myself alone, but for others. I am the mouth and utterance of ten thousand minds, amongst the oldest, truest, most enlightened adherents of our common cause. I speak, in some sort, as a *Representative*—and while I write of these matters, I almost forget my personal grievance. I warn you that your words will be more strictly noted, and your advocacy watched with more jealous eyes, by the friends of Prohibition and of genuine Teetotalism thröout the kingdom,—than on your former visit—for you are now the servant of two 'parties' that have set themselves in disagreeable and marked hostility to the principles and policy of the oldest Temperance Reformers. ‡

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* Just as a brilliant meteor or flaming comet may attract a child to the study of ASTRONOMY; but, after all, the Nebulous Wanderer will contribute little to preserve the *balance* of the solar system, or to explain the beautiful and stable laws of the Universe. It is an *attracted* Vapor, shining by borrowed light; not a *sustaining* power, and a *source* of perennial illumination.

† I have confined *my* advertisements to the *Temperance* organs. Your defamation was to be published to the *world!*

‡ For the policy of the Scottish League, the London *Weekly Record* manifested a determined leaning. It not only strove to under-rate the influence of the Alliance in the elections, just before the arrival of '*the Letter*'; it likewise endeavored to defend the *misrepresentations* of that League by setting up the cant cry of 'Liberty of the Press'!—in a case where such a plea would be mere idiocy. The *Record* is not idiotic, and therefore we must take the other

At the 23rd annual Conference of the *British Temperance League*, held in July, at Preston, I brought this whole matter of principle and policy before the members, because I knew that insidious, constant, and extended efforts were being made to corrupt the old platform. *Your* 'sympathizers' were there— 'All honorable men.'

One sage pompously objected that I had produced an *Essay* rather than a Resolution—how clever to compass an essay in thirteen lines!—he obviously not seeing that a reasonable conclusion was all the better for its reasons. Another waxed impudent and abusive (*he* was of course a 'Correspondent' to some paper, and a blessing to the *Commonwealth*). A strong-disease, he said, required a strong remedy—and therefore he *would* administer pills No. 1 and No. 2, but he would *not* even sympathize with the Doctor that administered pill No. 3! And another, for the sake of *union with the enemy*, was for compromizing the OBJECT of union amongst ourselves! I pressed my resolution, and carried it with only 5 dissentients. As it concisely expresses what I wish to say in this place, I quote it, and the report of my observations in support of it, from the *Alliance Weekly News*.

Resolution affirming principles.

'That as intemperance bears a twofold relation to man, moral and political, 'and is traceable to causes mediate and immediate, *the sole proximate and* '*universal cause of inebriety being the use of intoxicating drinks*, and the 'chief secondary causes, popular errors in relation to it, private customs, *and* '*the public temptations created by the traffic*; so the true policy of temper-'ance reformers, both as teetotalers and citizens, is indicated by these causes. 'That while this conference, therefore, declares the primary object of temper-'ance societies to be the combating of ignorance, by instruction and example, 'and the antagonizing of custom by combined and pledged action—it cannot 'but deeply sympathize with the aims and efforts of the UNITED KINGDOM 'ALLIANCE, which, on a purely political basis and by political methods, seeks 'to extinguish the most prolific source of intemperance, pauperism, and crime, 'and thereby remove a wide-spread and fatal obstacle to the practice of univer-'sal sobriety.'

The resolution almost sufficiently explains itself. It is always useful to

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horn. In my Essay I say (suppose) *Black is black!* In the publications of the League, I am *made* to say, *Black is blue!* My friends protest—whereon Mr Tweedie talks about 'opinion,' and his organ about 'liberty of the Press'!

What I DO *say in Prize Essay.*

"It is but justice to remind the public, that the Alliance proposes no coercive law to enforce its convictions upon *them*. Total and immediate Prohibition is of course conditional on the *formation* of a Public opinion of the same kind as its own. It simply asks *the people* to instruct parliament to do the right thing.

"It proposes that the evil shall be removed so soon as the Nation shall come to regard it as a total evil—and not one day before."

What the League SAYS *I say.*

"It is a weakness involved in the very idea of a prohibitory law, *at variance with the wishes of the people, supposed* to be enacted *by a Government* which is essentially popular."—*Scottish Review*, in reviewing 'Prize Essay.'

[Has the press, I ask, a *right* to use its liberty of saying, I said *this*, when I said THAT? Honest-men cannot plead for the "liberty of lying without rebuke."]

revise one's sentiments, and necessary, ever and anon, to record our past proceedings, as the ground of still more advanced action. But there were special reasons for doing so at this juncture; one of which was that, as it appeared to him, there was an effort being made to turn back the stream of thought from its old channels, and even, in professedly temperance organs, to question the old temperance truths. He desired to point out and record the relations of the Temperance League to the political mission of the Alliance. He would beg them to dismiss from their minds all fear that its workings interfered with the progress of temperance societies. The contrary was the fact—and he spoke from a wide knowlege of the condition of the movement thröout the kingdom. Indeed, it *must* be so; for whatever enlisted the social and patriotic feelings of teetotalers, besides the mere personal interest in the movement, and whatever excited active hostility to the public-house, must at once strengthen their zeal and preserve them from temptation. First, then, as to the *relations* of the evil itself which they sought to combat. Intemperance was both a vice and a crime,—a vice only when private, a crime when it protruded itself and its consequences into the public sphere, and endangered or injured others. As a personal question, it could be treated only by moral-suasion,—and he, for one, would sternly oppose, as beyond the province of government, any attempt to 'put down' the private use of strong drink; but its public causes and public existence were as fairly amenable to public law—to legal suasion—as any other public evil or system whatever. Second, as to its *causes*. These were proximate and remote, or primary and secondary. The essence of intemperance was the lust for liquor. It was not a natural branch, springing out of some common trunk of 'sensuality,' as a writer in the *Scottish Review* represented; it was not indigenous to man at all, but was generated, simply and solely, by the physical use of the physical agent. There was no faculty in man related to the use of alcohol, any more than to the use of tobacco or opium. Hence, men might be very sensual, barbarous, or ignorant, yet very sober; or very enlightened, artistic, or civilized, yet very drunken. Why? Because one set of people did not use *the thing* which created the drunkard's appetite, and another set did. The sole, universal, proximate cause of drunkenness, therefore, was the use of the drink. But then there were the *causes or occasions of* THAT *use*—the 'cause of the cause,' as the logicians said. The resolution summarized these under three heads. *First*, ignorance concerning the true nature of the drink: people often drank, no doubt, because they believed the drink to be good. But, *second*, people drank under the influence of custom and fashion. Men were automatic, imitative beings, as well as intellectual,—creatures of example, that dared not oppose the tyranny of fashion, and have the courage to be singular. To meet these causes, temperance societies were originated. Their primary and permanent function was to *antagonize ignorance by knowlege, and custom by combination*. The pledge was, therefore, at once a symbol of the truth, a bond of union, and a lever worked by the strong for raising up and sustaining the weak. But the *third* cause, which fed and facilitated the second, was that widely ramified, almost omnipresent agency of seduction and ruin—the Traffic. It was, in the language of the working men, 'the trap'—the overwhelming temptation to drink, which not only *created* drinking habits, but drew, in the long run, the great bulk of our pledged members back into its vortex. Our policy, then, both as citizens and as teetotalers, was distinctly indicated by these causes. *We must meet them all.* And if members of temperance societies could not, in their combined capacity, see it their duty to act politically, they must at least sympathize with an association which, by political action, sought to destroy those obstructions to their own object which political law had called into being. The REMEDY must correspond, *in extension and force*, with the *cause* of the disease. And this was the doctrine of the

Dr Lees' speech.

Origin of drunkard's appetite.

The trap.

Remedy indicated by causes.

founders of this League, above twenty years ago. It was no new policy, no 'new phase of the movement,' as petitions to parliament in 1835 and 1836, from this very Preston, and as resolutions of our conferences, year after year, would testify. Everybody knew how, both here and in Scotland, temperance societies had got up memorials to our licensing magistrates, praying either for no-license, or no additional licences. But out of a mass of citations before him, he would give three. The *Preston Temperance Advocate* for December, 1834, said: "The time is fast approaching when the merits of this trade, like every "other, will be judged by the effects it produces. Public-houses are the visible "manufactories of pauperism, crime, disease, disorder, death, and eternal ruin." In the same work for February, 1835, he found this teaching: "So far as legislative means can be made useful in checking this evil, and lessening the number of temptations, we ought to try them." In the April number, an article on Buckingham's two bills said: "While spirits are allowed to be *manu-* "*factured* for a beverage, and while public-houses are allowed to sell them, "either in their fermented or distilled character, *the main obstacle to the* "*temperance reformation remains unmoved.*" He called upon the conference to vindicate its past history and doctrine—clearly to re-affirm the old truths, and set up the ancient landmarks—to go on, intelligently and zealously, combating by moral-suasion and example the private and domestic sources of drinking, but to fail not in expressing its sense of the necessity of legal and political action besides, or in lending its sympathy to a great and successful agitation which aimed at preparing for the possibility of the triumph of true, individual, and universal temperance. JOSEPH LIVESEY, the patriarch of the teetotal movement, seconded the motion.

The policy here indicated, is *not* the policy of your patrons, tho, I believe, you profess it to be yours. Unless I mistake, you *do* go at least for an 'agitation' of the *topic*. Now THEY do not. They say to social reformers—"concentrate our strength on smaller [dram-shop] "measures—*not spend our strength in agitating for a Maine Law.*" But not content with this repudiation of our policy, they invent false-issues, where they dare no longer boldly misrepresent by name. The *Weekly Journal* of Aug. 8, says—"it is affirmed on *one* "*side* ... that the strength of the Reforming-party is best employed "when *expended* in the agitation, NOT FOR THE DISCONTINUANCE OF "DRINKING, but for the legal suppression of the Trade." Where is *that* side?—where that affirmation?—where that policy? Simply and solely in the columns of the *Journal* itself—a web spun out of spider-glue to catch silly flies. *

You cannot fail to perceive, I think, that—whatever the truth may be—your friends do NOT represent "the principles on which the Tem-

* The article fulfils its opening promise to the letter. How?—"We pro- "pose ... with the view simply of, for practical purposes, eliminating the *truth*, "directing attention, in a *series* of articles, to"—and so on, in the same execrable style. The *practical* purpose is to cover a retreat, to botch-up a blunder, and to prop up a false policy by hoodwinking its readers. In what way? Why—by '*eliminating* the Truth'! Very proper plan for *such* a purpose. And they've done it in more instances than the example cited. I need not tell a person versed in good English (even American-English), that *eliminate* does NOT mean to 'evolve,' but signifies to 'THRUST OUT OF DOOR—to expel—to throw-off.' For once the 'Weekly' has stumbled upon a true confession—by the accident of ignorant imitation of philosophical language.

Ignorant use of 'eliminate.'

perance Reformation was *originally* based." In my humble opinion, the founders of Teetotalism, LIVESEY, TEARE, GRUBB, ANDERTON, and others—in the exercise of their clear Saxon common-sense, exhausted the *fundamental philosophy* of the subject, and left your maudlin friends, with their pretentious philosophical verbiage, a century behind. Your 'literary' patrons may have *read* more than a Livesey or a Teare,—have acquired the 'knack' of imitating the mannerism of Thinkers, and the art of '*eliminating* the truth,'—but they have not themselves thought, and never will, for a reason explained by MILTON:

> Who reads
> Incessantly, and to his reading *brings not*
> *A spirit and judgment equal or superior,*
> Uncertain and unsettled still remains,
> Deep versed in books and shallow in himself.

I candidly confess, that my labors have been merely to illustrate, formulize, and confirm the principles which the first teetotalers inculcated 25 years ago.

It seems strange to me, that, 27 years after the establishment of the Temperance Society in my native town, I should be called upon to defend its original *principles* and *policy*, from those who are endeavoring, by every available means, to ignore the one and subvert the other. I take up the first report of the *Leeds Temperance Society* (established Sep. 9th, 1830), and find that its constitution begins with no half-principle. The pledge runs:—"We do voluntarily agree to *abstain entirely* from the *use* of distilled spirits, except for medicinal purposes." The third article then details amongst the 'methods' of action, these:—"To use *all proper methods* to produce seasonable and salutary impressions on the public mind ... and to *devise whatever measures may be most likely*, under the Divine blessing, to effect a great and radical change in the habits of persons addicted to intemperance." In this sensible passage, befitting the progressive nature of the movement itself, there is surely plenty of room for the 'development' of Prohibition—unless the Traffic has no connexion with intemperate habits. Under article four, we read—"In prosecuting these measures, the Committee shall be at liberty *to avail themselves of the assistance of* ALL *who may be desirous of furthering any of the objects which the Society has in view*, altho not subscribing to its constitution." Your patrons now *taunt* the Alliance with furthering one great object of Temperance Societies by the assistance and political influence of Non-teetotalers! In the same report, I find amongst the *objections* combated, precisely the fallacy which appears in the *Scottish Review*—the fallacy of that very reviewer who talks about Alliance doctrine as 'a *new* phase' of the movement!

Leeds Reports in 1730.

"No man will be hardy enough to deny that the public welfare and personal security are mightily indebted to the terrors of the LAW, by which bad men are debarred from many offences against the latter, and many crimes by which the former would be deeply injured. But society derives a *direct moral gain* from the suppression or limitation of such evil actions, because each successive crime adds to the force of evil principles, and operates injuriously by the power of example on others. The objection, therefore, that a reformation produced by *such causes* would have no effect in correcting general depravity, is not well

Power of Law.

founded. But Intemperance is generative of other vices. It *produces* and nourishes a foul and monstrous brood of evils, which live *on* it and *by* it. It seems to have the faculty of *kindling* all the sensual and unholy passions of our nature, and giving them a power and malignancy which, in its absence, they do not exhibit. *Intemperance is an artificial vice:* it must be cultivated to grow."

How much wiser than to regard the drunkard's drink-generated-lust as a branch of that same 'sensuality'! In the 2nd Report, "the *fundamental* proposition of Temperance Societies" is stated to be—"*That the use of ardent spirits is, physically and morally, evil.*" It refers also, as an admitted thing, to "the OBLIGATION of the Christian to *controvert error*, and to combat unholy practices:—they must, therefore, denounce existing practices relative to the use of spirits, and by so doing, *unequivocally express* that determination to follow a directly opposite course of action; and it does not appear very plain, that such an implied determination differs from the pledge so materially, that on the strength of such a difference, a difference undefined and apparently intangible, the whole machinery of Temperance Societies should remain idle." One of the latest passages announces that "the Committee cannot but deem it *criminal* in those who still continue to sell and use ardent spirits for the purpose of luxury and diet." In the 4th Report (1835), during the secretaryship of Mr John Andrew, junior, the fundamental principle of the Alliance is thus announced:—

Leeds Reports.

"*Wherever the consumption of ardent spirits is increased, in any community,* THERE *is a proportionate increase of crime.* Has *Legislation* then nothing to do with the increase or diminution of the consumption of spirit? *The greater the facilities of obtaining them, the greater the consumption:* and there is a proportionate increase of poverty, insanity, and crime. As this is notoriously the case, ought not a government to adopt every constitutional means to put a check to their use? The magistrates of Darlington would not, last year, *renew* the dram-shop licences." [The drink-shops are, therefore, *prohibited* by the general principle at the *back* of licensing.]

Alliance doctrine in 1835.

The Report goes on to state that "extensive as are the evils resulting from drinking ardent spirits, the habit of drinking malt-liquor in all the manufacturing towns and villages of the country, produces much greater." * Since that period, science has shown the *identity* of alcohol in beer and brandy—it being a product of fermentation, and only an educt of distillation. In the following year, the Society, after a full public discussion of the matter, in which the writer took part, † enlarged its pledge so as to comprehend abstinence from *alcohol* both in fermented and distilled liquors, and to make the pledge applicable to the actual forms of the evil. As the 7th Report says, "the Socie-

"* So great are the abuses and abominations connected with them, that efforts ought to be made for the speedy closing of all Beer-shops by Legislative enactment."—13th Report, May 1844, p. 13. In 1845, the committee *petitioned* parliament not to license houses for the sale of strong-drink. In April 1847, during the famine, I advocated, on the part of the society, and at a public meeting in the Court House, presided over by the Mayor, the *suppression of distilling* by law; and a petition was accordingly sent to the Commons and presented by Mr Brotherton.

† See *Works*, vol. i. p. l.

ties in this country were rapidly hastening to lethargic quiescence, if not to total dissolution—thus proving the existence of some fatal defect." If a partial application of a true principle thus formed a rotten foundation for the movement, can I judge *that* advocacy to be less than 'hollow,' which concedes the natural and essential goodness of the intoxicating liquors themselves, and the lawfulness of their limited use? Assuredly, *expediency* was never yet the *foundation* of the Temperance Societies.

To CHRISTIAN EXPEDIENCY, however, as a 'motive' of action, I have no objection. It is only one of many aspects of *love*. "He who *knoweth* to do good, and doeth it not, to him it is sin." But the world is *not* to be influenced by that motive, until the world is first made christian. Even *in* the Church, how feeble is its power!—how faint the traces of its footsteps! Moreover, both Church and World repudiate the *application* of it to the present case. They put awkward questions which have never been answered. For example—"How can it be good to abstain permanently from that which GOD made to be used for our daily good? It may be reasonable to abstain from finery, but not from clothes; from gluttony, but not from food. Are Abstainers wiser than God, and the Son of God?—wiser than He who supplies wine in his perpetual providence? wiser than He who called it into being by miraculous power? If we are to cure drunkenness by temporary abstinence—and it is 'expedient' now to abstain, *because* drinking and drunkenness go together—then we may drink AFTER A WHILE when drunkenness has vanished? But if drinking *then* will not *originate* drunkenness, and that call in turn for abstinence; *why* should drinking do so now? If it will—why should we drink *ever*? And if it is *never* expedient to drink, because social drinking can *never* be dissociated from prevalent drunkenness, *then* 'expediency' is only NECESSITY disguised." Right and wrong expediency.

Sooner or later, the world will arrive at logical conclusions, for man is a reasoning being. It is not expedient, then, to wink at the dilemmas of this question, or to attempt to separate a *good motive* from a *sound principle*. Love and Logic, in God's real universe—if not in the dreams of well-meaning but mentally-confused philanthropists—will be found identical. 'Wisdom' is justified of her children—neither she nor they are purblind—and nothing but *truth* will bear the test and pressure of Time.

'Expediency' may be an excellent auxiliary—but a bad principal in the warfare;—an useful wing, but a deceptive centre, in the array of Temperance. It is, therefore, *when so placed*, hollow beyond measure, weak beyond parallel. It cannot abide the shock of conflict—and has no application and permanent influence beyond the narrow circle of a few loving-hearts but crude-heads. The sort of motive is admirably hit off in the words of one of your Boston Lady-listeners, last winter—"*Well, I am determined, for the future, never to drink any wine*—BUT CHAMPAGNE!"

Nor can your position be strengthened one whit by your resort to Scripture. Paul's memorable passage, *It is good neither to eat flesh nor drink wine*, cannot help YOU. Its original application has been

St Paul opposed to modern expediency.

shown elsewhere: * viz.—to acts that had an *actual tendency* to entice a less firm or intelligent brother back into idolatry, or otherwise *endanger* his salvation. No *example* of its application is left on record by the Church, however, not to speak of the World. The reference to flesh points to no tendency *in the thing*, but to a narrow, temporary accident of the WAY of use;—points not to an universal, inherent evil in the creature used, but to a passing condition of the *local mind*. In this case, then, there is no analogy. But there is quite a wide difference in the case of wine, and in the persons *using* the illustrations. Paul ADMITS the evil tendency in the act of using 'wine,'—and moreover, his principle applies to '*anything*'—a term which may fairly include Tobacco and Opium, which have a similar tendency to deprave the mind,—but the Expediency-man, as distinguished from the Teetotaler, DENIES that intoxicating wine is bad *per se*, or has this *actual tendency*. Paul implies that *wine is a mocker*, but Expediency grants that it is a 'good creature.' The grounds of Paul's argument and yours are different; and the issue of your advocacy, even granting that it would ever alter the habits of a tenth of the population, would, as I have shown, leave the work to be done over again in the next generation. The history of the Irish Reform would prefigure that of Great Britain. †

It is not denied that, in many respects, your former visit was 'eminently useful.' The great and good Father Mathew was still more useful, and useful *without drawbacks*. But that fact did not get rid of the essential defect of his agitation—much less can it neutralize the evil of *erroneous*, as well as defective, doctrine such as yours.

Prohibition.

Your course in reference to the Maine Law, is absolutely obstructive: your theory about it, and your inferences from partial and exaggerated facts, tend to damp ardour and lessen effort. I know I shall be told that you are at least sound on PROHIBITION, because you *talk* it. That, however, is by no means a test of soundness; you must *act* for it, and recommend others to act for it, in a *practical manner*. To be theoretically for Prohibition at some far-off day—when *four-fifths* of the nation are teetotalers, which is, I think your 'notion' of the time for enacting it,—is not to be for Prohibition at all, since such a time is just impossible unless we have prohibition *first*. We must now, however late, return to the wisdom of 1836 and 1841—we cannot afford to lose other 20 years. *Sixteen years* ago the New

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* *Works of Dr Lees.* Vol. ii. p. cxxx.

† The golden moment was lost during Father Mathew's reformation, for want of Legislative-*representatives*. What said Mr J. S. BUCKINGHAM, May 17, 1841, in Exeter Hall?

Want of representatives in parliament.

"When I went into the House of Commons this afternoon, the first person whom I met said, 'It is a pity you are not here now, *for you might carry all your projects with the greatest ease.*' I asked him what he meant. 'Why,' said he, 'they who are not converts to temperance are, nevertheless, so subdued with reverence towards your principles, and see so many good things resulting from abstinence, that, whatever their secret feelings, they would not dare to oppose it.' ... The right way to pursue any object, is first to inoculate the masses."

British and Foreign *Temperance Magazine* put the question on its permanent basis, in these prophetic words :—

The Alliance wanted in 1841.

"That the question must, *yet*, be made a Legislative one, there can be no doubt; *unless we are willing to toil, perhaps for ages, against obstacles to our progress*, which the Legislature can easily remove; and such being the case, we think THE SOONER WE MAKE OUR VOICE TO BE HEARD IN PARLIAMENT, and that too with all possible energy and distinctness, THE BETTER."

When the Alliance is in full career to do this, you and your patrons cast yourselves in our path.

To preclude misapprehension, I repeat, I have nothing to object to your dramatic portraiture of the evils of intemperance, nor to your powerful enforcement of the duty of action in this matter,—I seek not to lessen but to increase your power in this direction, by pointing out the *need* of basing your appeals upon a solid foundation of consistent Truth, and not upon the shifting-sands of a false but popular expediency. The following, in my judgment, are the sole true and impregnable pillars of Teetotalism.

Initial Principles.

1. That the Drinking of Alcoholic liquors produces Intemperance, their national use being inseparably associated with national excess, and with our chief pauperism, disease, and crime.

2. That no plan short of total abstinence and no-license, has ever succeeded in preventing that excess.

3. That abstinence has everywhere been found largely productive of improved health and increased bodily strength to its adherents.

Inferential and Illustrative.

4. That there is a *peculiarity* in the physical relations of alcohol to the human system, which necessarily *tends* evermore to the excess which is actually developed.

5. That, in the language of Scripture, *wine is a mocker*; as in that of an opponent, "a very dangerous tricksy spirit." *

6. That it is, consequently, both physically and morally wrong to invite its action upon the system, and thus disturb or deprave the soul.

7. That after the habitual use of alcohol, as of opium, "the organism does not manifest its old susceptibility," *because* "the original conditions of nutrition are impaired." * It is, therefore, not nourishment, which *satisfies* day-by-day alike.

8. That alcohol, in every perceptible dose and form, *stimulates at once;* even in the smallest quantity, as Liebig says of the best Rhenish wines, at best "producing a minimum of *injurious after effect.*" †

9. That, as announced by the latest interpreters of chemico-physiological science—Moleschott and Lehmann—alcohol can not be ranked in the category of Food, or contribute to the right performance of any vital function.

10. That alcohol is an irritant to the tissues—an antagonist of

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* *Westminster Review.*

† The proof of all this may be seen in this volume, p. 94; or the *History of Alcohol*, published in 1846.

Alcohol a dual poison.

digestion—a forestaller of fresh-air—a narcotic to the nerves—a poison to the blood corpuscles—a reducer of animal heat—an arrester of vital change—and a stimulant to the passions. It is, therefore, poison both to Soul and Body.

Social and Ethical.

11. That the conversion of food into such poison, is not only a sin against God, but is of the essence of crime against Man, and should therefore not be licensed by Law.

12. That Reason, Science, and Christian Morality unite in demanding the public and instant Legislative suppression of all the public facilities and fountains of that most tremendous system of social obstruction and calamity—the Traffic in strong drink.

Critical and Subsidiary.

13. That the truths of God's Works, as illustrated by experience, and science, are not contradicted by his Word—which nowhere declares or implies, either that intoxicants are physically or morally good, or that we are under any obligation to use them.

14. That all God's dietetic gifts are good, and *may* be received with thanksgiving, and without reproof: and that He has *not created* for our use and benefit that which we cannot safely use and benefit-by.

15. Contrariwise, that to impute to God's dietetic creatures dangerous and unsafe properties, or to ascribe that which *is tricksy* and dangerous to the design and appointment of Providence, is virtually to blaspheme the Divine Goodness and Wisdom, since God tempteth not any man, neither with 'deceitful meat,' nor 'mocking wine.' If God *has* given us intoxicating-drink—if Christ *has* sanctioned its use—who art thou, O man, that repliest, or reclaimest, against God? His universe needs not man's tinkering.

He who preaches the essence of these principles preaches Teetotalism; he who preaches something else as *abstinence*, preaches that which is a rope of sand,—which is equally contradictory to reason, to nature, and to revelation.

TEETOTALISM IS A PRINCIPLE, not an artifice; A LAW, not an expedient; a SCIENCE, not a shift; a TRUTH, not a stop-gap. Now this principle, this law, this truth, this science, cannot be *established* by alternations of comedy and tragedy, by a stage-apparatus, scene-shifting, and dissolving views. A Magic Lantern is all very well in its way,—and I would not depreciate dramatic-appeals to *enforce* and *apply* the truth to the feelings and conscience,—but I confess that, had I a Lantern to lend, or a dramatic genius to bring into the market, I should be very careful about transferring them to the *custody* of those who are bent upon corrupting that TRUTH itself. I would search for the Truth, buy the truth, but I would *sell* it not; much less would I betray it with a kiss, or malign its ancient friends and upholders. Recollect, that while you make yourself the TRUMPET and SHIELD of the party in question—who, week by week, and month by month, knowingly and unscrupulously *misrepresent* our views—nothing but the clearest disavowals from you, nothing but the soundest teachings, can absolve you from a common responsibility.

A friend writes to say, that he is sure you often give utterance to sound doctrine. Very true—but it is the *unsound* doctrine I object-to, more especially since it can be shown that, having said a good-thing, you feel by some mysterious impulse, compelled to *neutralize* it immediately. 'Inconsistencies,' multiplied never so much, cannot reach to full-summed harmony. I am directed to the 'Oration' entitled 'Prevention is better than Cure,' for illustrations of sound Prohibition and sound Teetotalism. I accept the reference.

Mr Gough on prohibition.

P. 14. "I am a *thorough* Maine-Law man ... yet, if I could give Great Britain a Maine-Law *to-morrow*, by lifting up my finger, I would not do it. Why? Because Great Britain is *not ready for it*."

This seems clear—yet in the Exeter Hall Oration entitled 'our *duty* in regard to the Intemperate,' I find a contradictory passage:—"I "affirm that *if* the beer-houses and spirit-shops *were closed to-day*, the "expenses for pauperism and crime would decrease *in one year* more "than twice over what would be required to make up the deficiency" of revenue. This will show how you are *in the habit* of forgetting yourself; have, in fact, no rigid consistent opinions.

P. 14. "But she is ready for a *thorough-agitation* to promote a public sentiment in its favor, and by-and-bye *the people* will demand it; and when they demand it, they will see that it is honored when they get it."

This is just the Alliance doctrine—but you gather statistics for an *opposite* policy, and in your Glasgow letter announce that when *the people* of New England, by twenty years effort, and by overwhelming and repeated majorities, *did* procure Prohibition, it was 'premature'—they did *not* "see it honored when they got it"!

P. 14. "I would not give that [a snap] for any law that is a dead-letter on the statute-book."

Here, you lag far *behind* the lagging League, for *it* says—"To have "a liquor law on the statute-book of a State, *is a matter of no small* "*importance.*" * We quite accord, that "*that* man dreams who "fancies that the victory is won when *that* is achieved." Very clearly, the possession of the law is the vantage-ground of Battle with the Traffic, as the obtaining of it was the necessary commencement of the real campaign; but it is *not* something else, of course—as that convenient man *that dreams*, is imagined to fancy. As you show, in your fervid peroration concerning the 'coming struggle,' it is very excellent, and very convenient, to have the Law as a platform to *start from*, as well as a lever to *work with*. †

Mr Gough on teetotalism.

P. 14. "The *bare possibility* of a child becoming a drunkard, *should* be enough to induce every father and mother who love their child, at all hazards to put out of the way the *instrumentality* that, by *any possibility*, MIGHT INDUCE HIM TO TAKE THOSE STEPS that should *lead* to drunkenness. We kill a *mad-dog*, not because he is certain to bite somebody, but because it *may* bite some one. Here is an *instrumentality* SENDING thousands into a drunkard's grave."

Do you *mean* all that you say? The '*bare*-possibility'-and-'instru-

* *Weekly Journal*, Aug. 8, 1857. † See *Sequel*, p. 125, vol iv.

mentality'-argument would be just as good against ropes and razors, and lead to their abandonment on the ground that they are occasionally, or may be possibly, instruments of suicide. It is this sort of flabby fallacy that brings Teetotalism into disrepute with thinking men;—when *mis*represented it gives others endless trouble to put the question on its right basis again. Do you mean that *strong-drink* is, metaphorically, a MAD-DOG? Is it dangerous and bad? Does IT (not its abuse) SEND people mad by its inherent *maddening nature?* Does IT really *induce* those 'steps' that 'lead to drunkenness'? All this *looks* like Teetotalism; but immediately after we are told that "that [quantity] which one man *may lawfully drink*, becomes excess in another." Then after an attempt to escape the pinch of the question [Is it lawful to *drink?*] you take your final stand here:—

Repudiates teetotalism.

"I defy all Christendom to prove it is *not lawful for me to abstain*: and *that* IS ALL I WANT. Other men may claim more, *I don't want any more.*"

You begin with teaching that men *should* abstain—or are bound to do so—and end by pleading only for your right to abstain! The argument ends in a negation, which will be found a very poor foundation for a world's reform from the most potent interests and disastrous customs by which it is controled and cursed. You often take especial pains to *repudiate* genuine Teetotalism, as in referring to Paul's passage, already considered:—

"On that ground, and NO OTHER, do I advocate the *claims* [You just now allowed it *had* no claims!] of total abstinence to the coöperation of Christian people."

A better text could have been found—even better than 'abstain from the *appearance* of evil'— for your purpose. "He who KNOWETH TO DO GOOD, and doeth it not, to him it is *sin.*" Still that would not serve, *except on the principle* that the drink is BAD; for if the drink is good, *to use it is good likewise.* If strong drink is a God-made-good, to *call* it bad, or *treat* it as bad, or imply that it is bad—*is itself bad.* Abstinence, if alcohol be good, must then be a mere matter of LIKING, must be morally indifferent.

In fact, however, you do claim more—you *have* another ground.

P. 15. "When you give your boy drink [pure wine, we will suppose], you give him that which *cannot by any possibility* do him *any good*, morally physically, intellectually, or religiously."

It follows, then, either that God has *not made* such drink—or that He has made something *without an use.* Which horn will you select?

So in the Address to Children, you tell an effective anecdote, in reference to a Barrel of Liquor spilt in the street. What a pity! says one. Oh, no! says a boy, looking on, *The drink will do better on God's earth than in God's image.* Very good, if the drink *is* bad—but very bad, if the drink is good: for what God makes *for* his Image, is *fit* to be introduced *into* that image; fifty 'orations' to the contrary notwithstanding. I for one will not accept twaddle as the basis of Teetotalism. Again you say—

P. 20. "As a *beverage* WE WAGE WAR AGAINST IT. ... I believe we who chose pure cold water, have the best of the *argument*, the best of the *practice*, and the best of the *experience.*"

Excellent! but what becomes of the disclaimer that went before? Was it only a *sop?* With the best argument and experience, why should we mutilate the one and ignore the other?

I have not arrived at the end of these strange pleas. At p. 7, of the Oration on 'Drinking Customs,' you say—

"Is not drunkenness, then, to be dreaded? Is it not *worth your while* to battle down the *customs* that are a temptation to your boy?"

No—drunkenness is NOT to be dreaded! Nobody *imitates* drunkenness, as no boy is fascinated with the drunkard—on the contrary, every body is *disgusted* with it and him. The old Greeks made their helots drunk of set-purpose, by way of temperance lecture to their children. *What* 'customs' are a temptation? Drinking-customs. Why? Because of the *drink*. It is the use of *that* which seduces *into* the path of inebriation which is to be dreaded—the 'cause,' not the effect. But to the man who objects—"*Why* should I give up a good-thing, because some one abuses it?" what have you to say?

"We don't appeal to the SELFISH *man—to such persons I have not a word to say*. We appeal to men and women who have hearts to *feel*."

Now I object to this as being at once insufferably egotistical, deplorably superficial, and downright insulting. Are men obliged to be 'foolish' because they 'feel'? Is a man any the more 'selfish' because he asks a reason for an act, than if he acted from blind, and it may be mistaken, impulse? You assume that your *ipse dixit* as to the way of doing good, *must* be the right one—about which no question is to be raised! And so poor are you in reasons, that when the question is asked, you can only insult the questioner by denouncing him as 'selfish,' and describing him as 'heartless'! In short, *this* style of advocacy ignores the great bulk of thinking-people in society, who very rationally require a reason for the Faith they profess and the practice they adopt. * False issue.

For the first time I have *read* five of your orations, comprising 82 pages of matter—and, putting aside simple anecdotes, some pertinent and others inapt, and some fine passages not original,† have only been able to extract by way of *First Principles*, the charming specimens

* The *Manchester Guardian* of Sept. 3rd, 1857, says:—"The speech delivered by Mr Gough at the Free Trade Hall affords specimens of the *kind of assertion* ... It is habitual with them to *insult* and *outrage* in every way masses of respectable and earnest men, happening to disagree with them as to the *means* by which the common enemy may be assailed."

† I mean *precisely* what I say. Compare the following passages:—

From CARLYLE'S *Characteristics*.

"In lower regions, how many a poor Hazlittt must wander on God's verdant earth, like the unblest on *burning* deserts: passionately dig wells, and drain up only the dry quicksand."

Mr GOUGH'S oration *on Habit*.

"For seven years of my life, I wandered over God's beautiful earth, like an unblest spirit wandering over a *barren* ‡ desert; digging *deep* wells to quench my thirst, and *bringing up* the dry hot sand."

‡ This is tautology, where in the original it was force and character. *Deep* wells in the desert is rather singular.

just given. I think your friends, therefore, very injudicious in denying my statement that you are *not* "an extraordinary reasoner," and in setting you up as an 'authority' in sociology.

Don't, I beg, think that I am objecting to your *right* to hold inconsistent opinions, or to *adapt* and *recite* the finest passages of any author whatever. Edmund Kean and Mrs Siddons but *recited* Shakspere—yet were they richly endowed in their way. But what I *do* mean is, that things should *appear* as they *are*;—and that I, for one, have a perfect right, on *public* grounds, to *estimate* the intellectual character and mental capacity of ANY man, without being insulted for so doing. I will *not* accept a dramatic actor for a social authority—whether it please him or not. I will not confound the powers of a John Stuart Mill with those of a Macready—even if Mr Macready were foolish enough to allow himself to be set up as an 'authority' on social statics. One thing I have certainly shown—that you are *not* a close, accurate, or consistent reasoner. A second thing I have also made certain by multitudes of examples—that, even if your thoughts were just, you do not know *how to express them with precision* and coherence; and when you so misinterpret my language as to make it mean to you what it *cannot* mean in reality, is there any wonder that you should *misinterpret* and *mis-express* YOURSELF?—which is what you have been *ex*cused for doing. A third thing I have also evinced—that tho you may be a consistent Abstainer, you are not at all a *Teetotaler*—for no teetotaler says, as you say, in addressing the Drinker—"You "say the Bible *permits the sanction* (!) of drink—and I agree with you... "But altho *it is lawful for you to drink*, it is not lawful for me." Teetotalers do not believe in the lawfulness of violating physical laws, social responsibilities, and moral obligations. *Do thyself no harm* is their watchword. I know also, that in your Oration 'on the Power of Example,' you have *another* statement. "My opinion is," you say, "that the *use* of intoxicating liquor as a beverage is *always an excess.*" Is 'excess' then lawful? Does the Bible 'permit the sanction' of excess? All this DEMONSTRATES your words to be the expression, not of consistent, crystalized thought—but of *momentary impressions* and *changing impulses*. Yours, etc.,

F. R. LEES.

P.S. I regret to learn that you have chosen at Greenock and elsewhere to *sneer* at my views on the wine-question, affirming that it is left *as misty as ever*. Had you spoke of your own *subjective-mist*, I should not have said a word. For the rest, I now *republish* (against my previous intention) this portion of my Letter. In attacking me, you also attack the views of the Scottish League's *Temperance Cyclopædia*, and depart from the complimentary language of your former visit.

I.

To the Editor of the Preston Guardian.

SIR,—Not knowing your sentiments on the subject of teetotalism, but expecting you will hear parties against it as well as those for it, I am led to address you respecting a recent lecture on the 'Law of Maine,' in which it was stated that "the practice frequently resorted to by mothers of taking alcohol into their system, etc., *engendered an incipient taste for strong drinks.*"

Now this is a statement which I controvert, and with reason, as will be proved by the following extract from the *Chemical Gazette*, on the subject of "the digestion of alcoholic drinks, and their function in nutrition," detailing some experiments made a few years ago by MM. BOUCHARDAT and SANDRAS, two eminent French chemists, in which it is *shown* that no alcohol is absorbed by the lacteals, which it must be if the mother is to impart it to her infant.

I give an extract from a description of part of the experiments made by those gentlemen, as taken from the *Chemical Gazette*, Part 130, page 120, in order that the public may have incontrovertible facts laid before them, and not be led away by vague theories:—

"It was now ascertained that the quantity of alcohol which escapes by the lungs is quite inconsiderable. This was determined by directing the gases and vapors evolved during respiration (by a man who had taken a considerable dose of alcohol) through a Wouff's bottle, surrounded by a freezing mixture. After the operation had been conducted for two hours, only *a minute quantity of alcohol was found in the condensed fluid.* None escaped by the *urine*, or other secretions. In the case of a man, who, after a three days' debauch upon strong punch, was seized with a succession of epileptic fits, they found that *blood drawn immediately from the jugular vein, contained both alcohol and acetic acid in small quantity*, while that taken an hour later contained none. They found, however, by Trommer's test, distinct indications of the sugar which had been present in the punch, from which the authors draw the conclusion that alcohol is DIGESTED more rapidly than SUGAR.

Alcohol in the blood.

"From these experiments the authors conclude that alcohol is absorbed by the veins, and not by the lacteals; and that, with the exception of the small quantity which escapes by the lungs, it is entirely oxidized into carbonic acid and water, either directly, or *by passing through the intermediate stage of acetic acid.*"

The last experiment, applying to strong punch, in which case the jugular vein contained alcohol and acetic acid in small quantity, *while the blood drawn an hour later contained none*, demonstrates, that though alcohol, if taken in strong doses, may be found soon after drinking it in small quantity in the veins, NONE at any time is absorbed by the lacteals.

Alcohol, being drunk diluted—say from eight to ten of water to one of spirit, and digested as stated above, becomes *nutritious*, rather than *pernicious*, to animal sustenance. Hence, therefore, by what law should the sale of a thing good in itself be prohibited? Correct the abuses of it—and they are capable of correction just the same as swearing or any other vicious habit; but do not prohibit the use of good things put within our reach by a beneficent Providence.

USE-BUT-NOT-ABUSE.

February 21, 1854.

II.

To the Editor of the Preston Guardian.

SIR,—Permit me, as an advocate of Teetotalism and of the Maine-law, briefly to correct the errors into which one of your correspondents has fallen, who writes under the signature of 'Use-but-not-Abuse'—a phrase totally misapplied, by the way, when applied to a *bad* thing, like alcoholic drink.

1st. Any experiment of MM. BOUCHARDAT and SANDRAS cannot be accepted as the absolute truth on the subject of alcohol and milk, because in their experiments with reference to the secretion of the kidneys they are demonstrably inaccurate; for Dr PERCY, of Edinburgh, in his experiments, *did* obtain alcohol from the renal secretion.

2nd. A palpable and absurd confusion is made between *digestion* and *decomposition;* between what takes place in the *stomach,* and what occurs in the arterial and capillary *circulation.* The fact is, alcohol cannot be digested, for it is a liquid needing no digestion, and which is *absorbed* from the stomach long before any proper digestion of food can be completed.

3rd. The chemists 'conclude,' or *infer* only, that alcohol is *not* absorbed by the lacteals; but all that their experiments go to show is, that *much* of it is absorbed by the veins in the first place, not that *all* of it passes in that way and *none* thrö the lacteals. Their premisses do *not* authorize their inference. They have not 'shown' what your correspondent asserts, and, indeed, have made no experiments-proper, on the subject.

4th. The recent experiments of M. BERNARD demonstrate that one function of the liver is to convert the starch of the food *into* sugar in the veins, that substance being a normal element of the blood, placed there purposely to be *slowly* (not rapidly) decomposed by union with the oxygen we in-breathe, for the production of vital-heat.

5th. 'Use-but-not-Abuse' is grossly wrong in affirming spirit to be 'nutritious.' LIEBIG has demonstrated that it *cannot* repair the waste of any part of the body that is the seat of life; and it is equally certain that it lowers the heat of the body by *robbing the blood* of its purifying oxygen to decompose the alcohol, thus leaving the more valuable oil of the blood undecomposed. Alcohol *is* 'pernicious' in the body of man, both chemically and physiologically.

6th. A taste for stimulants may be *transmitted* to offspring, just like mental peculiarities, quite independent of the lacteal system at all—namely, by the alteration they effect on the brain and nervous system of the parent.

7th. 'Providence' did *not* 'put' alcohol within our reach; he put solid barley and fruit, for our use as food; it is the Other Power that converts them into poisonous drink. Hence, therefore, the Maine-law proposes to arrest the destruction of the people's food, and to dry up the proved fountain of pauperism, crime, and premature death.

F. R. LEES.

Leeds, March 1st, 1854.

THE DUTY OF MAGISTRATES.

[From the *British Temperance Advocate.* Supplement. 1839.]

THAT *every individual must exert a certain amount of influence upon the community of which he is a member, either for good or for evil,* is an axiom in morals as important as it is indisputable; but it is an axiom which men are as prone to forget as they are slow to act upon. The individual is apt to lose himself in the great crowd, and become isolated in the breathing mass amid which he lives and moves. Thus, within circumstances fitted to awaken to high excitement the deepest sympathies of the soul, men remain dead and callous, and, in the frost of selfishness, freeze down into an icy insensibility to the lofty and ever-during claims of patriotism and humanity. Hence those feelings which are the firmest bulwarks of national virtue, and therefore of national greatness, become weakened and allayed; while vice rushes in like a deluge.

Responsibility for influence.

For the influence of their example, men are as responsible as for the use of any other talent. A deep sense of this responsibility is one of the strongest safeguards of virtue. Individual influence is proportioned to intelligence and rank, and the responsibility it imposes is commensurate with its extent. Hence, as those who direct the popular mind, and those who administer the law, wield the greatest influence, they are subject to a corresponding accountability.

To the Magistracy of this country, there not only belongs all the responsibility that wealth, rank, and intelligence involve, but there is superadded all THE RESPONSIBILITIES OF OFFICE. They are the constituted guardians of public morality. To them is committed the administration of the laws, not only for the "punishment of evil doers," but that they may check and control the sources of evil and crime. Such, for example, is the power which the legislature has given them over the LICENSING OF HOUSES FOR THE SALE OF INTOXICATING DRINK. Their authority over these houses involves them in serious responsibility, which, we fear, has never been sufficiently considered.

While we acknowlege in sadness the sober truth that mere legislative enactments are often more powerful for *evil* than for *good*—while we admit their utter and deplorable impotency when put forth as direct *remedies* for vices and disorders which spring from the physical and moral nature of man—yet we as frankly confess that they may effect much in the way of *preventing* the direct occasions of crime. Thus, in reference to the sources and occasions of intemperance, the discretionary power with which the Magistracy are entrusted, may be directed either in a beneficial or a baneful channel, in proportion as it is exerted to diminish or to multiply the *means and temptations* to the nation of gratifying an unnatural and morbid thirst for intoxicating liquors, and by which they impart or withhold *a public sanction* to those opinions and practices with which intemperance and its concomitant vices are identified. This discretionary power, then, ought to be

Where Law is powerful.

employed in a manner most accordant with the original spirit and evident intention of the law, if good—or dealt with according to its tendency to promote or obstruct the great purposes of social life—peace, virtue, and happiness. Now, what was the original end contemplated by the law in reference to the establishment and licensing of PUBLIC-HOUSES—those fatal and fertile nurseries of drunkenness? Simply, that they should be houses for innocent and necessary *refreshment*.

Original intent of Public-houses reversed.

But what says the voice of impartial history? What says the varied, multiplied, and constantly renewing enactments of the legislature—enactments perpetually increasing in stringency and severity? What says bitter experience? They all proclaim the appalling fact, that THESE HOUSES HAVE TOTALLY REVERSED THEIR ORIGINAL CHARACTER, and become places where the unwary have been seduced, the strong tempted, and the weak ruined; in short, they have been transformed (by the gradual but natural operation of the intoxicating agent to the sale of which they are now almost exclusively devoted) from houses of public refreshment and accommodation, into temples consecrated to sensuality and Bacchus. Nay, to affirm all this—to affirm that they have monstrously exceeded the original design of the legislature, and become frightful engines of personal injury, domestic suffering, social degradation, and national dishonor—is but to proclaim an every-day fact, to which the eyes and ears of all men are witness. * The abuse has become so common as almost to lose its power to startle. Men have worn off their sense of responsibility in this matter, and it is high time that they should be aroused from their sleep! The fact is *seen* and *confessed;* but its evil, its wickedness, is not *felt*. The *eye* sees, but the *heart* and the *conscience* are unmoved. Nevertheless, responsibility remains, and presses upon every individual.

Prohibition latent in the law.

But if all men are bound to use their influence against this wide-spreading evil, how much more the Magistrates of the land, in whose power it is to *abate* the nuisance! Have public-houses increased in number far beyond the reasonable requirements of public convenience? The Magistrates have power to reduce them indefinitely. Have public-houses violated the laws enacted for their government? Are tippling and drunkenness, idleness, gambling, and many other vices, not only tolerated but encouraged in them? The Magistrates have power to *refuse their licenses*. AND HAVING THIS POWER, THEY ARE BOUND TO USE IT. The sober, industrious, and intelligent of the community, look to them for protection against these evils. The appeal is made, and justly, from those who *suffer* to those who are able to *prevent*. Let the Magistracy awaken to their responsibility. The evils of the public-house system have grown up *under their own eyes*, almost without an effort to repress or prevent them. The drunkenness and crime resulting from licensed Drinking-houses are constantly

* This was *written* in 1839. Every Judge and Jailer and Prison Inspector throughout the kingdom has been telling us 'the old story' since that day. It was reserved for the *Economist*, London Newspaper, sixteen years after, viz. in June 1856, to announce, on the authority of some shallow, confused, and imperfect statistics—*that there is no material connexion between Drinking-houses and Public-disorder!* The best we can say of the *Economist* is, that it has lost its philosophy in its figures—and cannot see the wood for the trees.

brought before the Magistrates; every one of them has had abundant evidence of the connexion between public-houses and crime, and yet they continue, year by year, to renew old licenses and grant new ones!

Drinking-houses *opposed* to the ends of society.

The past is irrevocable, and, however we may lament its errors, we cannot cancel them. But the future is more in our power. Men are beginning to see that DRINKING-HOUSES ARE INCOMPATIBLE WITH THE PROSPERITY, GOOD ORDER, AND HAPPINESS OF THE COMMUNITY; and though in times of ignorance they may have been tolerated, yet now the sober and industrious look upon them as blotches and ulcers in the body politic. Many are now becoming anxious to see the nuisance removed, and surely it is but natural they should appeal for assistance and co-operation to those in whose hands is placed the administration of the laws relating to this subject.

Let the great and respectable MAGISTRACY of Britain respond to the imperative call of duty and patriotism! Their power is great—their influence extensive—their opportunities abundant. Let this power be exerted, and these opportunities be embraced, and much may be done to *prevent* or to *check* intemperance. We strongly advise every Magistrate to *visit the drinking-houses in his neighborhood*, that he may judge for himself as to the manner in which they are conducted. And if he wishes to have a full view of the deplorable effects they are producing on society, let him *visit the homes of the miserable sots who frequent them*, and whom it is the interest of the landlords to keep in their deplorable slavery. Let every Magistrate do this; and then having seriously asked himself, "What can I do to stem the torrent of evil?" let him do that duty fearlessly.

Many Magistrates have already declared themselves favorable to the object of Temperance Societies; but the operations of these societies are thwarted and contracted by the licensing of public-houses. While, on the one hand, vast bodies of noble and patriotic Englismen are devoting their energies to the *suppression* of intemperance, the Law and Magistracy of England are, on the other, licensing and increasing Houses devoted to its *promotion!* He, therefore, who is a friend to the licensing of drinking-houses, is practically an enemy of Temperance: and no Magistrate who is a member or a friend of the Temperance Society can consistently sanction the licensing system, since the *tendencies* of Temperance Societies and of Public-houses are the very *opposites* of each other.

What is the grand end of human society? Is it not the freedom, order, and happiness of the community, resting on the strong and only enduring foundations of intelligence and morality? And how have Public-houses tended to promote this great end? Let hearts broken and hearths made desolate—let genius wrecked and piety hurled from its pinnacle—emphatically declare! Let the yawning grave, which prematurely receives its victims—let the prison-house, crowded with its degraded inmates—let the asylum of the most pitiable spectacle of fallen humanity—return the answer! The tendency of Public-houses to obstruct education and retard the progress of civilization—to pervert all that is good, pollute all that is pure, and aggravate all that is evil—unhappily requires neither proof nor illustration. The *fact* is written upon the page of domestic history, and inscribed upon the re-

Fruits of the Traffic.

cords of justice. The Magistrate upon the bench, and the Judge upon the seat of judgment, have the constantly recurring evidences of the fact brought before them. It is written in characters ineffaceably legible. They encircle us with 'black and bitter demonstration.' With the *multiplication* of drinking-houses intemperance has increased, and the increase of intemperance has in turn led to the augmentation of drinking-houses and the progress of crime. *They are causes and consequences which reproduce and multiply each other in an increasing ratio, and which grow continually more malignant and deadly.*

These statements are borne out by the most full and unexceptionable evidence. The case of Glasgow, where the advance of intemperance exceeded the progress of its population in a twofold proportion, may be taken as an index to the whole, and as a terrible proof of the aggressive character of this contagious evil. The establishment of BEER-SHOPS has notoriously aggravated the mischief, and swelled the catalogue of crime. That fatal measure of mistaken policy, and monument of senatorial ignorance, stripped 'the Traffic' of whatever degree of respectability it possessed, by permitting men of small capital, and less principle, to take part in poisoning and polluting the public morals. The hapless victims of intemperance were assailed by more frequent temptations, while the innocent and unwary were sought to be betrayed by every species of seductive attraction which perverted ingenuity could invent. Hence those alarming consequences which have, at length, challenged the grave attention of Parliament, and to which, we trust, it will apply an efficient and unsparing remedy.

What time teaches.

Above *sixteen years* have past since we published the preceding address to the Magistracy of Britain, in the pages of a periodical at our command. The lapse of time, and *too unchanged* condition of things, naturally suggest reflections—some sad and some cheering.

We said—"The tendency of Public Houses to obstruct education and retard civilization, requires neither proof nor illustration." To ourself, *not*—to the world, *yes*. For sixteen years longer, society has sown the wind and reaped the whirlwind: and we have venal scribes amongst us who *yet* teach that we may expect something better from *that seed!*—and sophists who affirm, that 'the whirlwind' issues from another quarter altogether! Proof upon proof *is* needed—as line upon line. And, singular enough, the policy and principles inculcated of old upon the country—*the conjoint action of Reason and Law*—of Citizen as temperance Reformer, and of Temperance Reformer as citizen—is now hopefully embodied and illustrated in the most potent organization of our day—"THE UNITED KINGDOM ALLIANCE FOR PROCURING THE LEGISLATIVE SUPPRESSION OF THE LIQUOR TRAFFIC." The Prize of one hundred guineas offered by that Association for the best Essay on the subject, was awarded to the present writer, and his *Legal and Historical Argument*, with detailed proofs and illustrations (forming the fourth volume of his 'WORKS') is in reality an elaboration of the preceding statements.

The development of all great ideas and principles is slow. The human mind is not simply passive or receptive; it is conservative—and therefore *resistive*—and where resistive, *non*-receptive. To change

the figure, the weeds of *habit* and *prejudice* pre-occupy the soil, and, growing in rank luxuriance, shut out the vivifying light from the seeds of truth lying beneath. *Time*, therefore, is required for the accumulation and aggregation of growing-thoughts—and man is impatient of the slow processes of Providence. To him, even

> Science moves but slowly, creeping on from point to point,
> Yet, I doubt not, thrö the ages one increasing purpose runs,
> And the thoughts of men are widen'd with the process of the suns.

So, in this cause, we doubt not, the progress is *sure:* nay, is sometimes very visible within one generation. In our youth, all the world was deploring and denouncing Intemperance—*the effect*. No one asked after the cause: every one fed the cause, and wondered why the consequences continued! Society hasn't much philosophy now—then it had less. But the *Idea* came at last: and flashed upon the world like an inspiration—as indeed it was. The cause of Drunkenness was *the Drink*—not any drink, but *one* drink—*intoxicating* drink—or, more precisely, the nature of the drink in relation to the vital organism of man. It had the fatal quality of *generating* the effect: —to arrest the effect, then, we must banish the cause. Hence the æra of TOTAL ABSTINENCE. Along with this philosophy, came the germs of another truth. We will not trust to individual determination merely—give us your pledge—your *word of honor*—your 'guarantee.' Well, this too helped millions—but there were millions it could *not* help. It confessed, however, that man could not act upon *mere opinion;* it acknowledged the potency of habit and the tyranny of custom. To some extent, we repeat, it *was* a guarantee—but, unluckily, it was not the 'Material guarantee'—the *evacuation of the principalities*. What is wanted is precisely this—*the expulsion of the Traffic*—the destruction of the fortresses of Intemperance—so that he who *wishes to be temperate*, may not be tempted by irresistible attractions, or constrained by social opinions, to contravene the dictates of his own conscience. In short, we must prohibit that which *moulds* to evil and destructive habits—must recollect that Customs and Institutions are more truly educative than formulas and opinions—must, therefore, in order to bring our outward social life into harmony with our theoretic teaching, demand the total and immediate banishment of the *Traffic* in Drunkenness.

The three stages of the development of the philosophy of Temperance.

We said above, 'Things remain too unchanged.' And this is our answer to those who urge delay: men who perceive the disease and apply no remedy.

'Knowlege comes, but *Wisdom* lingers.'

How much palaver *about* the Evil, at Brewster's sessions, in newspapers and magazines, in pulpits and in parliament, since 1836! What has this timid policy *done?* The Procrastinators still counsel 'delay'—twenty years' talk, and not 'prepared' for *action* yet! Twenty years talk, and the Beer House Curse and Sunday-Traffic in Tippling still blighting the land! Had we gone for the right measure and ventilated the whole system—appealed to the interest of the citizen and the moral sense of the people—by this time, it is our belief, Old England would have set the example of Prohibition to New England.

Policy of the Future.

The action of the Temperance man must be united with that of the Citizen, for the sake of ourselves, our cause, and our country. It is not enough that, by grand efforts, we shut out the floods to day. *We must build up a legal breakwater against its return to morrow.* The world already knows that, *if* we adhere to our convictions—or to the pledge which symbols it—we are beyond the reach of the destroyer. That is only saying, however, that if we stand—we stand. But how few men, amidst the manifold temptations of the world (to which drink adds a subtle potency) *can* stand?—can keep *any* pledge, explicit or implicit—unfailingly thrö a course of years? How few can keep this special one! Even to us who do—*and there is no greater proof of strength of mind*—the Traffic is not less *to us* an enemy and a nuisance. Society, as a whole, is always subject to its seductions—nay, what is often overlooked, the Teetotaler is liable in traveling and transacting business to *special* temptations: for not only does the Traffic not provide for *his* 'convenience' and accommodation, suitable things—it places positive obstacles in his path, and by looks and intolerance seeks to make the practice of his duty disagreeable. Moreover, we are *compelled* to pay the taxes which the Traffic imposes, and are continually exposed to the risk of its thousand mischiefs—to terrible dangers of various kinds—to murder, broils, violence, and dishonor—to railroad disasters and other accidents—to explosions, shipwrecks, and conflagrations. From every rank and quarter—from male and female, young and old—from the cottage of the poor and the palace of the opulent—from the learned collegian and the unlettered clown—from the innocent victim and the doomed culprit—from the poor house and lunatic asylum—from gaol and from scaffold—a cry comes up day and night, week and month, year and century—a wailing cry of anguish—a cry of 'help' from the suffering and of despair from the guilty and the lost! Appealing, then, to the *moral sense* of the Nation and the Legislature, LET US DEMAND RELIEF FROM THE SNARE, THE BURDEN, AND THE CURSE.

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