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ORIGINAL ABUSES

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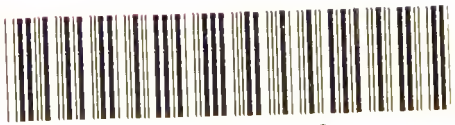

HYDROPATHIC APHORISMS.

HYDROPATHIC APHORISMS.

THE SIMPLE TREATMENT

OF

DISEASE

CONTRASTED WITH

MEDICINAL ABUSES;

OR, THE WHY AND WHEREFORE

OF

THE WATER CURE.

By JOHN BALBIRNIE, M.A., M.D.,

AUTHOR OF "THE WATER CURE IN CONSUMPTION," &c.

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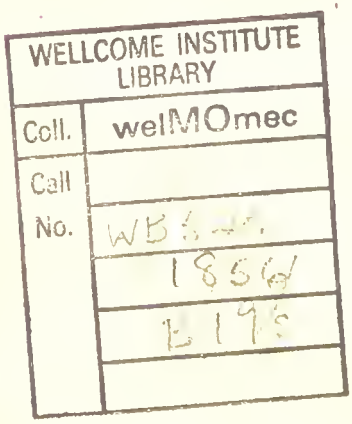

PREFACE

A few years ago, the Author published a volume, entitled "The Philosophy of the Water Cure: a Development of the True Principles of Health and Longevity;" and, subsequently, an Appendix to this Work, or a following-out of its argument, with the title of "The Words of a Water Doctor." Both of these volumes have met with a very flattering reception at the hands of critics, professional men, and the public generally, and together, have been designated as an unanswerable defence of the faith and practice of the Hydropathist. Large editions have been printed and exhausted in this country. The former work alone has gone through eight editions in the United States. Being now out of print, and one

editions called for, I have essayed to incorporate the two volumes into one, with a new title. In this altered guise, with corrections and additions, I venture to bespeak, of an intelligent public, a patient and attentive ear to my pleading of a cause, which is not that of a party or of a profession, but the cause of Human Progress—the amelioration of society—the diminution of its sufferings.

JOHN BALBIRNIE, M.D.

Bridge of Allan, Stirlingshire,
July 28th, 1856.

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HYDROPATHIC APHORISMS,

&c., &c.

CHAPTER I.

INTRODUCTORY.

1. An ardent spirit of inquiry—a keen sifting of old systems—with a wide publicity to new discoveries—are peculiar features of the times we live in. Truth is allowed now lessthan ever to be seowled down by the frowns of authority, or put out of eountenanee by the jeers of ridieule. Personal feelings and eonsiderations, now less than ever oppose the progress of seientifie improvement, and the moral and physieal amelioration of society. Appeals to the vague fears and prejudices of the public, veneration for preeedent, and respect for the mere sanetions of time, or eustom, or fashion, are found but shallow substitutes for sound reasoning. Calumny and detraction are not now received as logic; nor personalities and abuse, as arguments. Such weapons are repu-

diated by a good cause, and fail to bolster up a bad one. The zeal of party only stirs up the angry passions of human nature; the zeal of science, on the contrary, nurtures the amenities of conduct, and reproves the asperities of controversy.

2. These reflections are suggested by the reception and progress of the Water Cure. This great innovation on modern practice—at variance with established usages, and opposed to long dominant prejudices—neither suggested by the lights of science, nor imported from the seats of refinement—has, nevertheless, already happily emerged from the ordeal of ridicule, misrepresentation, and abuse, which it is the fate of all new remedies—if not of every boon of humanity—to encounter. The indifference that for a while indueed neglect, and the prejudice that repelled investigation, have given place to a dispassionate inquiry into matters of fact, and to that moral greatness that stoops to confess and retract its error. Discussion has only confirmed the merits of the new treatment, and settled its pretensions on an impregnable basis. Its claims, extensively to diminish the sum of human suffering, have been substantiated; and the result is, that it is now as widely diffusing its

benefits, as are the wants of society it meets, and the defects of medical practice it supplies.

3. The voice of experience, and the researches of the philosopher, alike unite to justify this popularity. "A great cloud of witnesses" has arisen up in its behalf, not only on the Continent of Europe, but in our own country—trophies of its power to cure, when all the usual resources of the healing art, in the most skilful hands, had failed. DECEPTION HAS NOT BEEN, AND COULD NOT BE PRACTISED. THE NEW TREATMENT IS NOT CARRIED OUT IN A CORNER, BUT IN THE OPEN LIGHT OF DAY, AND CHALLENGING THE INVESTIGATION OF ALL MEN. The darkness, mysticism, and manœuvre in which quackery hides its head and enacts its deeds, have no part in it.

4. The derision attempted to be thrown upon the external application and internal use of cold water as a remedial agent, could only originate in an utter ignorance of the true principles of physiology, and of the objects and *rationale* of a philosophic treatment of disease. The processes of the Water Cure, moreover, are reducible to a sounder scientific system; and are more in accordance with the latest discoveries regarding the phenomena of healthy and diseased actions, than the uncertain,

contradictory, and random practice of physic. If the doctrines of the schools, therefore, are to be the guides of practice, the Water Cure, as being in strict conformity with the teachings of physiology and pathology, has greater claims to the favour of the public, and the confidence of the profession!

5. It is vain for prejudiced medical writers to attempt to depreciate a system, whose resources are so precisely suited, and so extensively applicable, to the wants of a diseased organism. Such attempts are only to be compared to the erudite essays, written many years ago, by the heads of literature and science, to prove that the project of lighting streets and houses with gas was a chimera; that to cross the Atlantic by steam was impossible; and that Sir Walter Scott could not be the author of the "Waverley Novels."

6. The mystery of Physic, like all other mysteries, has overlaid and disguised infinite mischief. To divest the healing art of its mystery is to strike at the root of its pernicious power over the human intellect. The progress of knowledge, and the advancement of society, now demand that the veil shall be drawn aside, under which its operations have been too long carried on, and that its pretensions be reduced to their just level.

7. The art of restoring and preserving health should be no longer the exclusive pursuit of a privileged and interested order. The doctrines relative to health and disease are not subjects of barren speculation, but matter of equal interest to all—one that comes home alike to every man's business and bosom. The public have themselves to blame for having shifted the study of the agencies on which health depends, from the individuals who are themselves most concerned, and for having deputed it to those who make a gain by disease. Patients have been too long accustomed to surrender their common sense in the affairs of their health—losing their reason, as it were, in the fumes of the incense offered up at the shrine of medical fashion: and they have heavily paid the penalty of their folly or indifference.

8. We hope, however, that the time is now arrived wherein how to take care of his corporeal frame, will constitute one of the leading parts of the moral and intellectual education of man. For this purpose, he must study the structure and functions of the various bodily organs, the phenomena of health and disease, and the means of perfecting the physical development of individuals and communities. He will then learn that health

depends, in a very high degree, on the care taken to fulfil the conditions which the Creator has deemed to be essential to the due action and preservation of the various bodily organs.

9. PREVENTION IS BETTER THAN CURE. The whole Prophylactic Art is comprised in a few practical rules regarding the management of the skin, muscles, lungs, digestive organs, and brain. Ill health, therefore, arises from causes level to man's knowledge, and within his control. The stimulus to this study is the penalty of its neglect.

10. The most useful function of the physician, in the ages to come, will be to develope to the rising generations the first principles of medical philosophy—to point out the most ordinary sources of disease—to discipline the will to self-denial, the passions to restraint—to teach the best methods of preserving health when in possession, and of regaining it when lost—to aim, in short, at extinguishing maladies by *physical education*, and by the diffusion of sound anatomical, physiological, and pathological knowledge. These services may well entitle them to the rewards of Senates: for, in inculcating the precepts of health, physicians will thereby, both directly and indi-

rectly, promote the principles of morality and the public weal, and thus further the ends of legislation.

11. Quackery will be put down, not by acts of parliament, but by the diffusion of knowledge. Pretence alone dreads investigation; real knowledge courts inquiry.

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12. The authority of great names in Medicine, as elsewhere, must yield to the evidence of our senses, and the convictions of ealmly-formed judgment. Rank and station, age and experience, honesty and sincerity, do not exempt from error, or place beyond prejudice. The strong arm of mere authority, therefore, or the might of selfish interests, should not be allowed to erect barriers against wholesome innovations.

13. All GREAT TRUTHS are slow in forcing themselves into general assent and acceptation. From the very nature of things it must be so. They must needs encounter opposition and obloquy, as an ordeal by fire, to try them: what is false will not stand the test, will be burnt up as dry stubble—but THE TRUTH is indestructible, and endureth for

ever. In vain will vested interests, or dominant opinions, light and feed the fires of persecution. With every fresh effort at extinction, such is the indomitable vitality of truth, it will rise up, phœnix-like—regenerated from its ashes. The truth, therefore, is immortal. It has always been so, and ever will be so, in this world. It cannot be otherwise. This is its constitution by Eternal decree. When the truth seems overthrown, suppressed, eradicated, or hidden under a load of errors, corruptions, and abuses, it is only like the seed thrown into the ground—*it dies but to quicken again*—to germinate, one day, into a plant of renown. Reformers, therefore, and expectants of "the good time coming," be not discouraged in your labours! In due season ye shall reap, whether ye faint or not—but the sooner by not fainting. PROGRESS is God's Law, impressed on all finite beings, and distinguishing them from the INFINITE, who is perfection and knoweth no change.

14. The advocate of GREAT REFORMS must possess as his predominant quality, *moral courage*. He must be content to act rightly from principle, from persuasion, as the organ of truth, without regard to the opinions, authority, example, frowns,

or favour of his fellow men. The first reward of his self-denial will be sure to be *calumny* on the part of those from whom he secedes, and *apathy* on the part of those to whom he appeals in justification of his secession. Convinced of the soundness of his cause, however, he has no need to fear the result, although the time of its coming forth may be tardy. Instead of flinching from opposition, he will rather *court it*, when it is honest, not factious.

15. It has universally been the fate of all the most beneficial innovations in the healing art, to be those which are the most captiously questioned, virulently reviled, and tardily adopted. It is no matter of marvel, then, if some medical men look on the Water Cure with a sinister eye. Its denunciation is to be expected, if it were only from the reverence entertained for old systems, and the prejudice with which others behold the alterations made by their contemporaries. The utility and importance of the new system may well be measured by the amount of the obloquy and opposition it calls forth. So overwhelming is the evidence of *abstract reasoning* and *practical facts* in its support, that no well-principled medical man can justify to his conscience his refusal to recom-

mend the study of its claims, or a trial of its power.

16. In attempting to obstruct the progress of the Water Cure, and to debar the victims of unrelieved disease from the chance of benefit, many medical men, it is to be charitably hoped, are actuated by the purest motives; as mistrustful of the novelty of the water processes; as questioning the *safety*, at least the POLICY, of the RADICAL REFORMS of which it is the herald and forerunner; and as having before their eyes the fate of certain pretended reformers in medicine, whose theories vanished with the fashion of the times, or perished with their authors. Some little of this feeling must, in all justice, be set down to the account of *the interference of the new system with old interests*.

17. When the mass of the public is convinced of the benefits of the Water Cure, professional opposition and prejudice will be equally nugatory. If it be not so, the people will have their own apathy or ignorance to blame for it. Society, it is to be hoped, is too far advanced, too enlightened, to permit these movements to be discouraged by a class whose interest it is to foster existing abuses. Unless the Faculty follow, or rather lead, as they should do, their advice will neither be so implicitly

obeyed, nor their character so highly reverenced, as it was wont to be.

18. All the opposition, however, does not proceed from the profession. It was to be expected that a plan of treatment, and a mode of life, which struck at the root of long-cherished social habits and early-imbibed domestic prejudices, should not meet with a very calm or impartial investigation in many quarters. But the Temperance Reform has served admirably (shall we say *providentially?*) as a precursor of the triumphs of the Water Cure.

19. Courage, honesty, temper, talent, and perseverance, are necessary to eradicate these dislikes. Pains must be taken to recall the wandering—to lead into the right path the perverse, the unbelieving, the unwilling, the fearful; to convince them by plain and irrefragible facts—cases patent to their observation, and occurring at their own doors—of the efficiency of the Water Cure.

20. The deep-rooted love of human nature for the complicated, the marvellous, and the mystical, offers one of the greatest hindrances to the reception (among the masses) of the simple system of the Water Cure. The healing virtues of plain cold water, because of its commonness and abundance, are overlooked; while, on the contrary, implicit

faith is placed in things made with difficulty, procured with expense, and emblazoned with high-sounding titles.

21. Such is, or was, the mania for medicines—so much are the sophisticated products of Art preferred to the simple gifts of Nature—that for a renowned drug-practitioner to announce, publicly, his faith in the Water Cure, and *to act upon his convictions*, would be to sacrifice his *lay* connection, and cause him to be *cut* by his medical brethren. Hence many, who are convinced of the truth of the new pretensions, lack moral courage to utter a public testimony in their behalf. Must PRINCIPLE, however, be the slave of EXPEDIENCY? How far it is manly or upright to suppress the dictates of one's better judgment in obedience to public opinion, or the necessity of one's circumstances, I leave others to determine.

22. There are not wanting, however, in all times and places, physicians who, in matters of professional innovation, are not deterred from recommending TRUTH, because novel or unpopular; who in a good cause have the courage to brave the prejudices of the ignorant or the unthinking, and who despise alike the calumny, the neglect, or the scorn of their brethren.

23. It is the part of an impartial judge to weigh evidence of character, before uttering sentence of condemnation. The Water Cure pre-eminently deserves of its judges—lay and professional—unprejudiced examination—a mind alike free from the fanaticism of its advocates, on the one hand, and the bigotry of its adversaries on the other;—and needs for its discussion all that sound sense, patient temper, and good breeding, ever characteristic of the most distinguished members of the profession.

24. All medical practice is *empirical* in the true sense of the term, and is only to be tested by Induction. In weighing the pretensions of the Water Cure, the possibility of a fallacious decision cannot be admitted; because there is both sufficiency of facts and competency of witnesses.

25. Incredulity here displays either a lack of knowledge, or a defect of judgment. As the Water Cure is not a thing of yesterday, nor confined in its operations to one remote, obscure, outlandish spot, so neither is it frequented only by a few stray visitants. The patients are now of every class, and from every clime, and come across us in every path of life. If such persons had been the dupes of false representations,

it is reasonable to conclude, that they would long ago have warned the world of an imposture, and saved alike the pockets and the bodies of all whom their voices could reach. But where do we hear of any such testimonies against the system?

26. The alleged "dangers" of the Water Cure are mere chimeras — phantoms conjured up to terrify the weak, or to stagger the strong. The same "dangerous" results were prognosticated of the non-coercion treatment of the insane. To confess the truth, this is merely one of the same obstacles which PREJUDICE raises against INNOVATION—or SELF-INTEREST against PUBLIC CONVENIENCE. The characters of men and things are too often appreciated according to popular rumour; and the best of them despised and rejected in their day, because the leaders of opinion, and then the multitude, speak evil of them. Hence the hostility to Reformers — the jealous watching of their steps—the uncharitable misconstruction of their motives — often the savage thirst for their blood. Jesus Christ and his Apostles were considered "dangerous" characters, disaffected, seditious—enemies of government, and unworthy to live—and this, not merely

by the "profanum vulgus," *but by the professed fearers of God, the venerators of the Prophets, the public exemplars and expounders of religion!* Individuals of similar spirit and function—the most God-like of human kind—have had their hottest persecution from similar quarters, since. The Faculty of Paris at first denounced fermented bread as *poisonous!* The same learned body refused permission to print the work that gave to Surgery the greatest practical improvement it ever received—namely, that of Ambrose Parè, on the application of ligatures to arteries after operations.*

27. If the Faculty profess, as they do, to follow their vocation, pre-eminently, pro bono publico, can they consistently withhold, or would they wish to restrain their fellow-men—we do not say from a trial of the efficiency of *water* relatively to *drugs*, in simple cases, but—*from the chances of recovery in cases where they confess medicine avails not?* Why debar those, at least, whom the old tactics have failed to benefit, of the trial of a system whose efficacy is attested by the most conclusive evidence? The profession is called upon to show

* They said, "What! trust a man's life to a thread!" and persecuted him, until his practice was nearly destroyed.

magnanimity on the present occasion—to postpone their private interests to the public weal. In the end, they will not be losers. New fields for their talents will open up. Medicine, as a practical art, will never be superseded. The weapons of warfare will indeed be changed; but the aid and opinions of physicians will still be as necessary as ever. In the meantime—in the present transition stage from the old to the new discipline—difference of partizanship—difference of means in working out one common end, should not alienate professional men, as it has too often done—should not raise enmity between brethren,

28. The really sore part in the present case—"the head and front of the offending"—is, that a Silesian *peasant*, and not a *learned professor*, is destined to revolutionise, at no distant day, the practice of physic, and with it, to a great extent, the habits of society. It is humbling to the pride of science to owe its discoveries to accident, and to receive its improvements from the illiterate. But *real* greatness of mind and character *ever* prompts its possessor to seek and accept information from the humblest, as well as the loftiest sources.

29. The Water Cure, when adopted by the

profession generally, will be the death-blow to quacks and quackery. The concoctors of the various humbugs, to be expected in such a country as this, have now seen their best days; and it is to be expected that a more honest set will succeed them. The trading speculators in the Water Cure, and their doctor servants, real or pretended, are not excluded from this category.

30. The professional opposition to the new treatment is gratuitous—alike without grace, and without reason. The same cold-water applications that pretend to shock, as dangerous innovations, are but the revival of obsolete practices once in vogue in our own country, in Germany, and in the South of Europe, and are but an enforcement of the recommendations of modern chemistry. The sanguine predictions of Dr. Currie and his coadjutors are now being realised. The practice of the professional censurers of Priessnitz, and his professional followers, only differs in *degree*, not in *kind*.

31. The history of medicine is, in fact, but a series of revolutions. Practice that is *now* considered heterodox was *once* most orthodox; and, upon its first assailants were evoked the wrath and persecution of the whole Faculty. The immortal

Sydenham quailed before a storm of this kind. Yet the innovations in question are hailed as an emancipation from inveterate and malignant error. The present is an epoch of like change. There is the old unwillingness to abandon beaten paths—the same clinging to time-honored prejudices. Private interests are now, as before, at variance with public benefits; and the collision will always produce the same shock, so long as human nature remains the same. New truths must now encounter the same opposition and obloquy they ever did. Advantages that come recommended by this universal ordeal, possess, at least, some claims to notice; as, without it, their validity might be questioned.

32. The present deviation from general usage is an innovation in practice as great as any preceding; and a similar improvement in the results has followed the change. The best way, perhaps, is to leave it to time to dispel the fallacies and falsehoods now so current against this, as against other innovations. If, however, the spirit of innovation had been checked, what would have been to-day the state of Mechanics, Mathematics, Astronomy, Geography, Geology, Chemistry, and all our flourishing Arts and Sciences? Those per-

sons have read history, and studied human nature, to very little profit, who think to silence Truth by outcry, or to arrest its progress by opposition. Hard names and calumnious imputations are very questionable weapons of literary warfare, and are only arms, like the clubs and brick-bats of the mob, which despair takes up in a fury, when sound argument or a good cause fails.

33. We have of set purpose forborn *to make the most* of the subject. Much more, we conceive, is to be gained of our adversaries by conciliation, than by an opposite line of conduct. The former will tend to disarm their hostility, and to invite their calm inquiry; the latter, by creating irritation, will only confirm prejudice, and repel investigation; the one will gain over from a wrong course — the other will only harden in error. Truth is strong enough in its own intrinsic merits, and transparent enough in its own naked simplicity, effectually to appeal to, and convince the honest and dispassionate in research. The advocates of the Water Cure are especially in a condition to dispense with the acrimonious weapons of violence and invective, and to forego the adventitious aids of ridicule and sarcasm.

CHAPTER II.

THE GROUNDS OF NON-CONFIDENCE IN DRUG-MEDICATION.

34. The search after remedies, and the multiplication of their forms, are a necessary result of man's instinct of self-preservation, and his innate desire of health. To remove pain, to mitigate infirmities, and to prolong life, the stores of air, earth, and water are ransacked, and the Chemic force of fire invoked. On every discovery of natural objects, the earnest inquiry is,—Will it afford a fresh weapon for the arsenal of physic? The Chemist and Pharmaceutist set about analysing its constituents, extracting its "active principle," and assigning it a place in the Pharmacopœia. Even before the properties and laws of a new "article" have been investigated, or conclusive experiments made, some medical celebrity has already, on the strength of a few isolated cases, established a theory on it; promulgated his dogma; given it a fashion; and won it a reputation. Such is the history of many medicaments

celebrated in their day. But the reputation proved false; the dogma fruitless; the fashion vain; the theory empty. The *post hoc ergo propter hoc* logic is the greatest vice of medical speculations, and the source of the most grievous practical errors.

35. The obscurity and uncertainty of physic have, indeed, in all ages been fearfully destructive of human life. BOERHAAVE said it had been better that Peruvian Bark had never been known, for it had killed more people than all the armies of Louis XIV! What shall be said of MERCURY, *then?* Have NAPOLEON'S armies immolated more victims?

36. The favorite standard, and much vaunted weapons of medical warfare, are all elaborate poisons; *e. g.*, mercury, antimony, opium, colchicum, foxglove, aloes, elaterium, hemlock, hellebore, henbane, stramonium, scammony, gamboge, colocynth, rue, jalap, broom, lead, copper, tin, silver, prussic acid, and arsenic. Their being poisons would be no valid argument against these substances being used as remedies: for the plainest articles of diet, *if unduly used*, would act perniciously. The difficulty is, precisely, to know the due use of the articles in question—their doses, their modes of use, the circumstances under which

they are to be used, the cases and constitutions they are fitted for, and the proper mode of preparing them, so as to develop their medicinal virtues. As administered according to medical "use and wont," (for there is no more accurate guide of practice,) they are fearfully uncertain in their effect, as well as sophisticated in their preparation by the frauds of the dealer or the errors of the laboratory. A dose that is inert to some constitutions acts as a poison to others. That you cannot *safely* experiment with these articles will surely be admitted by every one, who considers that the stomach is a delicate, sensitive, vital structure, not tinned like a tea-kettle, or cased with cast iron. In the arts of life we use strong materials for rough usages; not so with the drug doctor.

37. The enumeration of this farrago of medicines—the boasted "sheet anchors" of practice—may well suggest the doubt to every reflecting observer, whether such violent and corrosive substances, forced by the tyranny of medical dictation into the human stomach to quell disease, do not produce more distress in the economy than that which they are intended to remove?—whether the remedy be not worse than the disease?—whe-

ther physic has not been more destructive than beneficial to the race of man? It has been supposed that, if a calculation could be made of the numbers injured or benefited by medical art, the balance would preponderate *against* the physician! This is the gentlest putting of a fearful truth.

38. It is the very violence of the action of drugs that spirits up the faith of the laity therein, and gives them their popularity. The unnatural excretions they produce (and which is generally the result of mere chemical changes) is considered a proof of their salutary action in ridding the system of what they call "bad stuff." Some are not satisfied that they can be cured of so simple a matter as a broken, bruised, or cut limb, unless they be freely bled, drugged, and drained in every way—unless put to extreme pain by racking pills and nauseating draughts! To prescribe the painful, and to proscribe the pleasant, is a certain test with them of the due and orthodox consideration of a case!

39. The stomach of man was intended by the Author of Nature *only for food and drink*. This is very manifest. The introduction of medicines, or articles foreign to nutriment (as stimulating con-

diments, alcoholic drinks, &c.,) *was never contemplated.* In the economy of natural digestion there is no provision made for the disposal of such substances. On the contrary, where introduced, their only effect is to rob the stomach of its inherent healthy powers and juices. The gastric juice is a fluid most *precious* in the economy—never to be imitated or substituted by art, and therefore never to be lightly or bootlessly wasted—*a fluid that is excreted on the introduction of food,* or other body which, by its size or nature, rouses the vermicular movements of the stomach. Medicines therefore, in virtue of their irritating qualities as well as by their bulk, must necessarily prove exceedingly injurious in all cases of disease, but doubly so where the fine tunics of the stomach are the principal seat of such a malady; inasmuch as they task the organic powers to a vain effort, and elaborate the rarest and most expensive fluid of the economy *only to throw it away*—thus depriving the food afterwards to be introduced, of the wherewithal for its own digestion. The useless waste, in this manner, of the *real solvent of the food,* is THE GREATEST INJURY that could be inflicted on the system; for it DRIES UP, at the fountain-head, the source of all repair and restoration, and destroys

the fundamental condition of health—the essential element of physical *bien être*. Thus that which should be a laboratory of nourishment, and a fountain of strength and stamina to the constitution, becomes, in a greater or lesser degree, by the use of *drams* or *drugs*, only a source of irritation, discomfort, and disease.

40. "No disease," remarks Dr. TRUEMAN, in his work on Food, "can be cured by drugs without injury to the health; for the remedies employed for this purpose *always cause some excessive and unnatural action* of the body, which lessens its power. The administration of drugs goes upon the principle of inflicting a lesser evil to avoid a greater.

41. No *positive* results can ever be attained in the *old* path of Physic. This is manifest to all unprejudiced medical men, and to every thoughtful layman. Because by the employment of several active medicines at one and the same time, (as is invariably the practice,) it is impossible to form a rational judgment of their respective curative influence. The successful issue is more the result of accident than of calculation. It was once not an uncommon thing to mix *a hundred ingredients* in one nostrum! What will be said of the *essence*

of dead men's skulls, peacocks' dung, the scrapings of the wool of sheep—all veritable prescriptions in their day! But to come to the more moderate, recent, and scientific combinations, how can the properties of any individual medicine be thus discriminated? How separate the inert from the active, the useful from the useless or the hurtful, and that which cures from that which aggravates?

42. How inefficient, how pernicious, the practice of Medicine has been in past times, it needs no ghost from the other world to tell us; otherwise an innumerable host of departed spirits might be summoned up from "the vasty deep," helped there, or sent there, before their time. The records of the mighty dead mournfully speak on this theme,—names dear to science and literature, renowned for religion, illustrious in art, or eminent in politics—all prematurely removed off the fields of their fame, and from scenes of labour they could ill be spared from, and hardly be replaced in. Let each reader pause here, and bid, the while, memory do her task,—let him penetrate the long vista of elapsed years, and contemplate the breaches in his family and social circle that can never be repaired—friends and kindred gone before the time of Nature, or likely to go!—let

him survey the dark funereal scroll of the past, and then declare how much room there remains for improvement in the god-like Art of Healing!

43. But what have said some of the sages and oracles of physic on the subject? Let us hear their confessions—their *death-bed confessions* they might be styled. Was their faith in their own system such as to encourage the confidence, and settle the belief, therein, of the laity? RADCLIFFE said, "on entering my profession, I deemed I knew a hundred remedies for every disease; now, alas! at the close of my career, I leave a hundred diseases without a remedy." What was the testimony of BAILLIE, a great master in his art, and, in his day, the undisputed monarch of practice—*medicorum facile princeps?* In the prospect of going to render up his great account, his conclusion of the whole matter was this: "*He had no faith in medicines whatever; he neither knew their manner of action, nor the principles which should regulate their administration.*" *A priest without faith!*

"Men may live fools, but fools they cannot die."

44. Few dare lie or disguise in the face of eternity. An opinion of conscience so delivered,

may surely be relied on, and ought to have some weight. To what was this dying declaration tantamount? Surely this:—that he had been blundering on, all his life-time, in the dark, deceiving and being deceived; steering in a trackless ocean without sun, without stars, without compass to guide! In plain words—enacting a formal but solemn *hocus pocus* with his patients! How humiliating to human nature, to the pride of science, and the pomp of colleges, is such a spectacle! A great High Priest of medical mysteries ending his career with a confession of the jugglery he had all his life been unconsciously practising! When the Oracle exposes his own mummeries, and reveals the hollow deceptions of his shrine, there may soon be expected an end of the *craft*. His responses will compel no more faith; his altar attract no more worshippers.

45. No more telling confession to the same effect could be adduced than that placed as a motto of the title page of this work, the words of one of the most experienced, clever, and accomplished physicians who ever lived. To the same purport the illustrious Boerhaave, dying, testified. So also many other eminent names; but the time would fail us to refer to them. We give the *coup de*

grace to these mournful testimonies, by quoting that of the justly celebrated Dr. GREGORY, who declares, "*That more than ninety-nine parts in a hundred of all that has been written on the theory and practice of Physic, for more than two thousand years, is absolutely useless, and worthy to be known but as a matter of curiosity, or a miserable warning and example of the worst errors to which we are prone.*"

46. These matter-of-fact statements, are calculated to awaken useful reflections in the reader. We trust we shall not be deemed speaking beyond bounds, when we say, that the preservation of the race of man hitherto has *seemed* to depend on *chance,* so precarious have been the foundations of practical Medicine. The whole fabric is based in error, on the uncertain experiments of charlatans, on chance-recoveries, or on knowledge gained by the licensed professors of the Art, after wading to it through seas of blood, and at the sacrifice of innumerable lives.

47. After two thousand years of medical irrationality, uncertainty, and inefficiency, the world may not only *doubt,* but feel something of the mortification and indignancy of those who wake up to consciousness and truth, after having been

so long the dupes of a fond but fatal delusion! Surely they may be justified in turning their eyes and fixing their hopes, on a system that promises more, that better accords with the first principles of healing, and which, in point of actual results, amply vindicates the confidence reposed in it.

48. Will it now be considered a matter of marvel, that illicit pretenders to medical mysteries have, in all times, met with a ready ear, and a hearty patronage, from the highest as well as from the lowest classes of the community? Unless, in the hands of a few really discriminating and cautious practitioners, wherein lies the advantage of employing the one party more than the other? The danger and the safety are pretty equally shared between them. When there is no alternative, what matters it whether we be devoured by Scylla, or drowned in Charybdis?

49. Physic has been defined as "the art of amusing the patient, while nature cures the disease."

50. The celebrated physician Dumoulin, being surrounded, in his last moments, by several of the most distinguished medical men of Paris, who spoke in strong terms of the loss the public would sustain by his death,—"Gentlemen," said he, suddenly, "I

leave behind me three great physicians." On their pressing him to name them, he briefly added, "Water, Exercise, and Diet."

51. "My veneration for my profession," remarked Dr. GREGORY, "is not excessive, and many things in the theory and practice of it, I consider as pure objects of ridicule, contempt, and reproach." Has it been without justice, then, that wits and shrewd observers, in every age, have derided the professors of physic—albeit a learned Faculty, and "honourable men."

52 "When one compares the good performed on the earth by half a dozen true sons of Æsculapius since the rise of the Art, with the evil done among men by the countless number of doctors of this trade, one will doubtless think, that it were much better if there never had been a physician in the world."—BOERHAAVE.

53. "We have not only multiplied diseases, but have made them more fatal."—RUSH.

54. "In the actual condition of medical science, the physician mostly plays the part of simple spectator of the sad episodes which his profession furnishes him."—MAJENDIE.

55. In the face of these confessions of the highest medical authorities, the professional oracles of

their day, it will not be, for one moment, pretended or maintained that the liberal ART OF HEALING has kept pace with the advance of the sciences on which it should be based. It cannot, indeed, support any pretensions to the rank of a science. Physicians neither know the *modus operandi* of medicines; nor are they agreed about their doses; nor have they established philosophic canons and principles to regulate their use. We must confess that the Practice of Medicine, even in the most skilful hands, is all a matter of guess —a game of chance! With too biting truth in the satire, has D'Alembert said of our conjectural art, "Nature is fighting with a disease; a blind man armed with a club—that is, a physician—comes to settle the difference. He first tries to make peace; when he cannot accomplish this, he lifts his club *and strikes at random:* if he strikes the disease, he kills the disease; if he strikes nature, he kills nature."

56. As regards the great bulk of the medicaments in daily use, and as respects even the simplest of them, we know nothing *very* accurate as to their really useful principles; the pathological states that indicate them, their doses, their modes of action, and effects, general or especial, primary

or consecutive, local or constitutional; not even in any one given disease.

57. If this be the case in regard to any single remedy in any single disease, how much more difficult must be the inquiry, when the question is of some three or four or six contradictory ingredients combined into one heterogeneous melange, and of their operation in a multitude of diseases? How far does not one drug or combination destroy the effect of another, if it does not alter its properties, so as to form a *tertium quid*, widely different in its effects from those intended, if it be not absolutely pernicious? So little has yet been determined in this domain of Medicine: and so wide a field yet remains to be explored! Science has advanced in all other points: here it has been stationary; remaining, save in a small number of cases, almost in the primeval uncertainty in which the Father of Physic himself left it.

58. It is only a dictate of common sense, that, to prescribe a remedy with confidence, and to employ it with skill and success, its action must first be sure and well-determined. The enlightened treatment of diseases must be founded, not only on sound views of Pathology, directed by accurate powers of observation, and habits of pro-

found reflection, but on an intimate knowledge, or at least a satisfactory theory, of the *modus operandi* of the means we employ to combat it. Otherwise we fight an enemy in the dark; we deal our blows indiscriminately or bootlessly—injuring what we should protect—repelling where we wish to conciliate—and irritating where we intend to soothe: we thus confess ourselves, indeed the vain practitioners of a *conjectural art*: if we are not, in too many instances, but licensed manslayers—the not guiltless administrators of a public bane. What is blind empiricism, if it be not the employment of remedies, whose action is unknown or uncertain, against disease whose real nature is equally obscure? But the scientific practitioner of the Water Cure repels this insinuation on the justest grounds. He combats diseases, whose material conditions are among the best ascertained facts of science, with a remedy whose action he can most accurately appreciate, seconded by those hygeienic influences whose effects are known and certain. This is the only part of therapeutics which deserves the name of science—the only part that can be administered without occasional qualms of conscience.

59. A blind confidence in the supposed efficacy

of "nostrums," and a farrago of formulæ—"sheet-anchors"—resources varying with the fashion of the times, and rising or falling with the popularity of teachers—has till lately repelled investigation into the only safe and solid basis of therapeutics—the vital changes of the solids and fluids effected in health, and under disease. The study of the phenomena of CRISES—nature's own processes in recovery from disordered states of the system—is also a research that promises to yield the richest fruits. It is because of missing so long the true path of discovery, that the real science of healing has been impeded—physicians stultified—the sarcasms of the sceptic justified—"the divine art" stripped of its divinity, and quackery promoted to its honours.

60. The recent progress of Animal Chemistry (thanks to the illustrious Liebig), by revealing the secrets of organic as well as inorganic nature, has taught us better the laws of our economy, its wants in disease, and the true aim and extent of curative resources. The revelations in question are matters of intensest interest—promising, as they do, to give a new face to the science, and to achieve one day an entire revolution in the Art of Physic. Now, for the first time in the slumber of

ages, the axe is being effectually laid to the root of the EMPIRICISM of medical practice; and THERAPEUTICS at length finds solid rock whereon to rear its structure. The WATER CURE—(a potent development of the physiological efforts of the system)—is but a corollary to Liebig's views—a necessary result of, and appendage to, his discoveries. It was this conviction, and the congruity of the Water Cure measures with the teachings of the soundest physiology and pathology—that have made us the partizans of water that we are. The results of practice have settled a conviction of the mind into an unalterable principle of the conduct.

61. The present and past system of Polypharmacy is the relic of a barbarous age—the noxious produce of a noxious seed, sown in the infancy of the sciences. The epoch of the Crusades was a time wherein the imaginations of men ran riot. Credulity would weigh no evidence; and zeal would brook no checks. The Saracens, who then occupied Spain, and who brought along with them the medicaments and prescriptions of the Arabian physicians, first introduced to Europe the MEDICINE-MANIA. The revival of letters had not yet turned up from the dust of ages the tomes of

Hippocrates, or of Galen. It wanted not, at the era in question, the vagaries of oriental fancy, to invest their drugs with miraculous virtues. During the subsequent reigns of Astrology and Alchemy, the insane search for "the philosopher's stone" and the "elixir vitæ," resulted in the torturing of herbs and minerals, and in the addition of a host of "specifics" to the Arsenal of Physic.

62. At the present day, our therapeutical resources are multiplied beyond all precedent. But, unfortunately, science here has mistaken her true direction :—she has given us weapons, but has not taught us how to use them. It is this which has brought the reproach on medical practice that has fallen on it. It is no light matter to deal in poisonous remedies, the indications and contra-indications for which are far from accurately taught in the public schools, and are not easily appreciated in private practice. This branch of physic has never been made an exclusive study, as it deserves. With the best remedies, the modification of their use necessitated by the stage or complications of a given disease, the constitution, temperament, habit of body, mode of life, &c., are almost unascertained. These modifications are so

subtle in their nature, and the precepts of practice they involve so numerous, that unless an era should arrive, wherein "the division of labour" will appropriate to each practitioner but one exclusive class of cases—until such an Utopia of Physic exists, drug-medication will always be, as it always has been, a very uncertain, insecure, and conjectural art. As administered by nine-tenths of practitioners, medical means but too often lengthen the duration of disease, increase its complications, neutralize the efforts of nature, aggravate the sufferings, and hasten the doom of the patient. The most liberal exhibitors of physic are not the best practitioners; nor do the people who most dose themselves with drugs get soonest rid of their complaints. The physicians who have practised longest, and used medicines most, finish with a very *heretical* profession of faith in them. The abuse of medicine is, probably, as gigantic an evil as the abuse of liquors—perhaps greater; for it slays *unwitting* and *unwilling* victims.

63. The lengthened and varied list of medicaments for specific complaints—and the nearly equal results obtained in the same disease by the most conflicting modes of practice, *provided*, as Dr. Billing has remarked, *the practitioner be a man*

of sound discrimination—prove that the benefit is not owing to any specific or occult virtues residing in the drugs. It is an observation, in which perhaps all practical physicians will accord, that the various formulæ almost every one vaunts as his "sheet-anchors," are beneficial in proportion as they promptly and powerfully act upon the great excretories of the system.

64. What is, after all, the long-inscrutible *modus operandi* of medicines, in virtue of which healthy action is re-established? The phenomena of CRISES—Nature's own mode of cure—and many other facts in Pathology—throw light upon the subject. It may be affirmed, without fear of contradiction, that medicines have no absolute or specific curative power, any further than as they provoke an extra activity of one or more of the grand emunctories or drains—safety-valves of the system. The outlets or excretories in question are perspiration, diuresis, purging, vomiting, pulmonary exhalation, and cutaneous eruptions.

65. We lay it down as a principle—an incontrovertible theory—as to the *modus operandi* of really curative medicinal agents; namely, that they operate physiologically, not chemically: *i. e.*, that it is not by chemical combinations with the

products or elements of disease (and so neutralising them), but by provoking physiological actions, that they cure. What is the marvel that simple water, variously applied, should produce curative results supposed to belong only to the best directed pharmaceutic resources? A very slight acquaintance with the curative effects of drugs, and with the operations of water, will suffice to show that *medicines have no physiological agency that water has not: that, in fact, when medicines do cure disease, it is only when they determine those constitutional actions which water produces more safely, more simply, more certainly, and more efficaciously.*

66. It is a very remarkable fact, in favour of this view of the subject, brought out by the late researches in Vital Chemistry, namely, that the elements of the blood and of muscle or flesh, with the addition of oxygen and water, *are identical with those of the excretions*—urea, bile, carbonic acid, and ammonia—being the product of the decomposed tissues, the wasted materials of the frame passed out, in new combinations, through its great eliminators, the kidneys, liver, lungs, and skin. To eliminate these decomposed materials—to furnish elements to form these new secretions—water and oxygen are necessary. The more highly

azotized portions are expelled in the form of urea and uric acid; the oxygen uniting with the carbon keeps up the temperature. The carbonic acid formed by the slow combustion of the carbon of the muscles is exhaled from the skin and lungs.

67. Morbid products may accumulate in the system in various ways: notably in three ways. —1. From deficient vital power in the organism, or from its waste in muscular exertions, the fret of thought or the passions, &c., beyond what the supply of food repairs; there is an increased transformation of tissues greater than can be oxydised or eliminated. 2. From high feeding, excessive luxury, sleep, indolence, constipation, or obstructed excretions, the food is ill-assimilated, or morbid products are elaborated: the same result happens —an accumulation of materials, of metamorphosed tissues, more than can be oxydised and carried out of the system. 3. The retention in the body of a morbid poison, introduced from deleterious agents without, and acting as a leaven—corrupting the whole. In any of these cases, the usual elements of waste are not then simply *effete* and *inert*, but become an active *materies morbi*, either deposited in the interstices of structure, or diffused in the currents of circulation. What mode, then, so

likely or so effectual for its elimination, as a system, whose sole philosophy and aim of treatment is to excite an intense activity of the secreting and excreting functions, by the processes submitted to; the quantity of water drank; the amount of exercise taken; the powerful demand for, and the proper disposal of nourishment, that is speedily set up? It is, hence, very apparent how rapidly morbid elements and deposits must be absorbed and thrown out; unhealthy tissue substituted by sound structure; and weakness of function and of frame replaced by strength. To this view of the subject, how strong is the testimony borne by the abundant deposits of fœtid or glutinous débris, often left on the sheets and bandages!

68. It is rational to suppose, that many of the phenomena of disease are the mere efforts of elimination; or the constitutional disturbance of a fermenting process, that from a small diseased point (as in the case of the virus of small-pox, cow-pox, syphilis, or in effluvia or miasmata absorbed by the pulmonary surface) taints the whole system with its poisonous leaven. On this hypothesis, which many facts countenance—none disprove—it should be the aim of treatment to

facilitate excretion, to induce new changes, to separate and throw out morbid elements or effete materials, and to replace them by healthy nutriment.

69. What are the most trustworthy drugs? Those, precisely, whose action on the excretories is the most certain and decisive. We challenge the most strenuous advocate of drug-medication to adduce a single instance of a disease being cured by any chemical agency of drugs—any combinations of a remedy with diseased elements. True, uric acid can be carried out of the system chemically; so can the phosphatic and other deposits: acid in the stomach may be so neutralised. But this is the treatment of mere symptoms—the mere effects of disease. Will the remedies in question correct the morbid disposition that causes these effects? As soon expect purgatives to restore healthy action of the bowels, or diuretics healthy secretion from the kidneys. To be able to tap a dropsical patient is but a small matter of boast, and a petty triumph of art, if we cannot prevent the accumulation of water!

70. How does antimony cure pneumonia, or bronchitis; or mercury pleurisy or peritonitis? Is it by their specific action—by any occult quali-

ties—by any indescribable combination with morbid elements, as benzoin combines with uric acid in the system? Surely not! Or is it by way of derivation—determining a strong, where there was a weak, organic activity—opening up nature's own drains—quelling a revolt, and ejecting the malcontents, by quickening the absorbent and eliminating functions? Is the vomiting and purging, or the determination to the skin, which are one or all the primary effects of antimony, for nothing in the cure of an inflammation of the lungs. Broussais, at least, did not think so; and he was no shallow observer.

71. Whether these speculations point to truth or error, we believe it is the case with all right-minded practitioners, that, in proportion as they gain experience, they put less confidence in vaunted specifics, and become more disposed to imitate, in their curative effects, the salutary processes of Nature.

CHAPTER III.

LIFE, HEALTH, AND DISEASE.

"It would be unwise not to examine into a system (speaking of the Water Cure) which shocks our prejudices rather than runs counter to HISTORICAL FACTS AND PHILOSOPHICAL REASONING."
—DR. JAMES JOHNSON.

"Mechanical and unscientific as the idea may appear, I confess I am disposed to attribute a considerable effect of the Water-Cure, to the complete removal of all the offensive matter which had polluted the vessels; thus thoroughly rinsing them out, and leaving them in a clear state to receive a supply of more healthy fluids."—DR. BOSTOCK.

72. ANIMAL LIFE, in its ultimate analysis, is nothing more or less than a continued transformation of matter—an uninterrupted decay and restoration of the body—the ceaseless operations of two opposing processes of supply and waste, of building up and taking down, of depositing new materials and removing old. This perpetual change of matter is the primary law of life. It is this which keeps all the tissues and structures of the body in a constant state of repair—ever renewing the materials of the organisation, and counteracting its wear and tear. Dead and inorganic

matter is converted into living and organised; food is changed into blood, and blood becomes solid tissue. This solid fabric having served its purpose in the economy, becomes, in its turn and piecemeal, dead and effète; is decomposed into its organic elements, and removed from the system in the shape of excretions. These worn-out materials, conveyed away in the returning circuit of the blood, impart to it a black colour and poisonous properties. The lungs, kidneys, liver, and skin, serve as emunctories, or drains, by which these noxious compounds are evacuated from the system. In the same backward current of the blood, the new materials of growth, repair, or strength, are poured in by their carriers, the lacteal system; and in the lungs, a fresh supply of oxygen is momentarily received. The blood is thus continually recruited, renovated purified, and made fit for the purposes of life.

These two grand processes of supply and waste comprise the functions of digestion, absorption, circulation, assimilation, respiration, and excretion.

73. "*The blood is the life.*" Such is the dictum of Scripture: such is the deduction of Science. The blood is the life, inasmuch as it contains, in

itself, the two grand elements by which all the changes in question are effected—by which the functions of life are maintained; namely,—1. the nutriment—the new materials for repairing the waste of the living structures; and—2. the oxygen necessary to combine with the wasted materials, and to remove them out of the system. Life, in fact, and without a metaphor, is a flame. The animal body is a furnace. The food is the fuel; the carbon thus supplied, with the oxygen absorbed by respiration, are the supporters of combustion, and the source of animal heat. There is a precise analogy, if not identity, between the combustion of oxygen in the body, and out of the body. The body is consumed, burned, wasted away, transformed by oxygen, precisely as an ignited candle, coal, or faggot. The oxygen, in both cases, combines with their carbon and hydrogen: in both cases, the same products are given out—namely, heat, carbonic acid, and the vapour of water. The oxygen of the air enters the circulation by the lungs, and is carried by the blood-globules to every part of the structure, uniting with its wasted materials, namely, hydrogen and carbon. The carbon is converted into carbonic acid, the hydrogen into the vapour of water, or

breath. These are emitted as the smoke of the living furnace. The unassimilated nitrogen of the food, together with the unburned carbon and other matters, constitute the ashes of the furnace, and fall through its gratings—are removed by the appropriate outlets. Such is animal life: such are the means by which its functions are maintained: such are the only conservative powers of the system — the true *vis medicatrix naturæ*—an embodied but invisible entity.

74. The proper performance and balance of the above functions—the maintenance of the due relative proportion between supply and waste, according as the body is adolescent, adult, or aged, constitutes HEALTH. It is the equilibrium of the conservative and destructive powers—of the vital power or affinity, on the one hand, which is perpetually depositing in the solid organism, the new materials of growth and strength—the nutritious elements of the blood; and of the destructive power of oxygen, on the other hand—its chemical affinity for the same elements of the tissues, which tend break them down, and to carry them out of the system. There is an alternate predominance of the vital and chemical affinities; the vital affinity tending to retain the elements of the body, and

the chemical affinity to decompose and remove them. When the vital affinity predominates, the elements are retained in the organism: when the vital affinity is weakened the affinity of the elements for oxygen prevails, and decomposition is the result. These transformations are effected under the influence of the nerves, and the vital principle. These agents modify the mere chemical combinations of the living solids and fluids.

75. Disease consists in the undue action of the one, or the other, of the two grand functions that are the basis of animal life—the want of balance between waste and supply, either in a part, or in the whole, of the organism;—a defect, excess, or error in the quantity or quality of the transformations in question.

76. The cause of death, in all chronic diseases, is the want of the substance, whose function is to support respiration. When the organs have lost the power of producing those substances—when they have lost the power of transforming food into that shape, in which it may, by entering into combination with the oxygen of the air, protect the system, then the substance of the organs themselves, fat, muscles, nerves, brain, membranes, are unavoidably consumed. The respiratory process

is the cause of death. The flame is extinguished, because the fuel is exhausted: the oxygen of the air has consumed it. Hence the influence of the *hunger-cure*—a scanty diet—in reducing morbid growths, or removing from the body substances incapable of assimilation.

77. The quantity of oxygen taken into the system, is the measure of the quantity of food necessary for its wants. This quantity of oxygen is determined by the extent of exercise taken—the number of respirations in a given time (the lungs being sound)—the temperature of the atmosphere—and the amount of heat given off to the surrounding medium, by cold water, cold air, or scanty clothing. A relative excess of food produces an unhealthy deposit of fat, or the excess finds an outlet through the emunctories of the system. A relative excess of oxygen over the carbon supplied by the food, produces waste of the living tissues—in short, diseases of repletion or exhaustion, respectively, are the result. In other words, an excess of food is incompatible with deficiency of inspired oxygen, that is, deficiency of exercise: an excess of oxygen, that is, of exercise, on the other hand, is incompatible with deficiency of food.

78. The capacity of the lungs to contain blood, and of blood to contain oxygen, are determinate not variable quantities. Hence the necessity of a simultaneous quickening of the circulation and respiration, to increase the amount of absorbed oxygen. This can only be done by bodily exercise.

79. The animal body parts with its heat to surrounding objects by the same laws as any other heated mass: nevertheless it always retains its uniform standard heat, however low the temperature it is placed in. From this undisputed premise, the generation of animal heat must therefore be rapid in proportion to its abstraction by cold—to the lowering of the temperature, whether momentary or permanent—of a part, or of the whole of the body. Repeated cooling of the whole, or of parts of the body, necessitates a rapid generation of heat: this necessitates a rapid transformation of the tissues; this calls forth an increased energy of the vital processes—of the *vis medicatrix naturæ*. Thus are brought about the conditions most favourable to the throwing off of diseased action—namely, an increased energy of the living functions and organism; an augmented rapidity of transformations—of vital changes of matter

within the system; the removal of old materials, and the deposition of new: an increased waste, demanding and receiving an increased supply.

80. The effect of muscular exercise, and of the abstraction of heat, in accelerating the change of matter, is accounted for by their expending proportionably the vital power. This expenditure of vital power renders the vital affinities weaker than the chemical, and hence determines the change of matter—a breaking down or decomposition of the living tissue—a combination of the oxygen with its elements—the substitution of healthy materials for unhealthy deposit—and the elimination of the latter out of the system.

81. The increased transformations of matter thus brought about—the additional heat thus generated—necessitates increased supplies of food, of fuel—the elements of the transformations, and the materials of heat. In proportion to the cold endured, to the exercise taken, the amount of inspired oxygen increases, and with it the necessity for food rich in carbon and hydrogen. By clothing and fires, the loss of heat, by cooling, diminishes; and the amount of heat to be supplied by food decreases proportionably. Hence, in such circumstances, the appetite is less urgent.

Drinking considerable quantities of cold water necessitates increased exercise, to supply, by increased respirations, the oxygen necessary to restore the heat abstracted. Hence, an increase of appetite to keep pace with the increased waste effected. If the food is supplied according to the demand thus created, there is a correspondingly augmented generation of heat and development of strength. Hence, water-treated patients soon throw off, with impunity, flannel, and abjure muffling, and, in point of bodily activity, are fit for the feats of the hardy Highlander.

82. The organic or ganglial nervous system alone supplies the blood-vessels and the secreting organs and surfaces, is intimately connected with life, controls the chemical changes of the circulating fluid, regulates the functional activity of all the viscera, and plays an equally important part in the causation and in the removal of morbid phenomena. Most, if not all, morbid agents which attack the frame, and which produce states of vital depression, primarily exert their action on this system. The impression thus made is not confined to this part of the organism, but extends, secondarily, to those parts and structures that are dependant upon the ganglial nerves for the regular

performanee of their funetions. Aeeordingly, we observe the cirenlating, the digestive, and the assimilative systems, immediately enfeebled by eauses whieh operate through the nerves of organic life. The extent and intensity of the *cause* determines the extent and intensity of the *effect*, relatively to the energy of the system at the time. Depression, disturbanee, or arrest of the vital manifestations of the prime organs of the head, chest, or abdomen, is the result.

83. Sympathy, medically speaking, is the eonsequence of the mutual relation and dependenee of aetion between the various organs of the body. This eo-partnership of the weal and woe of the eeonomy depends upon the free intertwining and eommunieation of the ramifications of the organie nervous system with eaeh other, and with those of the eerebro-spinal system. When one organ, or general system, is diseased, or even simply exeited, the functions of other organs, with which it is more or less intimately related by means of the ganglial nerves, undergo a relative degree of change.

84. Derangement or impairment of nervous power is the starting point of diseased aetion—the first link in the ehain of morbid eausation.

85. The grand functions of supply and waste—of decomposition and recomposition—are carried on by the extreme minute branches of the blood-vessels called capillaries. *Derangement of the capillary system is the second link in the chain of diseased action.* The capillaries depend for their tone (contractility) on the due supply of nervous energy distributed to them, by the ultimate filaments of the organic nerves; when this nervous energy is impaired in any way or degree, their contractile power is diminished—they admit a larger current of blood, with a slower motion. This undue distention, when existing in the veins, is called *congestion;* when in the arteries, *inflammation.* The primary and immediate consequence of this morbid state is *functional disturbance:* the secondary and remote consequence is *organic alteration.* In either case, the equilibrium between supply and waste is lost; secretions become altered, checked, or profuse; nutrition is diminished or increased in quantity, or deteriorated in quality—there is unhealthy emaciation or plethora, or morbid growth, tumours of various kinds are the result; bony matter is deposited in wrong places; vapoury exhalations are diminished to dryness or increased to fluid; one set of nerves is

morbidly sensible, another impaired in energy; and both, alike, tending to derange the functions they minister to.

86. The distinctions of ACUTE AND CHRONIC disease are the arbitrary divisions of science, but do not imply any essential difference in the ultimate nature of morbid action; nor do they, materially, alter the indications of cure, or the principles of treatment. The subsidence, more or less, of the general constitutional or sympathetic suffering, which their first attack, or reiterated exacerbations, produce, chiefly distinguishes chronic from acute diseases. The persistence, however, of unsubdued morbid action tends to destruction of the tissue or organic disease. What is termed the proximate cause of disease is in truth its pathological condition, or actual state of disease induced by a variety of causes. These early changes of structure, or primary morbid conditions, give rise to different forms of ulterior change of structure, constituting specific diseases.

87. The effort of a regenerating change in the constitution—the struggle of the vital conservative forces with diseased action—and the token of their triumph—consists, in a multitude of cases, in a return of suppressed excretions, in the setting

up of a powerful drain from the bowels, kidneys, skin, or air-tubes, or in the establishment of eruptions on the skin. This is called a CRISIS.

88. ACUTE DISEASE is often a sort of spontaneous crisis—an effort of self-protection on the part of the economy—a struggle of the conservative powers to explode and throw off the accumulating materials of mischief. This effort, accomplished imperfectly — through defect of constitutional vigour, the improper inference of art, or the want of its necessary aids—lays the foundation of severe chronic maladies.

89. It is the chronic state of disease that unassisted nature chiefly fails to cure, and wherein the means of art are applied with the best effect. The triumph here is least disputed, because the difficulty of conquest is most admitted.

90. The *indications* or *intentions* of treatment in all diseases, without exception, and the therapeutical action that is required of all remedial agents, is, according to the circumstances of the case, either to depress excessive action, or to stimulate deficient action. In the successful fulfilment of either of these objects exclusively, or of both conjointly or alternately, consists the whole ART and SCIENCE of HEALING.

91. What the physician is required to do in ACUTE DISEASES, is to remove, if possible, the local derangements—to take off the load of blood from interior congested viscera—to promote free and uniform circulation, to diminish the exalted sensibility, and to correct the undue secretions, of disordered organs—to allay the general excitement, and to repair the consequent exhaustion.

92. In CHRONIC DISEASES the object and aim of the physician is equally to redress morbid localities, and to stimulate languid constitutional action.

93. As all the vital functions are performed immediately by the organic nerves, and mediately through the capillary vessels—and as derangement of these systems is the proximate cause, or material condition, of diseased action,—to rectify this derangement, to restore their lost energy to the nerves and to the capillaries, is the final end and object of all remedial agents. All drugs and therapeutic resources whatever—infinite as they are in number and modification—are reducible, in their ultimate action, to the simple and unique object of increasing the tone of the nerves and capillaries. Their assistance is invoked either as a spur or a curb—to stimulate deficient action or to restrain excessive action. Hence they are all re-

solvable, in their ultimate analysis, into one or other of the two grand heads of STIMULANTS or SEDATIVES. All the complicated divisions and subdivisions of the Pharmacopœia, finally resolve themselves into these two classes. Physic knows not, acknowledges not, any other objects than increasing or decreasing action. When it has accomplished these ends, it has discharged its functions. The ministry of the physician has done its work. The rest is left to nature, who will soon restore the balance of waste and supply in the living economy, the general harmony and easy play of all the functions, and establish that well-being of body and mind which constitutes health.

94. The effect of STIMULANTS is to augment the vital endowments of the tissues, viz., their *sensibility* and *irritability*—to exalt organic activity—to increase the energy of the brain and nerves, of the organs of circulation, secretion, and excretion. The most beneficial stimulants are those that most powerfully excite, *without exhausting*, the nervous power. Medicinal stimulants, as alcohol, opium, &c., strongly excite, but then exhaust, nervous power, as well as vascular action. Neither are they *immediate* in their effects. *They must first be absorbed into the circulation.* The temporary

increase of power they induce is more than compensated by the corresponding exhaustion and collapse that follow: not to speak of the positively noxious materials introduced into the circulation, which go to poison the fountains of life, and gratuitously expend a deal of vital energy ere they are finally ejected from the system.

95. The stimulant action of water differs *toto cœlo* from that of alcohol or drugs—producing a permanent exaltation of the vital energies, without any subsequent collapse. It is so with the healthy stimulus of plain food, or plain black tea.

96. The effect of SEDATIVES, as bleeding, derivatives, purgatives, emetics, diuretics, diaphoretics, and evacuants of all kinds—together with the more or less prolonged application of cold—is to relieve capillary tension, to remove or reduce that general excitement of the heart and arteries, by the continuance of which local inflammation may be produced or prolonged.

97. The aid of SEDATIVES is required especially in the commencement of acute diseases, to reduce excited vascular action, and to allay excessive nervous irritation. They are technically called ANTIPHLOGISTICS—as removing the material conditions of inflammation. The *sedative* action of

cold water can be demonstrated to be the most powerful antiphlogistic. It blunts undue sensibility; it constringes the languid or engorged capillaries—compelling them to contract and urge on their contents. It thus diminishes that congestion of blood in a part, and quells that excitement of the heart and arteries, which keeps up the local mischief.

98. It is the inefficiency of drugs to accomplish these ends that increases their number, and necessitates their change—creating the constant search after new remedies, and the endless modification of old ones. If any single drug or remedy could be produced, at once easy of access and simple of control, and which should safely and efficiently bring about these two grand objects of *stimulation* and *sedation*, either singly or combined, according to the necessities of the case—then a valid substitute would be found to supersede the exhaustless and oft-poisonous compounds of the pharmacopœia.

99. The "WATER-DOCTOR" professes to have found this—the object so long and vainly sought after—*the grand desideratum of medical art and science*—a remedy easy to procure, and safe to administer; which may be so handled, as, unerringly, to bring about every degree of stimulation or sedation in the treatment of disease.

Beyond all controversy, pure cold water makes good its pretensions in this respect. According to the mode and dose of its administration, its action is pre-eminently sedative or stimulant. No single medicine, or combination of medicines can at all compete with it, either in promptitude, power, certainty, or safety of action. It is no mean merit of the Water Cure, that, in the combined attributes of POWER and SIMPLICITY, it seems to be a direct gift and revelation of Deity to man—taking its place amongst those natural agents, or laws, by which the Supreme Being achieves the mightiest results of His wonder-working arm.

100. The curability of disease depends upon the latent stamina or strength of constitution, relatively to the nature and extent of the functional disturbance or organic alteration; taking it as an indispensable condition, that the original causes of the malady cease to operate; for until the primary disturbing causes are removed, no curative result can take place.

101. An accurate knowledge of the physiological action of cold water, in its varied applications, — with the ability, to modify skilfully these applications according to individual peculiarities of constitution and disease—a practical acquaintwith Pathology, in addition to experience in the

scientific modes of examination and diagnosis—with that intuitive power of medical observation, which is the prerogative of genius, and which learning fails to confer—these are the prime requisites necessary to constitute the safe and scientific treatment of disease by Cold Water.

102. The largest and ablest medical practice has proved that free air, plain diet, graduated exercise, early hours, and simple habits, are the means, in addition to cold water internally and externally, which best maintain the body in a state of health, which most exalt the energies of the nervous system, and most aid the natural conservative powers, the *vis medicatrix naturæ*, in throwing off Chronic Disease.

103. The relative success of treatment will depend, *cæteris paribus*, on the natural advantages of locality, and the extent to which all the hygeienic influences requisite are most systematically enforced. Defects in any of the requisite conditions will proportionately mar the success of the measures. The power of genius, and the skilful employment of the subsidiary aids, may, to a certain extent, compensate the disadvantages of locality; as a skilful artisan, with inferior tools, can rival the productions of the less skilful with better implements.

104. The danger of treatment by water, as by drugs, depends on its administration by incompetent persons, who have never studied the actions of the living organism in health and disease, and who are equally unacquainted with the varied physiological action of water, according to the manner of its application.

105. The refinements of high civilization are the most prolific sources of disease. The excitement and oppression produced by sophisticated meats and drinks—the universal partiality for drug relief—the studious and excessive use of artificial precautions against the "intemperies" of climate—the thousand nameless causes of envy, jealousy, mortification, and disappointments in the easy classes, with the mental tumults, cares, distractions, and bodily harass of the struggling classes, exhaust, by little and little, the energy of the nervous system, induce a whole host of nondescript disorders of function, and diminish the power of organic reaction when stricken down by acute maladies; in every way making countless multitudes fall victims to disease, long before their sun has measured half its heaven.

106. The "*mens sana in corpore sano,*" in its fullest sense, is the true "*summum bonum*"—the

acme of mortal felicity. A life led agreeably to nature—the due sway and exercise of the intellect — the cultivation of pure affections — the control of the imagination, and the discipline of the passions — magnanimity in misfortune, and moderation in prosperity — a mind regulated by the precepts and promises of revealed truth; steering clear of the extremes of infidelity, fanaticism, and superstition; more anxious to obey commands than to entertain dogmas — hopes dwelling on the bright scenes of futurity, and fears only deterring from acts that would blast them—in such principles and such conduct are found the only elements of content and peace on earth, and the surest means of maintaining health and prolonging life.

107. The cause of total abstinence from intoxicating drinks, and the Water Cure, contain such seeds of moral principle and social regeneration, as render them not only the handmaids of science, and humanity, but the allies of religion. The pure habits, simple tastes, and natural feelings they develop, are the shadows cast before of coming events—the harbingers of long-expected and long-predicted social and political changes which are to meliorate the destinies of the globe.

The aspect of modern times, and the movements of long-dormant communities, point to an epoch, not far distant, of regeneration for the earth, and freedom—mental, moral, and corporeal—for her sons.

CHAPTER IV.

THE PHYSIOLOGICAL ACTION OF WATER.—THERAPEUTICAL PRINCIPLES DEDUCED THEREFROM.

"It may sound oddly, but it is true in many cases, to say, that if men had learned less, their way to knowledge would be shorter and easier. It is indeed shorter and easier to proceed from ignorance to knowledge, than from error. They who are in the last must *unlearn* before they can learn to any good purpose; and the first part of this double work is not, in many respects, the least difficult; for which reason it is seldom undertaken."—BOLINGBROKE.

"Surely every medicine is an innovation, and he that will not apply new remedies must expect new evils, for time is the greatest innovator; and if time, of course, alters things to the worse, and wisdom and counsel shall not alter them to the better, what shall be the end?"—BACON.

108. EVERYWHERE within reach, and presented by nature in the greatest purity and profusion COLD WATER was, probably, the first remedy which

unsophisticated man opposed to the injuries and ailments to which his physical frame was liable. To wash his wounds in the limpid stream; to allay the pain and to abate the heat of bruises and inflammation by immersion in its cold medium, would be the dictate of the earliest experience, and the first essay in the art of healing; for ages, perhaps, his only resource. The progress of civilization, doubtless, led to its disuse; because it is in the nature of refinement and luxury to engender repugnance to what is simple and natural; and, in proportion, as the progress of science and the extension of commerce opened up the riches of the three kingdoms of nature to eke out the resources of medicine, and to create artificial wants, simple water fell into discredit. Hence, probably, those who retained the knowledge of its virtues, were obliged, by a very ancient *ruse*, to have recourse to the powerful aid of superstition, to recommend what, without it, would neither have inspired confidence nor overcome opposition. As Numa, by exacting obedience to the benign laws and institutions of the goddess Egeria, swayed by art, an army and a senate whom he could not have governed by force!

109. But if cold water be a therapeutical agent

so active, so salutary, so extensively applicable, and so easily manageable, as is alleged, then it becomes an inquiry of the highest practical importance to determine accurately its doses of administration, its modes of action, and the conditions of the system which demand or forbid its use. For a remedy that, if properly employed, is powerful to benefit, must, if mal-administered, be equally powerful to injure. In the treatment of multiform diseases by so simple and unique an agent as water, such fixed principles of practice must be established as can alone guide to a judicious selection of cases, and apportionment of processes. In this way only, will the means of art not be defamed, nor the confidence of man be misplaced. Hazardous, unreflecting, and empirical practice has already done much to discredit a good cause, and to put weapons of offence, at least, into the hands of enemies who are neither backward nor unskilful to wield them. Like those of every other remedy, the virtues which water unquestionably possesses, depend on its being used *in the proper way; in the proper case; and at the proper time.* But to reject, untried and unexamined, this remedy as dangerous, or at best unnecessary or uncertain, as many do, displays

either a deplorable ignorance, or an unwarrantable scepticism. It could only be the faulty administration of Cold Water—erroneous views of the laws of its operation, and of the organism to which it is applied—which has driven it from the pale of orthodox practice, except in a few better-skilled hands.

110. Before being able to establish sound therapeutical principles for the safe and scientific employment of water in the treatment of diseases, its physiological and pathological effects must first be ascertained—the laws of the operation of cold on the living organism attempted, at least, to be deduced; and those morbid conditions of the body then determined, which indicate or contra-indicate its various aid. This knowledge can alone enable us to employ with intelligence and success the varied powers of water, to appreciate its diversified grades of action, and to multiply our curative resources, in knowing how to fulfil, with one unique agent, a multitude of indications.

111. *Physiological and pathological effects of the cold bath.*—In the outset of this inquiry it is necessary to premise, that hot and cold are merely relative terms. Individual susceptibility or sensation is the only true physiological criterion of

hot or cold. The gradations of the the thermometer are false guides. The distinctions of cold, cool, tepid, warm, hot, as applied to baths, afford no accurate data for the calculation of their effects: what is cold for one person is tepid for another, or for the same person under altered circumstances, of bodily temperature or temperament: what is hot for one is only tepid for another.

112. We now inquire into the effects of water at that temperature that produces the absolute sensation of cold, or what is usually understood by shock. The sudden application of this degree of cold to the surface of the body determines an instantaneous change—a vivid impression on the nervous centres: probably the most powerful and momentarily-perturbative physical sensation that can be experienced; superficial heat is abstracted; the capillary vessels, glandular orifices, and minute arteries and veins of the surface are constringed; exhalation is suspended. If the immersion be but momentary, the blood is not driven into the interior organs, and no accumulation or congestion takes place: the constriction of the superficial vessels is shared by those deeper-seated. But, if the bath be prolonged for a few minutes, the blood is repelled from the surface, and accumulates in

the larger vessels of the interior; the skin shrinks and becomes pale. The results of these changes effected in the system are a keen sensation of cold, shivering, trembling of the limbs; uneasy weight of chest; difficult, incomplete, and gasping respiration; the pulse is diminished in frequency and force; and the animal temperature is lowered by a few degrees. Up to this point, all the organic functions are temporarily depressed; the duration and intensity of this depression are in relation to the severity of the cold and prolongation of the contact, the power of generating animal heat, the constitution, predisposition, temperament, and habits of the individual.

113. This first series of phenomena is now succeeded by those of reaction. The shock and unpleasant sensations subside by degrees, and give place to others of an agreeable nature — to a general glow of heat which pervades the whole frame; the blood returns to the surface; the skin reddens and dilates; the circulation is more energetic; respiration is easy; the animal temperature elevated; the exhalation free; increased nervous power is elaborated; every organic tissue shares the impression; the entire system becomes preternaturally excited; all the functions are exalted;

the whole body is buoyant with recruited energies; and the mind and spirits partake of the general exhilaration. This energetic reaction takes place in the water, only in the case of the more vigorous subjects, and when muscular exercise is used; in the feebler, it takes place only after a very transitory contact. In all cases, if the immersion be unduly prolonged, the feeling of warmth and vigour more slowly or rapidly decreases; chattering of the teeth, convulsion, trembling, numbness of the extremities, languor, and exhaustion ensue; secretion is suspended; the pulse flags; the features sharpen; the eyes sink; the nose and cheek-bones point; the fingers and toes become bloodless and shrunk; painful constriction of the head and chest occur; the senses fail; the mind is stupified; delirium or convulsions ensue; the limbs become rigid; and the individual sinks into the sleep of death, unless relief be at hand.

114. The intensity of these phenomena, and the struggles of the circulation to counteract an influence which rapidly exhausts the vital principle, are in relation to the mental and physical energies of the subject, the severity of the cold, and the duration of the contact.

115. In patients rescued from this state, and in

those wherein the prolonged cold state of ague, or the collapse of cholera, has produced severe internal congestions, the reaction, when it supervenes, is proportionably intense—is morbid—is a veritable fever.

116. Individuals who habituate themselves to the use of the cold bath, by degrees are obliged to increase the length of the immersion or the severity of the cold, before reaction ensues; but, when it does occur, it is stronger and more permanent. The rationale of these effects, and the therapeutical applications they admit of, come afterwards.

117. *Effects of the Tepid or Warm Bath*:—water or vapour of a sufficiently high temperature to produce a comfortable sensation of warmth on the surface. Its thermometrical range may be from 86° to 96°: that of the vapour higher. The best description of the effects of this bath is conveyed to the mind, by saying that it is a general fomentation or poultice: what a local poultice is to a fretted sore, or to a bruised or broken limb, this is to the entire system. Its effects are relative to the heat of the body placed in it: when the heat is excessive, it soothes and lowers temperature, without much, if any, subsequent re-

action. It carries off the heat faster than it is produced in weak or diseased bodies. When prolonged in such persons, it reduces the vital powers to the lowest ebb.

118. The soothing luxury of the warm bath is pre-eminently appreciated by the wearied body or fagged mind. The pulse and respiration are gradually quickened at first; yet, by-and-bye the effect is pleasingly sedative. The agreeable warmth diffused over the surface gradually penetrates to the interior; the skin softens and relaxes; its fluids expand; the superficial capillaries are excited to increased action: exhalation and absorption are augmented; the blood is derived—determined to the surface from internal parts; congestions or accumulations are relieved; the circulation is equalised in the central and extreme parts; the frequency and fulness of the pulse are subdued; the action of the heart is calm; nervous irritation is soothed; the whole system is refreshed, relaxed, and expanded; fatigue is removed; fret, care, and trouble are chased away; and the individual feels disposed for, or falls into, a placid sleep.

119. In proportion as the temperature of the bath is increased above the due point of calm and

comfort, it becomes an exciting and disturbing agent. The skin becomes red, swollen, and stimulated; the heart and carotid arteries beat with violence; the face is turgid; the eyes injected; the respiration is frequent and difficult; the copious flow of perspiration affords some relief; but, if the subject be at all disposed to cerebral congestion, he may have an apoplectic fit; longer endurance of the bath becomes impossible. On coming out, the individual feels faint and exhausted; he can hardly stand; there is a violent beating of the carotid arteries, and noise in ears; the pulse remains excited for some hours afterwards; and the sweat flows abundantly.

120. *Partial Baths.* Water applied only to parts of the body, as half-baths, hip-baths, head-baths, hand-baths, foot-baths, &c., produce the same effects on the respective parts of the body as the general baths do on the entire surface—are used with the same objects—and are, besides, specially calculated to exercise a derivative or counter-stimulant action.

121. *The Douche.* The effects of cold water upon the body are modified by its falling from a height, and in an unbroken column, as by the mode in question. To the effects of cold water, as ordinarily ap-

plied, it adds an extra element of power: namely, the weight and momentum of the stream. The effect of this is a forcible compression of the capillary vessels and superficial tissues of the parts whereon it plays. The continuous change of the water applied makes it a powerful abstracter of heat. If taken during a vigorous state of the circulation and vital powers, and but of short duration relatively, it induces a very energetic determination to the surface, or reaction. The cutaneous circulation is intensely excited: and nervous and muscular power are greatly developed. The action of the heart, however, is, more or less, disturbed; palpitation, fluttering, and nervous tremor are felt, even by the strong, during the operation; this is from the force of the stroke (if the column be of the usual thickness, and the fall from sixteen to twenty feet), the shock, and the profuse abstraction of heat. When unduly continued, its intensely refrigerant and disturbing power makes it a morbid agent difficult to cope with. Even in the vigorous, unless followed by active exercise to maintain the re-action it produces, it determines internal congestions, and all the disastrous effects of an over-chill. Under its proper use, long-standing tumours are rapidly absorbed: muscular

contractions give way; stiff and useless joints (where there is no ankylosis) recover: and all the superficial tissues and muscles acquire increased bulk and firmness: new energy seems communicated to the whole interior organs; and a high exhiliration of animal spirits is felt.

The following propositions are legitimate deductions from the foregoing facts, or from others of familiar observation; and develop some of the laws of the operation of water of various temperatures upon the living body, with the practical doctrines and therapeutical rules they suggest:—

122. COLD WATER EXTERNALLY APPLIED IS THE MOST POWERFUL AND SALUTARY OF STIMULANTS; for it directly and simultaneously, excites the nervous centres and extremities, creating a determination of blood to the entire surface, refilling the shrunk superficial capillaries; at the same time unloading the interior viscera, intensifying all the sensations, tonifying and bracing the entire system.

123. The diffusible stimulus of heat, alcohol,

or drugs excites for the time, but eventually exhausts, the nervous influence,—diminishing the strength of the muscles, reducing the temperature of the body, and destroying the power of organic resistance. After bathing in warm water, the body feels chilly, and grows pale. The primary turgescence of the tissues declines into relaxation. By the reaction of cold, on the other hand, the capillaries of the surface contract, the skin becomes firm, tense; the blood-globules therein are propelled with force. The blood being thus freely carried into the small exhalant vessels of the skin, its proper functions are increased, obstructions are removed, and the escape of impurities is facilitated.

124. The sudden application of cold, besides its mechanical effect of constringing the capillary vessels, exerts also a species of vital or galvanic influence on the nerves themselves, sending a vibratory thrill through every part of the system. Hence its rousing effect in cases of langour, stupor, &c. Nervous power and muscular energy are suddenly augmented over the whole animal economy.

125. The effects of bathing, affusions, or fomentations, are principally, and,—where there are no

obvious medicinal ingredients,—exclusively, owing to temperature.

126. The sensation produced by cold, that is, the abstraction of heat, is relative, not absolute. It is in direct proportion to the difference of temperature between the heat of the body, or of the part in contact, and that of the bath or medium of contact; and modified by the vigour of the constitution, the temperament, morbid tendencies, and habits of the individual.

127. Every change of temperature gives a sensation of cold or heat, according as it is lower or higher than the previous temperature to which the part acted on has been exposed. The duration of this impression, however, under the mean temperature of blood-heat and the freezing point (i. e. about 62° Fahr., is brief, and the sensation rapidly changes to cold. More or less above that point—in the healthy and vigorous, the sensation of cold, especially if active muscular exercise be taken, will not continue long, but change to heat.

128. The living organism is an exception to the physical law, in virtue of which all bodies placed in communication tend to equalise their temperatures. It maintains nearly a uniform standard heat in the very lowest as well as in the very highest tem-

peratnres. The functions of calorification, and perspiration, are respectively the provisions made to keep up and to keep down the heat of the body to the due point of health.

129. Animal heat is freely developed so long as the nervous energy and the circulating powers are unimpaired. It sinks with the depression of these, and rises with their exaltation.

130. The effects of the impression of cold are widely opposite, according as it is prolonged or transitory. When the operation of cold is prolonged—that is, when heat is abstracted more rapidly than it is produced, in the whole or in a part of the body—cold is a SEDATIVE. It first depresses, and, if continued, extinguishes the vital manifestations—exhausting that sensibility and irritability of the organic structures, which is the exclusive endowment of life; and the condition indispensable to the healthy performance of their functions. The intrinsic operation of cold, therefore is sedative.

131. The sedative power of cold is primarily exerted on the nervous centres. It blunts sensibility; and, by diminishing the afflux of blood to the part whereon it acts, by constringing its capillaries, and making them propel onwards their

contents, it takes off the vascular tension that keeps up nervous irritation. It thus removes, or prevents from accumulating, the first material conditions and elements of inflammation. No other known means effect this so efficaciously or so promptly. Cold, therefore, by the justest title, establishes its claim as the best ANTIPHLOGISTIC.

132. The sedative effect of cold is in direct proportion to the inability to generate animal heat, the lowness of the temperature, and the duration of the exposure.

133. When the application of cold is transient or brief, it is a STIMULANT. It augments the sensibility and irritability of the tissues; exalting the vital principle; developing organic activity; increasing nervous power and vascular action. This stimulant effect is an indirect result of the operation of cold; and is the exclusive effort of the conservative powers of the economy to repel an invading foe—a principle whose unchecked action is destructive to life. This counteractive organic effort is called Reaction.

134. Reaction is, *cæteris paribus*, in direct proportion to the coldness of the water, the suddenness and duration of the immersion, the vigour of

the circulation, and the heat of the surface and extremities at the moment of contact.

135. The excitement or increased action produced by drugs is a premature and factitious using up of the energies of the frame, at too great an expenditure of its vital endowments—irritability and sensibility; a proportionate langour and exhaustion, or collapse, always follows. The stimulus of water produces a permanent exaltation of the vital energies, without any subsequent collapse.

136. Much, if not most, of the benefit of the stimulant power of water lies in the shock of its sudden application—the instantaneous and vivid impression made on the nervous centres by the change effected on so large a surface as that of the body—and the energies of the entire organism which are thus aroused.

137. By the free contact of the skin with air and water, its functions are not only exalted to the highest pitch, but it is hardened—rendered unimpressionable to the sudden alternations of heat or cold, preserving an equal temperature in all seasons and climates. Those who perspire the most profusely by heat or exercise, are the soonest

chilled by cold. In either case, the cause lies in relaxation of the vessels, which permits them to pour out copious streams of perspiration in summer, and to maintain a languid circulation in winter. It is well known that the weakest horses sweat soonest.

138. What has been styled the REFLEX, EXCITO-MOTORY, or SPINAL SYSTEM of NERVES, is the medium of this impression, and the route along which the increased energy of the nervous centres diffuses itself in increased contraction of the muscular fibres. Hence cold, applied to the head or spine, equally lulls morbid sensibility, or arrests a hæmorrhage, in a distant part, as when applied to the seat of the affection. Hence the power of strong nervous impressions in syncope and asphyxia, whether applied at the nervous centres or the extremities. The actions denominated sympathetic are referred distinctly and exclusively to the spinal marrow. Grey nervous matter, wherever situated, elaborates nervous energy. The ganglia (centres of grey matter and sources of power, form a beautifully-connected chain throughout the body, subservient to excito-motory action. The spinal marrow is but a chain of ganglia.

139. If the impression be momentary or brief, and the vital powers not previously sunk too low, the heart and large vessels react on the severe constriction that, for an instant, paralyzes their functions; an increased vigour of circulation, and development of animal heat and power, ensue. But if the immersion be a little more prolonged, this constriction increases to congestion: the blood repelled from the surface, accumulates in the larger vessels of the interior; and the circulation is weakened. Reaction is more slow to ensue; but it is stronger and more permanent. In proportion as the impression of cold is continued beyond this point, that is, when it is too great and too prolonged relatively to the constitutional powers, the internal congestions augment; ineffectual struggles at reaction ensue, ending in exhaustion, torpidity and death. The sinuses of the brain, and the large veins and viscera of the chest and abdomen, are found gorged.

140. The function of calorification—the power of generating animal heat,—is increased by the stimulant action of cold. In proportion as cold bathing is persevered in, the temperature that availed to produce reaction at first, by degrees fails to do so. To produce reaction, it is necessary

either to prolong the immersion or to increase the cold. But the reaction is more intense in measure, and longer in duration. This is a manifest proof of the increase of constitutional vigour.

141. The immediate effect of reaction is a more uniform and equable distribution of the blood, by the vigorous effort of the heart and great vessels, to restore the equilibrium of the fluids repelled from the surface. The circulation throughout the whole capillary system of the superficial tissues, as well as of the interior viscera, is increased. The consecutive result is the augmented development of animal heat; the more healthy condition, if not the entire re-establishment, of the functions of secretion, excretion, digestion, circulation, and respiration. The organic activity of the whole system is exalted; every tissue feels the healthful impulse. The susceptibility to morbid impressions is diminished; and the susceptibility to healthful sensations is increased. Muscular flesh and strength are remarkably developed. In this way, in the course of time, the entire temperament of the individual is changed, and the constitution renovated.

142. The chemical constituents of the water plainly affect its power of re-action. Experience

proves that bathing in sea water, or sponging with water in which rock salt or a strong acid, as the nitro-muriatic or pyroligneous, is dissolved, is much more stimulant.

143. When the surface of the body is warm, even over-heated and freely perspiring, when vascular action and nervous power are at their maximum, the stimulant effect of the cold bath is doubly invigorating. Perspiration is not only checked with impunity, but gives rise to the more salutary reaction. But when the body is exhausted by continuous labour, by excessive perspirations or evacuations of any kind, then the vital energies are too much below par to bear what thus becomes the sedative action of cold. In these cases, it interrupts perspiration; exhausts the languid nervous energy; arrests the failing circulation; congests the interior viscera; and determines inflammation of the lungs, apoplexy, or death; at the best, fever.

144. Moderate cold (dry) is highly refreshing and bracing to those of vigorous or too rapid circulation, or who perspire easily and excessively. To those of languid circulation, or who are weakened by disease, it is chilling.

145. Combined cold and wet, only when with-

out sufficient exterior covering to prevent evaporation from the surface of the body, are injurious; producing, in another way, the effects of the prolonged immersion in the cold bath. It unduly robs the system of animal heat; and determines the same internal congestions and irritation; and their results, febrile reaction.

146. Cold, locally, is an astringent and tonic. It induces strong contractions; it diminishes the calibre of the extreme vessels: it stimulates relaxed parts. In this way, as well as by diminishing the momentum of the blood in the neighbouring parts, it restrains capillary hœmorrhage. This contractile power is not an innate effort of the organism; but a mere obedience to the physical law of the expansion of fluids and solids by heat, and their contraction by cold. In this respect, again, as in others, cold has an immense advantage over medicinal astringents, as vegetable bitters, metallic salts, ergot, &c., which contract the exhalent mouths of vessels, or the muscular fibres, in virtue of their own innate properties. Hence their action can never be certainly calculated; and their administration is never without the risk of overdoing the effect intended; and leaving behind, in one way, as much mischief as it removes in another.

147. The gradual transition from heat to cold, produces scarcely any reaction. The change is calming, soothing, and refreshing to the healthy. If the skin is hot and irritated, the same temperature of water produces the same effect as intense cold in the ordinary state of the skin. Very extreme cold produces the same effect on the living tissues as a high degree of heat,—namely, the death and disorganization of the part.

148. The effects of the immersion of the body in a moderately heated medium, as the tepid water, vapour, or wet-sheet bath (which latter is a felicitous union of the two former) are an agreeable combination of the sedative and stimulant results detailed. It at once depresses unduly excited action, and excites unduly depressed action. It is, essentially, a general fomentation or poultice. Its effects are pre-eminently soothing, anodyne, and emollient, according to the previous wants of the economy, or sensations of the individual; it removes all local irritation, pain, and general uneasiness; and recruits exhaustion. The imbibition of the fluids it permits, macerates the animal fibre, relaxes stiff joints and spasmodic contractions, softens, expands, and dilates the superficial tissues, and modifies the texture of the skin; rigid muscles

lose their tension and solidity, yet acquire plumpness. This soothing medium diminishes excessive evacuations, and restores those which are suppressed. It is powerfully derivative; acting as a direct but gentle stimulus to the skin, it promotes the activity of its capillary vessels, and its exhalent and absorbent functions. The uniform expansion of the fluids it favours—and the universal and intimate penetration, by the blood, of the solid tissues of the superficial as well as the deep-seated parts it promotes—facilitates and equalizes the circulation on the surface and extremities, while it relieves internal congestions, and local determinations; thus measuring to every part its own share of the vital current; and apportioning the fulness and force of the circulation in organs to the size of their vessels, and the necessities of their function. It fulfils at once, and in every part of the economy, every possible indication that can be demanded in ordinary cases. While it abstracts the morbid heat of those who burn, it increases, by accumulation, the heat of those who shiver. Its action on the skin makes it a diaphoretic—a powerful drain of viscid, fetid, and morbid humours, and uncombined or decomposed elements and debris, lodging in the system, and poisoning the fountains of

health. Its action on the kidneys makes it a diuretic; on muscular fibre, an antispasmodic; on the nervous system, an anodyne. It diminishes the excessive vascular plethora and secretions of the intestinal canal, and of its associated glands, which produce diarrhœa; and, in opposite cases, it rouses the defective nervous power which presides over the peristaltic movements.

149. The specific heat of the body—its capacity for caloric—is increased in febrile and inflammatory affections. In the intensest cases, the thermometer points but a very few degrees higher than the natural standard. Yet the energy with which the heat is reproduced, and the frequency of immersion, affusion, or wet-sheet application, necessary to subdue it, compared with the effect of the same processes upon the most vigorous subject in health, demonstrate this accumulation. The amount of fuel spent in a short time—the increased consumption of the frame—proves how far the change of matter—the process of eramacausis—had gone, and how much extra heat had been liberated, but not indicated, by the thermometer.

150. At low degrees of temperature, according to the experiments of Dr. Edwards, absorption in

the bath exceeds transudation. The phenomena of the cold hip-bath seem to furnish evidence in favour of this position. The increase of urine in this case, however, does not afford a legitimate inference in favour of absorption; for such increase of the secretion of the kidney may be but a compensating effort of the economy for the suppressed perspiration of the submerged surface. However this may be, this department of inquiry needs further investigation. Nevertheless, it is consistent with *à priori* reasoning to infer that the constrictive effect of a cold medium on the superficial capillaries, will tend to prevent exhalation as much as it favours absorption. The extensive mechanical compression of the surface by so dense a medium as cold water, tends to strengthen this inference. It will, probably, be found, that the amount of exudation from the skin is in proportion to the rarity and relative heat of the medium in which the body is placed. This is reasonable to suppose, from the greater accumulation of fluids in the cutaneous and superficial tissues which it favours. On this account, the vapour bath, or wet-sheet bath, is more derivative, more diaphoretic—perhaps less stimulant than, and equally soothing with, the warm bath.

Does not this increased transudation, in the rarer medium, account for the well-attested superiority of the vapour to the warm water bath, in cases of gout and rheumatism, wherein certain morbid materials are eliminated from the system? At all events, the results of the wet-sheet application—its thick, glairy, and fetid deposits—afford the best evidence yet adduced in favour of the position assumed.

151. The Douche is the most energetic mode of developing the stimulant action of cold water. Properly taken, it induces the most intense reaction—highly exciting the cutaneous tissues and vessels. In this way, it simultaneously exalts both the absorbent and the excernent function of the superficial capillaries; the languid circulation round an indolent tumour, for example, is stimulated; and the increased activity of the absorbents removes the deposit, which their defective energy permitted. On the other hand, the excessive stimulation of the same vessels and tissues, by the frequent and strong reactions brought about by this, and the other processes of the Water Cure, develops or degenerates into a morbid activity of certain portions, which, however, is fraught with the most fortunate results in obstinate chronic

maladies. The boils and other eruptions which are thus produced (and which can be produced in the healthy by the same process) are the most beneficial of all counter-irritants. That they act as drains, and, by the elimination of morbid elements, is a gratuitous and improbable hypothesis. This explanation, which it was very natural for Preisnitz to hit upon, well enough answers the purpose of water-curers, and satisfies the water-cured. But strict science forbids us to adopt an unproved and far-fetched theory, when we have an adequate physiological *rationale* before our eyes.

152. The more fever and general disturbance these critical eruptions introduce, the greater the consequent benefit. The entirely new, powerful, and perturbative action, thus established in the economy, has a highly revulsive effect on distant organs, and operates to arrest and remove the habitual morbid action of other quarters. In this way, chronic diseases become converted into acute, and often pass off with the termination of the latter. This confirms the experience of the older physicians, who were, perhaps, more accurate observers than the heated partizans of modern pathological theories.

153. This revulsive effect of an intercurrent malady, or morbid action, is strikingly illustrated in other cases. A patient, for example, in the last stage of consumption, with large portions of a lung, or both lungs, hollowed out with tubercular excavations, and just about to step into the grave, is seized with, what is called, brain fever; on its reduction, the lung symptoms are found to have subsided, and give no more trouble: cicatrization is rapid, and a miraculous recovery takes place.*

* In the way of elimination of morbid materials, boils and eruptions on the skin would only be an obstruction of its functions—would baffle nature's own ends. In the sound state of the skin, how powerful an elimination of morbid elements takes place, may be inferred from the fetid odour and colour of the body bandages in many cases, as well as from the deposits of of the wet sheet. But that the *materies morbi* should be extracted from the system, by the round-about and costly process of the formation of pus, is contrary to all analogy, and to the direct and simple modes nature takes in accomplishing her ends. The morbid elements, of whose existence in the system we have any proof, are eliminated *per vias naturales*, as through the pores of the skin, the kidneys, bowels, or lungs, in the active exercise of their functions. The formation of a bubo does not eliminate the virus of syphilis; nor do the ulterior eruptions, psoriasis, &c., rupia, ecthyma, or nodes. But this they should do, to reason consistently with the theory in question. It argues but an inadequate appreciation of the laws and resources of nature, to call into operation a painful supplementary drain, when the outlets above-named remain as her standard emunctories.

"Nec Deus intersit, nisi dignus vindice nodus
"Inciderit."

154. Simple water is better than any poultice; as being more easily absorbed; as less apt to be changed in its properties; as less heavy; as less expensive; having only the disadvantage of needing renewal more frequently.

155. Hot water is essentially a stimulant, but a disturber of physiological action. It increases vascular erithism and nervous irritation. Hence it induces suppuration.

156. The effects of water used internally, as drink, and in lavements and injections, are to be discussed in another place. On this head we quote one of the most distinguished of modern philosophers:—

The eruption of small-pox, if it be not a counter-irritant, is the only known morbid elimination of the kind; but its course and characters are so much *sui generis*, as to have no other analogies in nature.

Acting as this poison does, in the way of leaven, from a small point leavening the whole mass of the blood, such a forced elimination of the *materies morbi* may be the only outlet for what the other emunctories might be unable to discharge. The eruptions of measles, scarlatina, are counter-irritant in their action; but not an elimination. The uric acid evacuated by the kidneys in a fit of the gout is an elimination, not a counter-irritation. The profuse expectoration that terminates a fit of spasmodic asthma, is neither the one nor the other, but the result of an altered action of the vessels of the pulmonary mucous lining; the opening of their exhalent mouths on the spasm yielding, or fit subsiding, relieving their previous congestion.

"Water constitutes a most important part of the food of man, as well as of all animals and vegetables. Even of the solid food which we eat, water constitutes not less than four-fifths. It may be said, without exaggeration, that nine-tenths of the whole of our food is nothing else than pure water. Such being the case, it is needless to remark, that water must constitute a very important article of food, and that, therefore, the proper use of it is requisite for the maintenance of health.

"There is another circumstance which may contribute to the value of water when taken into the stomach; and that is, the property which it has of diluting those articles which are of too stimulating a nature, and which, on that account, when taken by themselves, are apt to injure the tone of the stomach, by urging it to over-exertion—for it is a well-known property of living bodies, that all over-exertion, all undue action, is followed by a corresponding languor and debility. Many individuals are accustomed to indulge in too great a quantity of food; and, in order to enable their stomachs to digest it, they mix it with wine or spirits, or some equally stimulating substances. These gradually exhaust the tone of the organ, and produce a state of languor, which must at last ter-

minate in disease. Dilution with water corrects th stimulating property of these substances, and renders them comparatively innocent. Hence a course of water-drinking, to those who are accustomed to live high, and indulge in wines or spirits, must frequently be attended with the most beneficial effects."—*Dr. Thomas Thompson, Cyclop. of Pract. Med., Art. Mineral Waters.*

GENERAL THERAPEUTICAL RULES

FOR THE SAFE AND SCIENTIFIC EMPLOYMENT OF COLD WATER.

157. No counsels for the treatment of disease by Cold Water any more than by drugs, can be absolute or exclusive; nor can any canons comprehend every particular case and constitution. Much will depend (if the practice is to be really enlightened and rational) on the pathological knowledge, the powers of observation, and the reflective habits of the practitioner, in determining the doses and

the timing of the applications, relatively to the wants and resources of the constitution, and the nature and period of the malady.

158. The first and fundamental curative principle of the water treatment is TO DIRECT AND MODIFY THE AGENCY OF NATURE: watching and imitating carefully, her sanative operations; restraining the action that is excessive; exalting that which is depressed; or recalling into the proper channel normal efforts, perverted, or wasted by wrong direction.

159. In ACUTE DISEASES generally, the processes of nature are over active, tending to exhaust the vital endowments of the frame; and more or less rapidly to accomplish its dissolution. In many cases, after running a specific course, the disease wears itself out, and ends by resolution; in other cases, where the balance vibrates between life and death, the conservative powers of the constitution prevail in the struggle of opposing forces—previously accumulating morbific elements force an outlet, or the over activity of a peccant part ends in a change of action, and the disease terminates by a crisis. A less meddlesome practice in acute diseases is, therefore, indicated than that sanctioned by the doctrines of British schools, and of some

continental lawgivers in medicine. The province of the practitioner is here almost exclusively, but sedulously, to watch the processes of nature; to respect and to aid, not to divert her efforts: to excite the action that is too depressed, and to depress the action that is too excited.

160. In CHRONIC DISEASES, generally, the processes of nature are not active enough—the self-reparative power of the organism needs to be stimulated to action; and the impediments that shackle or nullify its efforts removed. Here, unassisted, nature is inadequate to develope that activity of the organic processes, which is necessary to overcome disease, and to restore healthy function. Here, therefore, there is greater latitude for the display of the resources, and for the exercise of the genius, of the practitioner.

161. If the leading and paramount indication in the treatment of any given disease, be in one way and in one quarter, or another, either to depress excited action, or to excite depressed action—and this will probably not be disputed—then one single remedy, capable of being graduated in its doses, so as to exercise every degree of sedation or stimulation respectively, is calculated, under favourable circumstances, to operate against the

whole host of maladies; and to supersede, or be backed against the whole list of medicines.

162. An accurate acquaintance with the peculiar properties of water; with the mode of developing these properties; and with the morbid conditions of the system, which forbid or demand recourse to them—must determine the general therapeutical principles that are to regulate the remedial employment of water.

164. To obtain the indirect, stimulant, or tonic effect of Cold Water, its application must be resorted to momentarily, and repeated frequently: the temperature must be lower or higher, relatively to the constitutional vigour of the patient: but, *cæteris paribus*, the higher the temperature of the patient and the lower that of the water, the greater is the reaction. Excessive reaction in the weak must be guarded against as much as defective reaction. The strength of the patient will determine the degree of the reaction that will be salutary, and within the limits of morbid excitation.

164. To obtain the direct and sedative operation of Cold Water, it must be employed continuously for a longer or a shorter time, until the end of its application is answered. The mode of producing this effect is all-important. Great judgment is

requisite in the employment of sedatives to reduce morbid action to the due point, and no further: also to avoid any interval or intermission in the refrigerant application, in order to prevent reaction, which would only augment the mischief to be combated.

165. The stimulant action of cold water is indicated in diseases of debility, and states of depression.

166. The sedative effect of cold water is indicated in all diseases characterized by excessive nervous irritation, and inordinate vascular action; and diseases usually attended with interrupted secretions.

167. A necessary precaution, suggested both by reasoning and experience, is, to avoid the sudden and severe applications till the patient has been prepared by undergoing the milder processes; and to abandon the treatment in the same gradual manner as it was commenced with.

168. Whenever the indication is to reduce high temperature and excessive vascular excitement, as in inflammations and fevers, the tepid bath, tepid affusions, or the wet sheet, are much more efficacious than decidedly cold water: because, on the one hand, the prolonged use of the former suffi-

ciently abstracts morbid heat, and reduces the tension and velocity of the circulating system; and on the other hand, it avoids the risk of internal congestions, and the chances of subsequent reaction, which the undue use of severe cold would determine.

169. The WET SHEET is calculated to supersede all other modes of general refrigeration; as being equally potent in effect, much more easy of control, and admitting a correcter graduation of its dose. It entirely does away with the objection as to the impossibility of determining the precise extent to which we ought to carry the sedative effect of cold. The speedy equalization of its temperature to that of the body prevents troublesome reaction, while the abstraction of the quantity of caloric necessary to vaporize the water effectually cools the surface. The pulse becomes softer and slower; the skin cool, moist, and perspirable. It removes previous headache; it recalls the failing functions of intellect; it tranquilizes the general feelings of the patient, and induces a placid sleep; no new materials of strength are imparted, yet the patient is refreshed and invigorated. An appliance of curative art, whose primary effect is to abstract a morbid heat which consumes; or to develope and

accumulate a heat that is latent, but unfelt and inoperative: whose secondary effect is, to allay a nervous irritation which exhausts; and whose combined result is, to liberate physical and mental energies which are overwhelmed—presents strong claims to the notice and trial of the Faculty, in cases at least of bad fevers and inflammations. This remedy is to be repeated as often as is the disposition of the morbid heat and action to return. When these are no longer evinced: when sedation has told: when nervous irritation and vascular excitement have been reduced to the due point—and a discriminating observer will easily decide this—then a further continuance of the application would only depress vital action so low, that recovery would be impeded instead of advanced, if not sometimes rendered impossible.

170. The previous loss of blood formerly counseled in the cases just alluded to, and then sometimes necessary, is now superseded. The indication to lessen by depletion the violence of the local affections, or the general fever, is certainly, promptly, and safely accomplished by a cooling bath, or affusions; but better far, by the wet sheet.

171. In all cases of active hœmorrhage from

the lungs, stomach, bowels, uterus, or bladder, dependence may be placed on the wet sheet alone, to keep down vascular excitement, and to quell nervous irritation. Here the sedative action of cold on the system in general, acts upon the large vessels which supply those that are bleeding. In addition to this, the local constriction by cold of the bleeding vessels, is an open or subsequent practice, and is to be determined by the judgment of the practitioner. The severity of the hœmorrhage, the strength and condition of the patient, and the amount of effect produced by the wet sheet, are the considerations which must dictate the *methodus medendi*. The uncomfortable sensation of cold or wet, in which the patient may be kept for a time, is of advantage. The more exclusively that sedation is effected without reaction, the better; as such result would only undo the object sought to be accomplished. Cold drinks, cold air, cold lavements, cold injections, cold applications to chest, abdomen, or thighs, duly guarded, will do more in the cases in question, than all drug-medication ever achieved.

172. Epistaxis (bleeding from the nose) will be immediately checked by a cold head-bath—immersion of the occiput in water; as also the intractable

bleeding from the gums, in cases of *Scurvy* and *Purpura Hæmorrhagica.*

173. The wet sheet is equally suitable in almost every case where a warm bath is indicated. It is preferable in cases of great debility and suffering. Its effects on the system are equally powerful: while its application can be made without delay, trouble, or cost; without the hazard either of exhausting or exposing the patient; and without the risk either of undue heat, or undue coldness of the bath; all which are too often grievous draw-backs in the practical administration of baths brought to the house of patients.

174. The conditions and laws of reaction, being at present better understood than before, the former contra-indications to the cold bath, save in a few instances, are now invalid and repealed. There are few cases wherein the stimulant power of cold water is indicated, that will not bear the cold bath at once: and wherein reaction may not with certainty be ensured. By the previous temperature given to the body; by its equalization over the surface and extremities; by the general fomentation of the wet sheet; by the relative coldness of the water, and briefness of the immersion—the object of stimulation may be accomplished in every

case, even in the most delicate women, children, and old men. In this way, to the most debilitated and reduced, the tonic effects of the cold bath are obtained with impunity. Hence it is a cardinal rule, never to omit to increase the temperature of persons of feeble circulation, or languid reaction, before the bath. To the same end, active exercise before the bath, and vigorous muscular movements or friction of the surface and extremities in the bath, are, if possible, not to be dispensed with. After the body has got quit of much of its superfluous or morbid humours, by the copious exudation of the wet sheet process—after the tissues have been thus macerated and fomented, and the circulation thus equalized—after vascular and nervous excitement have been thus tranquilized, and the whole system so agreeably relaxed and soothed—the tonic effect of the cold bath immediately following, may be easily conceived and accounted for. The athletic frames of northern and oriental nations, and of the ancient Romans, prove the bracing qualities of baths in effect thus taken.

175. The stimulant operation of cold, with the above precautions to ensure reaction, is indicated at once as curative and hygeinic.

1. In the entire class of nervous disorders—

hypochondriasis, chorea, hysteria, epilepsy, tetanus, trismus, hydrophobia : or cases even complicated with considerable functional or organic derangements ; marked lesions of the latter kind, however, are comparatively rare in the subjects in question.

2. In the intervals of intermittent or periodic diseases—of ague, hooping cough, and spasmodic asthma, neuralgia, gout, and rheumatism.

3. In scrofulous, lymphatic, and cachectic habits of all kinds ;—in chlorosis (anœmia), diabetes, &c.

4. In chronic inflammations of the pulmonary, and gastro-intestinal mucous membranes. The more intimate sympathy of the skin with the mucous membranes, than with the parenchymatous viscera, points out the necessity of largely addressing the cutaneous functions, in our efforts to remedy bronchitic and gastro-enteric affections. In chronic catarrh with dilated air-tubes, relaxed mucous lining, profuse, fetid, or even purulent expectoration, the cold bath properly administered as above, is the remedy *par excellence*. It is equally potent in the disorders of the digestive mucous lining, and of its associated viscera ; as well as in derangements of the alimentary

canal, not attended with inflammatory irritation.

5. In diseases of the pelvic viscera, connected with relaxation, as uterine and vesical catarrh, menorrhagia, metrorrhagia, (a very distinct affection but often confounded,) in leucorrhœa and gonorrhœa.

6. In local paralytic affections, uncomplicated with cerebral disease; as loss of power in the sphincters of bladder and anus.

Lastly. The stimulant power of Cold Water is advantageously had recourse to, to effect a revulsive action on remote organs; to dissipate local congestions; to arrest passive hœmorrhages; by determining the activity and fulness of the circulation to the superficial tissues, or to remote localities.

176. The medical world is divided in opinion as to the value of cold affusion, because its mode of operation, the indications for its use, and, therefore, the fitting circumstances of its employment, have not been accurately conceived. Hence it has been unduly neglected, although an orthodox practice. Its sedative effect—its prolonged use—need now be almost exclusively confined to the early inflammatory stages of the disease ending in

hydrocephalus—the body of the patient being fomented by the wet-sheet process. But when effusion, the result of inflammation, has taken place, and a tendency to paralysis exists, then the stimulant action of cold is indicated. After the subsidence of the violent symptoms of other acute diseases, when the patient has sunk into the same comatose state as hydrocephalus terminates in—with pale countenance, occasionally suffused with a flush, dilated pupils, strabismus, and slow pulse—the stimulant action of affusions is a remedy of high value. Under it the patient awakes from his comatose state, and cries violently. The skin becomes cool; the pulse small and frequent; a breathing moisture bedews the skin; the patient dozes quietly, and improves with every repetition of the remedy.

177. The combination, or alternate use of the stimulant and sedative powers of Cold Water, (such as is prescribed in the wet-sheet fomentation, and the cold bath after it,) is of indispensable aid in the treatment of the following forms of disease:—

1. In the various types of fever, continued, remittent, intermittent, inflammatory, eruptive, typhoid, hectic.

2. In painful inflammatory affections of the abdominal or pelvic viscera.

3. In chronic derangements of the same parts not essentially painful; indicated by indigestion, defective or excessive biliary secretion, jaundice, constipation, diarrhœa; loaded venous system, hœmorrhoids.

4. In chronic inflammations of uterus, vagina, bladder, or kidneys; in dysmenorrhea, amenorrhea, leucorrhea, uterine, and vesical catarrh.

5. In painful nervous and spasmodic affections; in neuralgia, sciatica, lumbago, gastralgia, colic, nephralgia; in stone in bladder, ureter, urethra, or gall-duct; in the convulsive diseases of infancy.

6. In persons of full habit, disposed to cerebral or pulmonary hœmorrhage, or those affected with hypertrophy, dilatations, or valvular defects of the heart and great vessels.

7. In all stages of organic diseases: in the last stages of cancer, it is the best source of relief.

8. In states of debility, which are very seldom pure diseases, but the mere symptoms of functional disturbances or organic alterations of important viscera.

9. In vitiated and depraved conditions of the blood: in relaxed, scrophulous, and leucophlegmatic habits; in cachexia, gout, rheumatism, chlorosis, diabetes.

10. In the tubercular diathesis; in the incipient stage of consumption.

11. In all the multiform genera, species, and varieties of cutaneous disease. From the modification effected on the tissues of the skin, by the softening, soothing, expanding, and macerating effects of the wet-sheet fomentation, as well as from its sympathetic action on the interior viscera, this remedy is peculiarly indicated, wherever the skin deviates from its healthy condition, either as regards its capillary circulation, or its functions as a secreting and excreting organ.

Lastly. In that stage of acute diseases marked by great exhaustion, and accumulation of the fluids in the interior organs—in the retrocession, or imperfect development of eruptive diseases—in the cold fit of ague—in the congestive forms of fever—and in the collapse of cholera—the wet-sheet fomentation will probably accomplish, as effectually, all the ends of Dr. Armstrong's hot-air bath. The bleeding sometimes advised in such cases is as bad as bleeding a person in a swoon, or during the shock of an apoplectic stroke. The powers of life are already sunk too low: the heart's action not only shares the general debility of the system, but is, moreover, oppressed by a

load of blood, which it is unable to propel. In all these cases, the sedative action of water is required, so far as it is necessary to subdue the organic irritation which is the *fons malorum:* the debility of function left is corrected by the stimulant action of the bath.

178. In the worst cases of these highly congestive forms of disease just mentioned, and in others of more rapid occurrence, as from shocks and strokes—as well as in persons asphyxiated by drowning, hanging, or poison—in these otherwise hopeless cases there are only two available resources left; but these of great power, and usually crowned with the most triumphant success. In such instances, the failure of the powers of organic life—the arrest of the circulation and respiration, and the entire suspension of nervous energy, are the evils to be combated. Sensibility and irritability are not exhausted: they are overwhelmed. I. The first thing to be attended to is, to have the patient placed in the shallow, cold, or tepid bath—the head and shoulders supported—firm, constant, and universal friction of the surface by the wetted hands, and by relays of assistants, is to be kept up for many hours. Cold is proved most favourable to the maintenance of

latent vitality: as the vital energies become resuscitated, the degree of heat must be proportioned to the amount of vitality, the same as with a frost-bitten limb. The warm bath, though often recommended, and though sanctioned by the Humane Society, is, on strictly physiological grounds, not justifiable in cases of asphyxia, till circulation and respiration begin to be restored, and till the congestions of the interior begin to give way. Then the intense reaction which by-and-bye comes on, is to be combated by the cooling processes aforesaid; for depletion is death. 2. Simultaneously with these efforts, galvanism, by means of the electro-magnetic battery, if procurable, offers an almost infallible resource. One wire should be placed over the *medulla oblongata* (the nape of the neck): the other to the stomach-pit, or to the diaphragm on each side, between the eighth and ninth ribs, reaching to its muscular fibres by means of fine needles. Theory and experience—the results of our own practice, and the recorded cases of success in that of others, justify the recommendation of this, in bad cases, as the *unica salus*.

179. The wet sheet is an invaluable hygeienic resource to the healthy:—

1. In fatigue after mental and bodily exertion; after journeys; after watchings.

2. In sedentary occupations; in seclusion and study: as well as in the activity and strife of public and professional life; and in the laborious dissipations of *haut ton.*

180. The daily use of the cold bath—or copious ablutions with cold water—by strengthening the skin and mucous membranes, and accustoming the surface to alternations of temperature, is the surest preventive of catarrhal affections, and the best hardener against atmospheric vicissitudes.

181. THE STIMULANT EFFECT OF WATER IS CONTRA-INDICATED (*i. e.*, FORBIDDEN), or to be used with great caution :—

1. In diseases of the brain or spinal cord—or in those disposed to cerebral congestion and to apoplexy. In cases of paralysis dependent on those diseases.

2. In nervous affections, which a careful diagnosis has ascertained to depend on abscesses, ulcerations (Ramollissement), tumours, or clots of blood in the brain; or a collection of fluid in its ventricles; or a similar condition of the spinal cord or its membranes. Such patients often die suddenly, after leaving a Water Establishment

as apparently cured. The physician who consults his own reputation, will take care to send off these patients with an issue in their necks—no matter what crises they may have had, and what health they now seem to have. Nowhere is a sound judgment and cautious diagnosis so highly requisite.

3. In the tendency to active hœmorrage from the lungs; or formed tubercular disease of the lungs.

4. In organic diseases of the heart—in hypertrophy of one or both ventricles—in dilatations—or valvular deficiencies.

5. In diseases of the skin, where there is much irritation of the cuticular vessels.

182. The cold, sitz, or hip-bath, with hard friction of the abdomen and loins all the time of immersion, is pre-eminently beneficial:—

1. As a revulsive remedy in acute and chronic diseases of the brain.

2. In acute inflammation of the thoracic viscera.

3. In chronic affections of the abdominal viscera—all forms of indigestion, constipation, diarrhœa.

4. In diseases of the pelvic viscera—in uterine and vesical catarrh, leucorrhœa, gonorrhœa. This bath is contra-indicated during the menstrual period. Pregnancy is not a contra-indication.

183. The tepid sitz, or hip-bath, tepid half-bath, or the wet sheet, is the best anodyne in eaneer of the womb. With hard friction, and long-continued, it is the best revulsive and restorative in the sudden inroads of alarming illness, or the shock of serious accidents—in threatening apoplectic fits, or after them.

184. The head-bath — or ice-cap —the steady and continuous abstraction of heat—is indicated in cerebral inflammation and congestions: of higher temperature, and shorter in duration, in neuralgia and certain rheumatic affections of the scalp. It not only constringes the vessels of the integuments, but it diminishes the action of the carotids, and lessens the afflux of blood to the entire head.

185. The douche, under proper advice and restrictions, may be safely taken as a general stimulant, by all patients previously using the cold bath, with benefit. Its local application is peculiarly indicated:—

1. In sprains; in all the various diseases of the joints, and their structural alterations short of ankylosis; in muscular contractions.

2. In indolent and growing superficial tumours of all kinds (not aneurismal).

3. In the advanced stage of insanity, characterised by stupor, incoherence, dementia. The douche, properly administered, will be acknowledged to be a more humane procedure than, and an equally effectual stimulant with, the deep incisions advised by some to be made along the scalp in these cases.

186. The license given by medical authorities to employ the sedative power of cold, in cases of common inflammation of the surface, and of the extremities of the body, is, without just reason, refused to internal inflammations, as of the membranes and organs included in the skull, thorax, and abdomen; from the theoretical dread, that the blood may be thrown upon interior parts, so as to aggravate the inflammation or produce congestion. This reasoning, though plausible, is fallacious; and is every day practically refuted, in inflammations of the brain and its membranes. Cold applied to the surface, not only acts as a sedative to the superficial vessels, but by-and-bye, operates equally a constriction upon the deeper seated, preventing their congestions, and hindering the impetus of the sanguineous current to them. By derivation to other quarters, and by the wet-sheet to reduce general fever, and to moderate the

violence of local symptoms, cold may be applied, with equal safety and advantage, to the chest or abdomen, in inflammations of the membranes or viscera within these cavities.

187. Partial cold baths constantly applied—as to the hands, elbows, or knees, in acute affections of the hands or feet, are of great importance, as local sedatives, to keep down permanently the morbid action of a neighbouring organ or part, whose blood-vessels it supplies. Those who attribute this practice of Priessnitz to his knowledge of revulsion, do him injustice. It indicates higher knowledge.

188. Cold water is the fluid best adapted for the drink of man. It is indispensable to the existence of organic matter—water constituting seven-eighths of the entire weight of the body. The same proportion of the solid food we eat is pure water. Being free from all irritating, corrosive, or corruptible ingredients, it does not injure the most delicate structures which it permeates or saturates. It separates, attenuates, dissolves all other substances: as such it becomes the grand vehicle of nutrition—carrying into the circulation the new materials of growth or repair; while it is, at the same time, a menstruum to dissolve and

carry off the wasted, useless, or dead particles of the frame. It confers upon the tissues that elasticity, expansion, and movement, which their functions require. Hence it is manifest how much of this bland, limpid fluid is necessary for the wants of the economy—to repair the waste constantly taking place, and to replenish all the parts that would otherwise become dry and shrunk from want of moisture. Besides this, there is every reason to believe that, in the elaborate chemistry of the living body, it is in part decomposed—its elements form new combinations; and all go to carry on the mysterious processes of life. Hence those who are dying of starvation, if they can procure water, protract existence.

189. The free drinking of cold water increases the appetite, improves digestion, braces the nerves, invigorates the muscles, hardens the entire frame, augments the animal spirits, clears the intellect, calms the passions.

190. Cold water on an empty stomach excites reaction; so that the blood is immediately determined to that organ in greater abundance, and with a more healthy circulation. The juices peculiar to it are secreted more largely. This re-action is communicated, by sympathy, to other

parts of the body; all the secretions are increased. For the same reason, absorption is more rapid. The necessary result of this state of things is a keener sensation of hunger—a greater demand for, and ability to dispose of food. The "change of matter" is more rapid; waste and supply are more equable and proportionate. The used-up particles are duly carried out of the system. The repair of waste is more perfect. In short, the body is better nourished. The free drinking of cold water sometimes incommodes beginners. But is is only a temporary inconvenience, and passes off by perseverance.

CHAPTER V.

COMPARATIVE PRETENSIONS OF DRUG AND WATER MEDICATION, IN RENDERING THE AID NATURE REQUIRES IN THE TREATMENT OF DISEASE.

191. PHILOSOPHICAL reasoning and research in physiology and pathology lead to the conclusion, that, there are no direct medicinal means for extinguishing a morbid process, or rectifying

deranged action, in the animal economy. *All that art can aim at—all that it can effect—is to put the organism into the best condition to rectify its own error of functions, or faults of structure (so far as these are remediable); i.e., by the gradual exaltation or return of healthy action in the system generally, to quench, piece-meal, a particular local disease, or to correct a constitutional taint. For this purpose, the freest scope is given to the play of the organic functions.*

192. From this undisputed premiss, an axiom of practical medicine, it is a clear conclusion that *the legitimate aim of the physician, in treating disease, is merely to aid nature.* Thus, the first *practical* maxim of the *Father of Physic* was, that *nature alone cures disease.* If it be conceded that nature cures, it must, on the other hand, be admitted that she often kills, or allows to die. *And, inasmuch as the efforts of the organic powers are often inadequate or shackled, medical art is created, and the aid of the physician invoked, to second nature —to remove the obstructions in her way, to control her powers when excessive, to stimulate them when dejective, and to recall her deviating steps into the right path.*

193. The means of art, auxilliary to the efforts

of nature in the cure of disease, have been, in all past times, the subject of acrid and endless controversy. The weapons of medical warfare, and the tactics of practice, were adjusted to the preconceived theories of the various sects and schools. What confusion, fallacy, and insufficiency must there have been, in the operations of an art, whose principles of practice were ever changing fashion with the prevalence of doctrines fundamently erroneous! How insecure the lives entrusted to it! How destructive its effects on the natural progress of disease! How little trustworthy its practitioners! Need we wonder at the mass of credulity and error which physic presents—at the vacillating and contradictory opinions of an enlightened profession.

194. In one point the various medical sects and parties coalesced, or nearly so; this was in respect of the indications of cure—the general idea to be acted on—the plan and intention to be pursued. The chief difference regarded the particular means of carrying into effect the leading idea or plan. This unavoidable discrepancy arose from the ignorance of agents suited to effect directly the desired results. Individual practitioners of less party bias, or of more original observation, patronised those

weapons of practice which accident or experiment had taught them, with more or less show of reason, to confide in.

195. The paramount error of the two predominant modern sects and systems, lies in either doing too much (as in the active or English school), or in not doing enough (as in the passive, or expectante, French, method)—allowing, in the latter case, morbid processes to run their course, without interposing necessary checks; or attempting, in the former, to extinguish diseased action by powerful drugging—alternately draining the nutrient juices, and stimulating the prostrate functions; in both cases, equally exhausting organic energy, wasting, bootlessly, the *vis insita*, destroying, in general for ever after, the constitutional stamina. To drain the body of its vital fluids—to rake the delicate internal structures by an incessant battery of powders, pills, potions, tinctures, drops, and boluses—seems to comprise, with a host of practitioners, the sum total of the healing art. This, indeed, serves to amuse the mind, and to fill up the time, of the patient, as well as to keep busy the hands of the nurse, and the shop of the apothecary. But the result of the whole is to baffle nature's operations—often to prohibit, always to postpone, recovery.

196. Another corollary from the same philosophic premiss is, that *the energy of the curative power will be just in proportion to the energy of the natural vital actions.* Now, we ask—wherein does drug medication aid nature—wherein exalt the vital powers? What, on the contrary, could be more inimical to the return of healthy action in the body—what could present a greater barrier to the cure of disease—than a mode of treatment which systematically and profusely wastes nature's resources, and must plainly, therefore, subvert her intentions? What, we ask, could put a greater impediment in the way of the curative power exerting itself, than draining the body of its most vital fluids by bleeding, evacuants, &c., and raking the delicate, sensitive interior structures with a heavy artillery of violently-acting medicines of all sorts and complications—the more poisonous and complex the better? We need not add to these sources of exhaustion the still further debilitating effects of protracted pain, uneasiness, and low diet. *With the diminution of power in the body, diminishes the resistance to morbid processes.* Hence, the tedious, uncertain, half-and-half cures by drugs, and the breaking-up of the constitution after courses of medical treatment. For just the opposite reason, *the sparing of the constitutional*

powers in the water treatment, and the free scope given them to do their own work, do we see the most speedy and permanent cures accomplished by the new system.

197. It is clear, therefore, that drug-practice is neither safe, nature-like, nor efficacious. If it aids nature, it is helping her backwards; it is going the wrong way to work; it interferes only to thwart. It not only violates nature, however, but the plainest teachings of pathological science. For example: there are three fundamental doctrines of pathology—expressions of fact, so true and so general, that they might be called LAWS of morbid action. These are—1. That disease most readily and generally begins in the viscera of ORGANIC LIFE; i. e, in the stomach, liver, bowels, heart, and lungs; and is thence propagated to the organs of ANIMAL LIFE, i. e., the brain and nervous system. 2. That no one sinks under disease till it has seriously invaded the viscera of organic and animal life. 3. That the severity of all diseases is regulated by the amount and character of these visceral implications.

198. The evident deduction from these three great laws or doctrines of pathology is this, namely, *that to save from injury, or irritation, parts so sen-*

sitive to injury, and so powerful to resent it, should be the first and paramount consideration in the treatment of disease. But what is the actual fact? How does drug-practice square with theory? Most lamentable inconsistency? The entire keeping out of view, in fact, of these salutary truths, is the crying evil, the damning error, of the system of medicine we denounce. No matter in what locality disease commences, these most delicate organs, the tender mucous lining, and sensitive abdominal nervous system, on whose integrity life and life's comfort depend—are made in every case, insanely made, the scene of hostile operations, the arena for deadly feats of drug experimentation—are pre-eminently the localities chosen to be raked by the grape-shot of the apothecary. No rest is given to the unhappy stomach, the ill-fated butt of all remedies, the scape-goat for the offences of the whole system! The result of this gratuitous tampering with man's most sentient organic textures, is morbidly to affect the centres of sensation and motion, the sources of nervous influence and vital power. What is the marvel of delirium and stupor so often occurring in the active treatment of acute diseases, and that the tumult into which the organic viscera are thrown by alternate drain-

ing and stimulation should be extended to the brain? In chronic maladies, in the same manner, this injudicious interference equally reacts on the brain, inducing numerous forms of hypochondriasis, if not positive insanity.

199. The drugging and drinking habits of modern times, probably, lay the foundation of its universal stomach ailments. Mere nervous irritation, or subacute inflammation of the stomach-lining, is, by the primary excitement of drams, drugs, and stimulant food received into it, goaded on to a higher grade of inflammation, with increased secretion. The result of this extra morbid action is, further to exhaust the vital endowments of the tissues, to superinduce, in the mucous membrane, more intractable states of disease—worst of all, lighting up fresh morbid sympathies in other organs. Curable derangement of function is thus, by degrees, converted into hopeless degeneration of structure. The simple becomes complicated. The whole fabric is shaken to its foundation, and brought prematurely to its fall: or the patient survives to drag out a life of suffering, a living death—as wretched in mind as disabled in body—the prey of gloomy terrors—haunted by phantoms of his own fancy—devoured by secret griefs—a

burden to himself and a plague to all around him. This is no imaginary portraiture, but the outlines, at least, of the fiend Dyspepsia, in the several stages of his progress under drug medication.

200. There is another great point as to the real action of drugs, on which the public, not to say the profession, need enlightening. To deny that drugs are occasionally efficacious, would be contrary to fact. This does not, however, impugn the fundamental proposition of the water-doctor, viz., *that drugs have no innate, specific, or occult property to amend faults of function, or to rectify errors of structure. Drugs only cure, inasmuch, and in so far, as they promote an extra activity of one or more of the grand excerning organs—the emunctories or drains of the system—the safety-valves of the living mechanism. The most trustworthy and renowned drugs are those, precisely, whose action on the excretories is the best ascertained, and the most decisive. The excretories referred to are the skin, bowels, and kidneys.*

201. This brings us to the very gist of the great questions at issue between the Water-doctors and Drug-doctors respectively. The whole merits of the controversy, the entire strength of the Water-Cure's pretensions, lie in the answer to two simple practical queries:—

202. 1st. Are drugs the most scientific, rational, safe, and efficacious means of curing disease? We believe we have proved, to a demonstration, that they are not—that drug medication as a general mode of treatment is insufficient, unphilosophical, injurious—opposed at once to the first principles of physiology, and to the soundest axioms of pathological science—that they ought to be superseded, and can be superseded, by better agencies.

203. 2nd. Can we bring about by water, and its adjuncts of treatment, all the changes in the animal economy which drugs, &c., are given to effect? This is the burden of proof that is laid upon us; and we shall joyfully sustain it. We, the Water-doctors, are prepared to prove, in the only way which can render this sort of proof unequivocal and decisive, viz., by the facts of actual practice, that *simple water*, used in various ways, provokes and exalts the physiological actions in question more safely, certainly, and lastingly, than drug remedies. If this be the case—and we challenge refutation of the statement—a thick veil will fall from the eyes of many. Simple water, variously applied, will be seen to produce curative results supposed, or said to belong only to the best directed pharmaceutic resources. A very slight acquaint-

ance with the curative effects of drugs, and with the operations of nature, will suffice to show—what no medical man can disprove—that medicines have no salutary physiological action which water has not.

204. Herein, we trust, is the satisfactory solution of the great mystery that puzzles, equally, the learned and the illiterate of our opponents, viz., the applicability of the Water system to all diseases curable by drugs, and to many not curable by drugs. We are told, daily, by physicians as well as laymen, that if we claimed for the Water Cure a pre-eminence of success in a few given diseases, then its merits would at once be recognised. But in their opinion, the idea of its general applicability is an absurdity; and they scruple not to call us arrant fools, enthusiasts, and madmen! Clear-sighted, charitable *confreres!* The careful reader will plainly perceive, however, that these objectors take a mere outside-glance into the system, and do not appreciate its true philosophic bearings.

205. Understand, then, the fundamental and irrefragable proposition of the Water-doctor—the basis of the most scientific and successful system of cure ever propounded to the world, namely, that *we possess no medicine, no remedial agent or*

resource, by which the functions of the animal economy are controlled with so much certainty, safety, and promptitude, as by the varied uses of water, internally as well as externally: or, in other words, that water best accomplishes all the ends of scientific medical treatment.

206. The applicability of the Water system to the treatment of all curable diseases will further be made apparent by a reference to the tactics of medical practice—the objects sought in any given case of treatment. The *indications* in the cure of disease (i. e., that which is pointed out by the nature of the case to be done for its cure) do not differ, as we have already seen, in any medical system. The difference of medical sects and systems merely relates to the means of carrying out the common objects of their common art. We shall here specify the leading aims and objects of medical treatment, and contrast the agency used thereto by the Drug-doctor and the Water-doctor respectively. We shall then leave it to the reader to determine, with which practitioner rests the superiority of the tools, the superiority of the workmanship (the results achieved), and the superiority of the science or art that dictates the rules and modes of practice.

207. The indications of cure, as laid down by the standard writers, ancient and modern, may be drawn out into a long list of trivial or superfluous particulars; because, in fulfilling one indication, we take the best means of performing another. For example:—that which best determines to the surface, will best relieve an internal congestion, and *vice versa;* that which best nourishes the system with rich and pure blood, will best invigorate the constitution, as well as best alter it; best neutralize hereditary predispositions; best correct morbid taints; all which things are laid down to be acted on, among others, in a given case. Philosophically analysed, the whole list resolves itself into two primary or leading indications, commensurate with the simplicity of diseased action, when reduced to its ultimate elements:—1. To deplete; in more accurate language, to depress excited action of the system. 2. To stimulate; in more accurate language, to excite depressed action. The indications, or intentions of treatment in all diseases without exception, and the therapeutical action required of all remedial agents, are, according to the circumstances of the case, either to depress excessive action, or to stimulate deficient action. In the successful fulfilment of either of

these objects, exclusively, or both conjointly or alternately, consists the whole art and science of healing. In the loss of balance of the circulatory and nervous systems, lies the source of disease. Hence morbid heats, or chills, malaise, pain, irritation, impoverished blood, vitiated humours, and often depraved habits, propensities, &c., are all so many symptoms, whose material causes and conditions are struck at in aiming to fulfil these two grand leading indications. These may be subsidiarily treated for the temporary and partial relief of the patient, who is hastening on to cure by radical processes. Unfortunately, Medicine too often confines her aims only to the attack of symtoms, and, therefore, degenerates into a mere palliation of suffering—leaving the *fons malorum* untouched, and failing to cure when cure is attainable. The innumerable cures of chronic, lingering maladies (asthenic) daily taking place under the Water Cure, proves how safely and successfully we rouse action in the torpid system. The cases of violent fevers and acute inflammations, attacks of rheumatism and gout, &c., quelled in a few hours or days, by the refrigerating sheet, or the revulsive perspiration, prove how well and speedily excited action is reduced. Medicine, in the former case, tries to flog up languid action by

stimulating drugs—irritating organic viscera that should be soothed; in the latter case, it reduces excited action of the system, by draining away the vital fluids, squandering the strength like a thoughtless spendthrift, and sapping the constitution. Now, if the processes of the Water Cure be proved, by the daily facts of practice, to be exactly suited to fulfil the above indications, we can see, point blank, its applicability to the treatment of all curable diseases. That this is daily proved, we justly boast. And herein consist the extraordinary remedial powers of the Water Cure, in every disordered condition of the system that is amenable to drugs. Neither is the action of our remedy vague and undetermined, as is that of drugs. Its doses, and effects, and modes of action, are accurately appreciated, and can be correctly graduated, so as to accomplish, precisely, the end desired, and no more. This is the virtue, this the praise of the Water Cure—a praise which envy cannot disallow—a virtue which sophistry cannot dispute. Thus, hydro-therapeutics is the only part of therapeutics that deserves the name of science—the only remedy that will neither disappoint the calculations of the physician, nor deceive the hopes of the patient.

208. The foundations of drug cure, are the

opinions of fallible experimenters. The foundations of the Water Cure, are the deduced laws of the physiological action of water on the human body.

209. The foundation of the Water Cure is the admitted fact, that it is the innate, self-preserving power of the living organism—the *vis medicatrix naturæ*—exerted with the least impediments from injurious agents without or within the body, that arrests the progress, and repairs the ravages of disease.

210. The Water Cure, beyond all other medical systems ever before promulgated, co-operates with the efforts of nature towards the restoration of health, freeing the economy of incumbrances, counteracting its irregularities, and expediting its functions, by means that do not lower, but, contrariwise, exalt the organic powers. No exhausting depletions are permitted. No internal irritation, by drugs, diverts the sanatory efforts of the system. The organic action, when too strong, is reduced by a *sedative*, alike potent, safe, and easily dosed; and the organic action, when too feeble is exalted by a *stimulant* at once powerful and innocuous.

211. The *processes of the Water Cure* fulfil in the

living system every indication of practical medicine. Herein lies its general applicability to the treatment of all curable diseases. Herein consist its extraordinary powers, as a remedial agent, in every disordered condition of the system amenable to drugs. The water measures are the fittest to quell inordinate action of the heart, or to stimulate its flagging energies at will—to reduce fever—abate heat—resolve spasm—allay irritation—provoke sweating—excite the kidneys—and to impart tone to the stomach and bowels. Thus, this simple element is made to accomplish all the effects of *stimulants, sedatives, antispasmodics. anodynes, diaphoretics, diuretics, tonics*—the effects of mercury, opium, antimony, arsenic, digitalis, iron, lead, copper, silver, salts, rhubarb, coloeynth, oil, *et hoc genus omne,* without disturbing the functions of the animal economy, as these must inevitably do—and without the risks of accumulation and consequent poisoning. We also realise from water the good effects of fomentation, liniments, rubefacients, blisters, and other counter-irritants or derivatives.

212. Drug-Medication leaves too little to nature, and meddles too much with her restorative efforts. The stimulus of drugs is directly

addressed to the delicate and highly-sympathising lining of the stomach and bowels; that is, to the very structure wherein the most vital operations of the economy are carried on—irritating its texture, congesting its vessels, exalting its sensibilities, and perverting its secretions. Thus, a gratuitous burden is laid upon organs already oppressed, and struggling to rid themselves of obstruction. The reiteration of this unnatural stimulus is the most likely means of converting functional disturbance into organic alteration.

213. Drug-Medication is essentially, and from its very nature, symptomatic; it chiefly addresses itself to symptoms. The Water Cure strikes at the very core of disease—aiming to alter the primary material conditions that keep it up. This aim is successful in all cases when the restorative powers are not worn out, or the organic changes not too far gone to be irretrievable. The necessary result of the drug, or symptomatic treatment of disease, is, that it stops short with the relief of symptoms, while the *fons malorum* is untouched. Hence, regarded in its best light, it is but a palliative system—deadening sensibility, or giving a truce to suffering—stopping the progress of a conflagration, but never repairing its ruin. This the powers

of nature can alone effect, and do effect, albeit thwarted and enfeebled by the blind interference of drug-empiricism.

214. The search after specifics, engendered by such mere symptomatic treatment, is as unphilosophical in theory, and as bootless in result, as the search after the *elixir vitæ*. It has only ended in stultifying the healing art and its professors. As examples of the treatment of mere names and symptoms, instead of diseased conditions themselves, we have to mention dropsy, hœmorrhages, fits, spasms, breathlessness, (asthma,) cough, nausea, indigestion, constipation, purging, cutaneous eruptions, headaches, and aches and pains of all sorts. These are all attempted to be quelled by some specific or other; and every day new specifics are sought, announced, and lauded, for these symptoms, as well by the scientific drug-practitioner as by the illiterate pretender; while the effect of this limited mole-eye view of the subject is, to absorb the attention in mere symptoms, and to neglect to look out on the more comprehensive horizon of treatment. Whence the failure to grasp and grapple with the pathological conditions of the organs, of which these symptoms are but the index—the warning voice of the

organism lifted up (to those who understand its accents) to proclaim its derangements, and to invoke the helping hand of science to restore them.

215. After all, the specific action of medicines on disease is really not known. In a given case, a routine of remedies is gone through—till, by chance, the physician stumbles on the right one, or, alas! kills his patient. Experience thus shows what is useful and what is baneful. The design is rational; the means are empirical; and not only so, but replete with danger. Drugs are not only uncertain and baneful in themselves, but doubly so, from the discrepancies of medical opinion as to their doses and effects. Hence, the dose sanctioned by one school of medicine is declared by another to be poisonous!

"Who shall decide when Doctors disagree?"

216. From the preceding observations, then, it will be manifest that the Water Cure simplifies the treatment of disease, and reduces the catalogue of remedies. It banishes from the arsenal of physic a host of deadly weapons—the lancet, the leech, and dreaded mineral and vegetable preparations, whose proper use is in the arts of life, and

which were never intended by the Author of Nature for the stomach of mortals.

217. Even when administered by the most skilful hands, drugs are not without danger—indeed, they daily prove deadly, and are, essentially, poisons. In delicate constitutions, the smallest doses produce the greatest havoc—often depositing a seed of disease that takes root and vegetates for long after.

218. In the Water Cure, on the contrary, there is no danger at all, unless by very gross mismanagement. The accidents under water treatment, even in unskilled hands, are not to be compared to the danger of bleeding, and the administration of powerful drugs by the most experienced physicians of the allopathic school.

219. No matter what a person's chronic malady may be, he cannot continue for a few weeks or months under drug-medication, without the supervention of some derangement of the stomach.

220. The *modus operandi* of drug medication is as unscientific as it is unsatisfactory. It is liable to one great objection:—Its principle is to draw out one disease by letting in another—to introduce morbid action into sound parts, in order to restore

healthy action to disordered parts—giving exit to a natural disease, by giving entrance to an artificial one. Irritable viscera are still further irritated by combinations and alternations of purgatives, emetics, sudorifics, diuretics, stimulants, sedatives, bitters, tonics, carminatives, &c. The effect of this pell-mell medication is, to throw the viscera into tumult and disorder, which extends to the brain. The passage of arsenic and antimony, of senna and salts, rhubarb and colocynth, bark and wine, croton oil and castor oil, creosote and colchicum, turpentine and vitriol, calomel and corrosive sublimate, lunar caustic and copperas, broom-tops and fox-glove, prussic acid and opium, minerals and metals, acids and alkalis, in all kinds of dose and combination, forces unusual secretions and excretions from the intestinal canal—determining an unnatural afflux of blood to its tissues, to supply which other parts are robbed. The result is, at the very best, a tedious struggle towards recovery—a slow and prolonged convalescence—and a shattered constitution for the rest of life. What else could arise from the faulty principle of Art coercing Nature—dictating her channels of relief—neglecting her indications—fettering her powers—and staking the whole

success of the case on the efficacy of fallacious and dangerous remedies.

The *modus operandi* of the Water Cure, on the other hand, is much more accordant with philosophic intentions of treatment, as well as infinitely more satisfactory in effect. Avoiding a violent local action, its aim is to exalt the healthful action of the system at large. It seeks to subdue internal irritations by securing intenser action of the surface—to take out of the body that which deranges it, by bringing into free operation its own inherent powers—summoning up all its own energies to the rescue of the organism. The minute, complex, and delicate structure of vital organs, is not tampered with by hazardous experimentation. The parts are not sacrificed to preserve the whole; nor, in order to drive disease from an old lurking place, is it necessary to establish irritation in a new and previously healthy locality. Sufficient counteractive action is set up by exalting the functions of parts that are sound. For example:—by appropriate diet, water-drinking, and exercise, the digestive and nutritive powers are highly invigorated; by daily active excitement of the skin, by fomentations, perspirations, baths of all sorts, compresses, &c., the pores are opened, and

its eliminating functions augmented, so as to throw off morbid elements lodging in the system. The whole efforts of cure, in short, are addressed to the organs of waste and supply—the skin, stomach, and bowels. Their functions being got into the most perfect condition, morbid processes are found to decline. Simultaneously with the removal of some internal complaint, an eruption often occurs on the surface, or a discharge of fluid issues from the skin, kidneys, bowels, &c. Hence the foundation of the HUMORAL PATHOLOGY—the ground for the belief that there is a true elimination—a critical evacuation either of morbid elements, or of the *effete* materials of the frame. On these phenomena the doctrine of CRISIS is based. The Water-doctor in his *methodus medendi* acts on the hints which nature thus gives—imitates the course of her crises—follows the routes she takes—and aims at the ends that she accomplishes.

222. The Water treatment of acute diseases is the most purely antiphlogistic imaginable—the medication at once most consonant to the feelings of the patient, and best befitting the pathological condition of his organs. The very instincts of a person labouring under fever, or inflammation, are

towards cold drinks and cold ablutions. But if only dipping the hands into cold water be so refreshing to a patient parched with feverish heat, how much more so must it be to have the entire body cooled by a sudden affusion of cold water, or a plunge into a cold bath? Innumerable have been the cures of violent fevers by patients plunging into cold water in their delirium. The critical sweat, so much extolled by the older physicians, is thus surely determined. Though perspiration is the most common mode of the spontaneous cure of acute diseases, yet nature is left free to select any other outlet, without the constraint, violence, and tumult that drugs impose.

In ERUPTIVE FEVERS, again, by cooling the surface, the internal irritation is diminished; for the amount of the one is the measure of the other. The eruption, in these cases and others, is but the transferred irritation of an important interior organ to the surface. The reduction of this internal irritation (which is the *fons malorum*) is further promoted by the withdrawal of all stimulating *ingesta*, whether food, drink, or drugs. The paramount excellence of the Water Cure treatment is the *pro*scription of the farrago of drugs that interferes with the natural progress of

the disorder, under the pretext of cooling, sweating, acting on the kidneys or bowels, altering the secretions, lowering the pulse, &c. Morbid secretions within are diluted or washed away by copious potations of Cold Water. Matters remaining in the bowels that might augment the irritation are removed by the same means, or by mild lavements. The principal focus of morbid action—the starting point of the malady—is appeased by fomentations. NATURE is thus aided, abetted, and led forward in the course of her sanative operations, without the drawback of those present sufferings, and future liabilities, which are the results of violent medication, or meddlesome practice.

CHAPTER VI.

COMPARISON OF THE RESOURCES OF DRUG AND WATER TREATMENT, IN THE DISEASES OF MOST COMMON OCCURRENCE.

IT now remains to pass in review, and offer a few comments on, THE GENERAL PRINCIPLES OF

TREATMENT, in the diseases of most common occurrence—those for which the aid of medicine is most resorted to. This we shall do without any reference to formal order, or nosological arrangement; first discussing acute, then chronic maladies.

INFLAMMATIONS.

224. We enter not here on the question, how far the faculty have been led away by a mere name—an "ignis fatuus" of their own minds;—how far a false theory and interpretation of the simplest morbid phenomenon—the mere symptom of the diminished action and incipient decomposition of a tissue, and which, when not traumatic, is a lesion consequent to a constitutional derangement;—we inquire not how far this error of theory has led to an error of practice, as wasteful of human life as ever the sword has been. Our present object only concerns TREATMENT.

225. We shall first speak of inflammation of the SEROUS MEMBRANES, and of the PARENCHYMATOUS (solid) VISCERA of the scull, chest, and belly. Here copious blood-letting, generally to fainting (if the patient be at all able to bear it), is the initiatory measure of treatment—the "anchor of

hope"—the "*unica salus*" of the orthodox. Other evacuants are next called to the rescue of the patient; always purgatives and diaphoretics. More acute observers have learnt to supersede even all these by an emetic—certainly a more philosophic, safe, and successful practice, if it were only for its revulsive effects, in the commencement of disease. When the strength of the complaint (at all events, the strength of the patient) has been broken by this assault of heavy artillery—to appease the tumult of the organism thus excited, and to dislodge the enemy from his remotest and secretest lurking-places, calomel and opium are given to promote rapid salivation; invoking again, if the enemy be at all refractory, bleeding, *coup sur coup*, in the heroic manner of our excellent friend, M. Bouillaud: with leeches or cupping in due dose; blisters, dressed with mercurial ointment; and *diète absolue*. This is pretty nearly the standard, and almost universal practice in modern times, in inflammation of the brain and its membranes; of the heart and lungs, and their membranes; of the liver and uterus, and their coverings; and of the peritoneal coat of the stomach and intestines.

226 Such are the intentions of treatment—

such the orthodox modes of their fulfilment. That they answer their end depends very much on the discernment and tact of the physician—the due time and circumstances at and under which they are practised—and the limits that are maintained, the

"Ultra citraque nequit consistere rectum."

As it is, it is a question, how far the mortality is the result of the treatment rather than of the disease. Those who fortunately (or unfortunately) escape death, often surviving to encounter a worse in the eternal *malaise* of a broken constitution—mutilated in a warfare for which there is the recompense neither of pension nor glory.

227. A word on blood-letting. This is an unjustifiable measure in any case—a practice that receives no sanction from the lights either of recent chemistry, physiology, or pathology. Why this haste to draw blood, in inflammations and fevers? Is an undue quantity of blood the sum and substance of inflammation or fever? Will the abstraction of blood essentially change the proportion of the morbid constituents of the rest? The mere diminution of the quantity of blood in a part can never cure an inflammation—is the wrong way to correct the faulty qualities of the blood—is the way, in fact, to perpetuate them. The fluids are

vitiated in quality, and the solids that move them are lowered in vitality. The true science of therapeutics can never sanction such an absurdity and cruelty as the measure in question.

228. In inflammation of the MUCOUS MEMBRANES, mercury and general bleeding are both contra-indicated—by good observers, at least, avoided. Local bleeding is mainly depended on. This measure among the Broussaisists, is an enormous abuse. In inflammation of the lining of the air-tubes, antimony is considered as essential to success; if there be no gastric irritation to forbid its use. Now, the indications of treatment being the same, can the same ends be answered by the processes of the Water Cure? We reply, Yes! more efficaciously, more promptly, more safely.

229. 1. The indication to subdue excessive vascular action, and to allay inordinate nervous irritation, is brought about with far less damage to the constitution, by the due use of wrung sheets, or by cold or tepid affusions,—both of which procedures can be so graduated, as in the course of a few hours to reduce to pulse (if need be) "to the smallest thread;" and to calm perfectly the most threatening nervous excitation—even maniacal violence. 2. Local excitement will be reduced by

cold lotions or evaporating bandages to the head, chest, or belly.* 3. The bowels will be got to operate perfectly by enemata of cold water; aided, if requisite, by the cold dash over the abdomen. 4. Diaphoresis and diuresis will be excited by copious potations of cold water: the former may be kept up to any extent by the proper management of the hot-water fomentations. 5. Pain, or general uneasiness, tossing, irritability, and sleepiness, will be marvellously allayed by the wet sheet. 6. Food will be withheld in the first onset; then, as the vital powers rally, as the stomach becomes able to digest, and the patient inclined to eat, it will be given according to the necessities of the case, and the discretion of the

* Cold externally, as a refrigerant, is almost universally had recourse to by practitioners in cases of inflammation of the brain and its membranes—organs considered the most delicate to deal with, and the most to resent any maltreatment. Why not employ its confessedly powerful aid in inflammations of other prime viscera, as the lungs, heart, stomach, intestines, bladder, and uterus; and in hœmorrage from these organs? The objection that by such means, the blood would congest or accumulate in internal parts, so as to aggravate the inflammation, is a mere theoretical dread. Cold water properly made to bear upon an an inflamed organ, diminishes the quantity of the circulating fluid in the part, as well as breaks the impetus of the blood going to the suffering organ. The *sedation* of the surface and the constriction of the superficial vessels, operated by cold, extends to the deeper-seated parts.

practitioner. The result of these measures will be—1. Effectually to cut short the most violent acute diseases in their first assault. 2. To render impossible the complications that confer upon them their fatality. 3. The perfect re-establishment of the patient's health in a very few days; often in a few hours. Lastly. To avoid the oft irrecoverable shock to the constitution sustained by the large draughts on the "*pabulum vitæ*"—the element of its strength and integrity; and to escape the damage accruing from the irritation of the organic tissues by the unnatural stimulus of drugs. This double drain on the vital powers lays the foundation of, perhaps, one-half of chronic maladies.

FEVER.

230. Fever is another of those abstract terms "embodying forth" an altered circulation or impaired composition of the blood. How far the received distinctions of fever indicate essential differences in its nature; or are mere modifications induced by variation in the grade of the primary nervous lesion, or in the seat of the subsequent visceral irritation—it is not for us here to discuss. Our object only lies with treatment.

The proper management of a bad case of fever calls forth the best curative efforts of the physician, and, because of its difficulties, is admitted to be the truest test of his genius. According to the course fevers usually run under ordinary drug medication, there is requisite the skill, coolness, and courage of a general who has to conduct a retreat, with a powerful army pressing on the rear, and dispirited, and ill-provided—sometimes refractory—troops to convey through a wasted territory.

231. With the old tactics, the dangers to be avoided in the treatment of fevers (as the ordinary epidemic fevers of this country), are—1. Too profuse antiphlogistic measures in the beginning: and—2. A delay in the use of stimulants, in the latter stages, till the powers of life are sunk too low. It will be conceded by every experienced practitioner, that in fever, as in childbirth, we should never do more than is necessary; a meddlesome practice is not more injurious in the one case than in the other. The strength is to be husbanded, in order to give the fairest chance for the triumph of the constitutional powers, in the struggle that is to follow—and to get the patient through the collapse and the complications that

constitute the difficulties of treatment, and become the causes of death. A prying look-out for, and and early attack of, complications, is the most anxious duty of the practitioner, as on the result hinges failure or success. Cleanliness, coolness, and free ventilation are indispensable under any treatment.

232. So far, there is very little disagreement among physicians. The matters of controversy are the best modes of accomplishing these ends. The amount and kind of depletion, by which alone, in the doctrine of the schools, fever could be cut short, in its first assault; or, failing that, its intercurrent complications removed—have been the subject of as acrid and endless a warfare, as the dispute as to its essential or symptomatic nature. The due reduction, by whatever means, of the excitement that distinguishes the first stage of common fevers; and the due administration of stimulants (as to time and quantity) in the depression that marks the after-stages—have been hitherto the nicest problems to solve in the whole circle of practical medicine. To Dr. Graves is due the credit of having established valid indications (as to time) for the safe employment of the latter. The former point, it is hoped, will now be alike decisively settled.

233. Local bleeding, for the complications of fever, has been agreed upon by most modern pathologists. General bleeding has received, and very properly, fewer partisans. It is a canon admitted by all, that the phlegmasiæ complicating low types of fever cannot be treated so actively as when not so combined—and on the principle of sparing the constitutional powers for the subsequent struggle. Dr. Billing and M. Bouillaud, however, do not recognise this exclusion of active treatment. They contend, that the depression and debility characterising low (typhoid) fevers do not prove a deficiency of blood, or an inability to bear its abstraction, but a deterioration of its quality, and local congestions of vital structures. Bleeding, they assert, takes off this inward load, and relieves the labouring circulation — making it fuller and less frequent. This reasoning is just, as regards the pathological state, and the primary effect of bleeding. But the remedy is as fatal as the disease, and must be so. Many patients, indeed, recover—escape; but few regain their former health. The majority of physicians, however, with Dr. Stokes, Graves, Ellioton, Bright, and Addison, at their head, inculcate much more reserve in the use of venesection in such cases.

234. Excessive purgation in fever is a crying abuse

and is almost an article of British medical faith since the publication of Dr. Hamilton's well known work; always excepting the Dublin medical school. Conceive the irritation, even on a healthy stomach, liver, and bowels, of large doses of calomel and jalap, salts and senna, ipecacuanha and aloes, castor oil and rhubarb: with "adjuvantia" of opium and hyoscyamus, musk and and antimony, nitre and digitalis.

235. The plan of Dr. Currie has been unmeritedly neglected. His cold affusion in fevers was never attacked, for it could not be controverted. In any other age than that of budding pathological theories, it would have found a large school of partizans. The absorption in another line of studies, of the minds that could have given a lead to the practice, or established it in fashion, and the apathy of the rest, led the profession to countenance, rather than confront, the popular prejudices against it. The Father of Physic appreciated the effects of cold water in controlling fevers, and uterine hœmorrhages; and had he had a glimpse of the lights of modern chemistry and physiology, would doubtless have been content with its agency alone in the treatment of these and other diseases. Accordingly it reached only the rank of a subsidiary

remedy with his successors. Dr. Currie deserves well of the profession, and of humanity, for his philanthropic efforts to make known the virtues of cold water in fevers. Notwithstanding its present disuse, cold affusions in fevers have the sanction of the best modern teachers. It has always been our "sheet-anchor."

236. The simplest British practice in fevers we find recorded, is the most successful—that of Dr. Jordan Lynch, in the worst districts of London (Lancet, Dec. 14, 1839). After rather brisk firing in the commencement of the attack—an emetic with a purgative of calomel and rhubarb and jalap; he confined the patient to three drachms of common salt to a pint of water in twenty-four hours: with plenty of cold spring water to drink: adding to the mixture, as the symptoms improved, a drachm of muriatic acid; with effervescing soda powders, till convalescence was complete: supporting the strength with beef-tea and porter. This is the most rational practice, within the pale of orthodoxy, that we have heard of in this country. The result was commensurate with its sense and simplicity. Of ninety-seven cases, not one died: and the recovery took place in as many days, as it required weeks with the usual routine.

237. Let us now compare the old tactics in fever with the new. The loss of blood (not to speak of its subsequent morbid results to the constitution) produces at the time an "irritative" or pseudo-fever, which is often mistaken for real: and the bane is often used again and again for the antidote, till the case is beyond either experimentation or cure. The medicinal means, "sanctioned by the highest authorities," for reducing fever, leave behind the track of their progress in the shape of organic irritations, which in turn become new objects of treatment. So that in such cases it is extremely difficult to say, how much of the organic lesion or functional disturbance met with, is the result of the treatment, and how much is the effect of the disease.

238. The Water-cure processes subdue all the abnormal action of fever, without leaving any new materials of irritation. A greater or lesser number of wrung-sheet applications, or of the cold or tepid affusions, not only abstracts morbid heat, but reduces inordinate vascular action, and quells excessive nervous irritation. Cold lavements aid in the same object; while they effect the necessary evacuations. Cold drinks assuage the thirst, cool the stomach, dilute its crudities, and facilitate their

propulsion, attenuate the viscid blood, excite perspiration, and provoke urine. If the brain is the great focus of irritation, cold lotions constantly renewed—with derivation to the extremities and surface, by the wet sheet fomentation, by the hip-bath by the shallow-bath, and by the foot-bath—soon subdue morbid violence. That, thus are accomplished all the ends that nature requires for the removal of diseased action, is apparent by the happy result. We appeal to facts alone for the settlement of this question. Let every practitioner who has the interest of humanity and science (and not the sordid gains of a calling) at heart, try the Water-Cure processes, as we have very feebly endeavoured to develope its principles and practice. The issue will decide him. No words will then be necessary to conciliate partizanship: no arguments will be of avail to stagger confidence. He will then need to fear no complications in fever. His ministry and his anxiety will both be terminated before it had seriously begun, under the old incendiary discipline. But will men be found disinterested enough to forego the fees? We rate the virtue of the best men in the profession higher than to think they will not.

ERUPTIVE DISEASES.

239. We select SMALL POX, for a single illustrative remark, which is equally applicable, *mutatis mutandis*, to scarlet fever. In mild cases, the ordinary cooling regimen, or even the *far' niente* practice, will suffice to conduct safely through the disease, and to prevent its malignant forms; which are now happily rarely seen, but still occasionally met with. In the latter cases, when the eruption is confluent, danger arises from two opposite sources, either from excessive or defective action. If from the former cause, steady perseverance in the sedative water-processes will diminish the violence of the inflammatory symptoms, and speedily amend the threatening character of the disease. If from the latter cause—danger from defective action—when the pustules are numerous, but small, badly developed, and pale—when the pulse is rapid and contracted, and the heart beats rather from its organic irritability (which disease is fast quenching) than from its muscular energy, then the stimulant power of water (as already explained in its proper place) must be had recourse to. Cold affusion, suddenly and rapidly performed, may so exalt the sinking vitality, and rally the energies of the organism, as favourably to decide the issue of the malady.

GOUT AND RHEUMATISM.

240. These are cognate diseases—twin brothers in pathology. The source of the constitutional disturbance is the excess of urea and uric acid salts in the blood. This *materies morbi,* again, is the product of the disturbed functions of the alimentary canal, or of the retained elements of excretions. The object of treatment is usually to eliminate these morbid materials, and so relieve a present attack. The means that do so, it is admitted, cannot correct the organic disposition or functional derangement that creates the disease. The free excretion of uric acid, by means of colchicum, or by benzoic acid (which converts it into soluble salts), is one of the few instances of a suitable adaptation of means to ends, in the symptomatic treatment of disease, suggested hitherto by the mutual lights of chemistry and pathology. It is after all the mere removal of an effect of disease. But, unless great care be used, the remedy is so noxious, that it will raise a demon in the system as bad as that which it is invoked to lay. The best drug medication has always failed, and must necessarily fail, to touch the cause of the disease.

241. It would be easy to present here a long array of the means renowned in the cure of gout

and rheumatism; and used with partial success. The principal of these are blood-letting, the hot or vapour-bath, emetics, purgatives, diuretics, and diaphoretics, in all possible varieties and combinations. Is it not in virtue of their opening the excernent outlets, and by this action solely and exclusively (and not by any occult properties they are supposed to possess) that the resources in question exercise any curative agency? Does not this theory explain the similarity of results obtained by the most different plans of treatment, and kinds of drugs, in the practice of contending sects? The effect, the goal is one; the means to it are many—the roads different, but all converging to the same point. Nature seems to make even the errors and passions of men contribute to her ends. *Nolens volens,* intentionally or unintentionally, the eliminating organs are, in the pell-mell of medicines, stimulated to increased activity. Could these ends be missed in the random prescription of calomel and opium, salts and senna, colchicum and guaiacum, iodide of potass, and cream of tartar, ipecacan and antimony, rhubarb and jalap, aconite and belladonna, sarsaparilla and bark, morphia and camphor, prussic and spanish flies, iodine and arsenic? Is not this long catalogue of

accredited remedies a satire on the "Divine art"—a confession of its impotence;—an acknowledgment that, open sufficiently nature's own excretories—put her in the train to do her own work—and it matters little what means do so; always taking care to use the means least costly to the constitution—allies the least likely to take the place of the enemy they are called to eject.

242. With the old tactics, the complications of acute rheumatism—*pericarditis* and *endocarditis*—require early diagnosis and prompt treatment to avert present death, or to avoid future disability. The bellows-murmurs set up in the heart and great vessels, consequent to bleeding *coup sur coup*, are the mere effects of the abstraction of blood; but are often mistaken and treated for the endocarditic complications. To these complications, undetected and untreated, are owing four-fifths at least of the chronic heart diseases, so often mistaken for essential asthmas, and the cause of innumerable dropsies. Dr. Hope's well-known treatment of rheumatism was sure to avert this mischief. Mr. Wigan's (of Brighton) mode of giving powdered colchicum in eight-grain doses every hour, till active vomiting, profuse perspiration, copious purging or diuresis, is the most

summary and successful plan for strong subjects. Here, too, we have another apt illustration of our theory of the *modus operandi* of really curative agents—that they operate physiologically, not chemically.

Let us compare, with the drug-treatment in question, the simple and nature-like processes of the Water Cure. The wet sheet or sweating blanket, with plenty of air, exercise, plain diet, and pure water internally and externally in various ways—constitute its sum and substance. What activity of the excretories can any drug of the long catalogue cited, effect, that is not more promptly, certainly, and safely effected by the water measures? What excitement of the circulation will not the wet sheet quell? What pains will not its general fomentation allay? What morbid elements will not its powerful exudation eliminate? Will any medicine, or combination of medicines, equal these effects? The ample exercise, the air, the diet, the regular hours, the calm of the passions, are more potent means for destroying the gouty acidity and diathesis, re-establishing the digestive vigour, and consolidating the constitution, than drug-medication, or minera waters, ever did, or ever can, pretend to.

243. *Neuralgia* is perhaps another member of the same family. Is not the seat of suffering identical in all the three—the fibrous neurilema? Are they not all marked by periodicity? This disease is too often confounded with inflammation, and treated accordingly. This is the case with pains of the head, chest, abdomen, and uterus. The differential diagnosis is not difficult, but nice. The water processes will afford the best means of radical cure. The only chance of permanent relief is by exalting the general health.

DROPSY.

244. It was, long ago, clearly made out by the French pathologists, and is now pretty generally recognised by the British (thanks to Dr. O'Beirne), that obstruction of some of the venous trunks is the cause of dropsy. The consequent distension of the venous ramifications is relieved only by the pouring out of serum into the shut cavities, or the cellular tissue.

245. In this disease, the two essential indications of treatment are—1. To promote the activity of the absorbents; and—2. To correct or relieve the structural lesions that are the *fons malorum*. Bleeding is very often adopted with the former

view (and sometimes without any view at all, by routine practitioners); if diuretics are to be used, venesection can scarcely be dispensed with, as Dr. O'Beirne has well shown; the best diuretics often failing *before*, seldom *after*, bleeding. We We admit the temporary triumph here—the relief to the effects of obstruction, by unburdening the loaded veins. But, to bleed these debilitated patients, who are generally old or broken-up people—is to rob their already too-impoverished blood of its small residue of vital constituents, and cannot fail eventually—by weakening the coats of the vessels, and the action of the heart—to confirm the morbid tendency. The factitious support of the strength by gin and brandy, as counselled by this clever practitioner, will only tend to the same result. If this disease is to be radically cured, the structural lesions that cause it are to be alleviated or corrected. Means that restore the strength and enrich the blood are the most likely to secure the conquest gained.

246. In dropsy, as in most other diseases treated orthodoxically, the weapons of warfare are chiefly directed to the attack of symptoms; and their exclusive object is to compel a violent effort of nature's own drains. This is accomplished by

stimulating hydragogues and diuretics—jalap and juniper, elaterium and squills, calomel and nitre, broom-tops and fox-glove, &c. But the removal of the serous accumulation is by far the least half of the cure. The strength has to be supported—the blood has to be enriched—congested viscera have to be unloaded—biliary secretion has to be rectified—sleep to be secured—local pains or general malaise to be relieved. The difficulty of accomplishing all this, while the organism is being belaboured by the battering train referred to, may easily be conceived! How do the simple water processes subjugate this disease?

247. Pressure, it is well known, gives activity to the absorbents—cold increases the contraction of the capillaries. Here we have two conditions for the removal of a dropsical collection. The shallow-bath of tepid or cold water, with long-continued and firm friction, promotes derivation, heat, and absorption; and thus relieves the loaded cellular tissue or serous cavities, and the congested condition of the viscera:—the wet-sheet fomentation in sufficient dose to open the outlets of the skin—and heating bandages tightly applied over the seats of effusion, will contribute to the desired ends. Exercise will additionally promote the

activity of the excernent organs and of the absorbent vessels—facilitating waste and necessitating supply. Appetite will arise. Digestion will improve. The too serous, or too fibrinous state of the blood will be corrected. The copious and systematic drinking of water, while it augments the activity of the skin and kidneys, will afford at once a menstruum for dissolving, and a vehicle for conveying away retained elements. We leave it to the unprejudiced to decide which of these means, drug-medication or water-tactics, gives fullest scope to the conservative powers of the economy, to clear away both the effect and the cause of disease.

HŒMORRHAGES.

248. We refer here, of course, to internal hœmorrhages—the province of physic, not of surgery. The old mode of subduing the excessive vascular action of hœmorrhages (in most cases the effect of hœmorrhage, not the cause) by copious blood-letting, according to the strength of the patient—is now yielding to tartar emetic and ipecacuanha in nauseating doses: a transition-state, we trust, to the simple Water-tactics. The closing of the orifices of the bleeding vessels is

sought to be accomplished by the coagulum formed in a state of depression. Is this coagulation in the extreme vessels the *modus operandi* of the more direct hœmostatics, ergot of rye, gallic acid, tanine, acetate of lead, and turpentine? Or is it by simple constriction of the capillaries, in the same way as cold primarily operates to restrain bleeding? The latter is most probably the true theory of the operation of anti-hœmorrhagic remedies. If it be so, why go about to restrain a bleeding by the tedious and dangerous mode of circulating a poison through the system, for accomplishing what Cold Water does promptly, certainly, and safely? In bleeding from the lungs, stomach, bowels, bladder, or uterus, cold can be made to bear both internally and externally, and to achieve its end too, often before a remedy—itself uncertain in its results—could be administered. No words can sufficiently reprobate the practice of bleeding, for the pseudo-excitement resulting from loss of blood—the "irritative fever," not inflammation—a symptom of exhaustion, not of strength—and which is to be cured by stimulants and nourishment, not depletion. Yet we have known this insane practice followed from day to day—the effect being mistaken for the cause; and the

patients who were lucky enough to escape this sanguinary procedure, permanently anæmiated and broken up.

249. In hœmorrhage proceeding from an active cause, and accompanied with real excitement, every end of cure may be accomplished by the wet-sheet, cold affusion, evaporating lotions—or by ligatures to the limbs, in the manner suggested by Dr. Buckler, of Baltimore,—an innovation in practice of such value as to entitle this physician to the thanks of the profession. If hœmoptysis be, as it is in the majority of cases, the result of a previous morbid process in the lungs — blood-letting is doubly injurious. In such a patient, the feeble pabulum of a feeble vitality is with difficulty replaced; tolerance of its loss is of the minimum degree: its abstraction takes away the only chance left for the organism to elaborate the healthy plastic materials of the tissues.

250. In uterine hœmorrhage, whether puerperal or not, cold affusion, the hip-bath, the use of the speculum already described, the foot-bath, the wet-sheet, cold drinks, &c., will do more than the old incendiary mode of pouring brandy or wine down the throats of patients, and then the use of tardy styptics.

251. The hœmorrhagic diathesis can be corrected only by the resources of such a perfect system of hygeiene as the Water Cure boasts, and proves itself, to be. The late elaborate essay on this subject, by Professor Miller, in the "London and Edinburgh Journal (July, 1842), is a painful one for a practical physician to read; unless, indeed, it be a cunningly disguised satire on the pitiful resources of curative art, at the seats of science in the middle of the nineteenth century—the more pungent because pronounced *ex cathedra*. For actual bedside practice it is nearly null and void. The paper in question not only lacks comprehensive and philosophic views of the great objects of treatment; but detains us all the while on the mere threshold of cure. Its whole strength is spent in spinning a physiological cobweb—an abstract and barren discussion about the production of a *coagulum*, such as would have suited the age of Cullen. This is the Alpha and Omega of the inquiry; and the chief aim of his curative efforts. The pathology is as much at fault as the physiology; effects take the places of causes, and are the objects of attack: while the general means of treatment proposed are of a nature to aggravate ten-fold the *fons malorum;*—namely, starvation!

the induction of inflammation to increase the proportion of fibrine, and promote coagulation!! nauseating remedies for the same end!!! drastic purgation with elaterium, with the same objcet!!!! Lastly, to give the *coup de grace* to a worn and fainting patient, almost drained of his fluids, and thus cruelly maltreated by the rules of art, not of common sense—water is forbidden to appease his burning thirst!!!!! This extreme measure is justified by another physiologieal fancy. Who ever heard that drinking eold water added serum to the blood? Does anœmia occur among water drinkers? Do ancient or modern writers on dropsy, mention this as a cause of serous blood or serous accumulations?

252. The really practicable means suggested are a quarter of a century behind the progress of science. Who that has ever treated a veritable case of the hœmorrhagic diathesis would lose his time with even the *pil. plumbi opiat.* while ergot of rye, tanine, or gallic acid would do in a few days what the other would tardily do in weeks; not to speak of the locking up of the alimentary secretions all that time by the large use of opium, even if so much lead did not prove an ungenial intruder into the organism. As to the eonstitu-

tional effects of the other more powerful hœmostatics, they have here no pre-eminence: there is only a choice of evils. But even the object of satisfactory arrest obtained, it is, with the old tactics, in nine cases in ten, only to feed the patient for the slaughter, so to speak—to accumulate new materials for a fresh outbreak. The cure is to be brought about by correcting the fault of digestion and assimilation, that produces a blood deficient in plastic elements. Hygeiene, not physic, must do this.

253. We hope this criticism will not be misunderstood. Personally, we highly respect Mr. Miller. But the subject too well illustrated the necessity of the practical reforms we are contending for, to be passed by in silence. *Amicus Plato, sed veritas, &c.* In strict fairness, however, to this venerable school of Medicine, it is to be remarked, that this subject was more in the line of observation of the midwifery or medical professor; and that had Dr. Simpson or Dr. Alison taken it up, it would have had full justice done it.

CONVULSIONS.

254. The source of this disease is a primary or consecutive irritation of the *medulla oblongata*, or

of the spinal cord. The remote irritation in children is, generally, in the course of the alimentary canal, as difficult detention, worms, &c. In adult females, convulsions are, perhaps, most frequently symptomatic of uterine irritation. In infantile cases, the Cold Water tactics are gradually coming into vogue. Dr. Marshall Hall, in his excellent observations on hydrencephaloid disease, recommends the cold dash or pouring cold water on the head, for the reduction of coma. We recommend, in addition, the wet-sheet envelopment, as an improvement on the practice. Dr. R. B. Todd has lately used the cold applications to the head and spine with marvellous effect. We hope that bleeding, as counseled for puerperal convulsions, will soon be replaced among accoucheurs, by the wet-sheet process with cold affusions to the head; and that the incendiary purgation by calomel, and jalap, and turpentine will cease.

APOPLEXY. ASPHYXIA. POISONING.

255. The apopletic tendency (congestion of the brain), and the apoplectic fit (rupture of a vessel), are met with in two opposite states of the system —either from excess or deficiency of blood;—a

too pallid, or a too rubicund face, being equally their symptoms. Whether in the sthenic or the asthenic state, bleeding is the most ordinary practice: but in either case it is alike bad. It will diminish, indeed, the quantity of blood, and give temporary relief in a threatened attack from its excess. But, as a curative measure, it is not only *nil*, but injurious. In approaching seizures of this kind, the patient has a deadly faintness; the action of the heart is rapid, irregular, intermitting; there is great anxiety, alarm, and excitement. How senseless, then—how injurious, to bleed a man in this condition! The *fons malorum* is not a redundancy of blood, but a failure of nervous power. The unequal distribution of the blood, which hence arises, is the great defect to be remedied. The abstraction of blood will eventually aggravate the effects; and will never correct the cause of the disease. To bleed in the shock of the stroke, as is too often done, is murderous: to bleed in the subsequent reaction hardly less unjustifiable. In the shock, the vital powers require no lowering; and, in the menace of the fit, as well as after it, excited action, whether real or factitious, can be reduced by means that will answer the temporary end, without an exhausting

drain of the life-current. Cold affusion, or cold cloths to the head, will strengthen (by constringing) the vascular coats, and will prevent rupture. The wrung-sheet envelopment, hip-baths, or the shallow bath, with sufficient friction of the trunk and extremities, will equalize the circulation. Lavements will regulate the bowels. Copious water-drinking, with exercise, pure air, and plain diet, will refresh the blood of the impoverished, and attenuate the blood of the bloated, and call into activity the excretories. The incendiary stimulation by wine, brandy, and drugs, to keep the patient's spirits up, necessitates frequent bleeding to keep the force and fulness of the cerebral circulation down. Dr. Wilson relates a remarkable case of this kind* as illustrative, as he well remarks, "of the vast field for reformation in the medical treatment which at present prevails," but equally illustrative of his own skill in dealing with the simple weapon of water.

256. In the prostration, paralysis, and stupor succeeding a cerebral rupture that does not immediately kill—in persons asphyxiated by accident

* The Practice of the Water-Cure, with Authenticated Evidence of its Efficacy and Safety. Part I., p. 7. London: Ballière, and A. H. Baily and Co.

or design—in those seized with sudden madness, or maniacal violence, with suicidal or homicidal tendencies—in patients apparently stricken with death—and in cases of poisoning (after attempts at neutralization by the appropriate antidotes)—in all these instances, active and long-continued friction for hours in the cold, cool, or tepid shallow bath, promises more than any other measure. This remedy in Priessnitz's hands is attended with astonishing success. Electro-puncture, between the eighth and ninth ribs, to the fibres of the diaphragm, will, in viable cases, restore respiration when all other means fail. Dr. A. T. Thompson advises to abstract a large quantity of blood from the neighbourhood of the brain! to counteract the effects of the poison on that organ!! and to afford time to provide against the collapse!!!—an event sure to be produced by the remedy, if the poison should fail to finish the patient. Waiving the practice, is this sound physiology?

CONSUMPTION.

257. The full resources of the Water-Cure have never yet been brought to bear upon this fearful disease. The lights of Liebig's discoveries will do more than aught else to stay the ravages of this,

the fellest foe of humanity—the desolator of the happiest homes—the blighter of all that is brightest and loveliest among the sons and daughters of men. Thank God! an antidote may at length be said to be found for this desolating scourge. A clearer revelation of the cause is suggestive of valid measures both of prevention and of cure. The greatest triumphs of the Water-Cure system of Hygeiène have, probably, yet to be achieved in this domain. But the practice must be in the hands of thorough-bred professional men. In this field of human woe, it may be predicted, without hyperbole, that a grateful posterity will record it of the Water-Cure physician—as, in other fields of disease, it is pre-eminently entitled to record it of Priessnitz—"He stood between the living and the dead—and the plague was stayed!"

258. Dr. James Johnson, in his private capacity as an observer (and a first-rate observer he was), was forced to admit, that "the paramount virtue of the Water-Cure is that of preserving many a constitution from pulmonary consumption!" In his public capacity, as a reviewer, he saw fit to revoke this eulogy, and to decry the Water-Cure. In the former case, the conviction

of an honest heart was spontaneously uttered, in a moment when no motives of policy dictated its suppression. But alas! for the boasted freedom of the press in Great Britain, the medical press is not free. If he had told the truth, and shocked the prejudices of his supporters, there would be a speedy end of his vocation and his Journal. Alas! for the mental slavery of freemen! How abject is the condition, how craven the thoughts, how pitiable the reantation of him, whom the necessities of business compel to pospone truth to interest. Woe to the professional repute of that medical writer, whose doctrines do not square with the fashionable dogmas of the time; Sydenham was despised and rejected in his own day. Yet the very men who repudiated him, have been forced, in later times, as if in atonement for their insult, to come and do homage at his shrine.—*(Revenons à nos moutons.)*

259. The oxygen of the air is the proper external cause of the waste of matter. Phthisis is a wasting of the frame in this way—a literal rusting to death. The essential feature of the debilitated and cachectic constitution, which is the *fons malorum* in consumption, is the formation of

tissues of a low degree of vitality. Tubercles are one species of these morbid products; organization is stopped short; that which should be a deposit of fibrine, is only an exudation of albumen. Animalization is imperfect; the organized globules are arrested in their development. A vitiated nutrition is the starting-point of the mischief. The analogy is almost perfect between tubercular disease of the lungs and scrofulous deposits of the exterior.

260. The correction of nutrition—the invigoration of the digestive powers—the building up of a faulty constitution with new and sound materials—is the fundamental aim of treatment. As this disease, according to Liebig's theory, is essentially an oxydation of the tissues of the body, that food should be given which affords the most elements for combination with oxygen—thereby to shield the tissues of the body. The diet must, therefore, be generous. Antiphlogistic treatment—dietetic austerities—the failure of the moral energies consequent to the withdrawal of "hope"—and, too often, the palsied efforts of the practisioner, from the decided prognosis afforded by the stethoscope—aggravate tenfold the fatality of phthisis. Late statistical researches go to prove

that the intemperies of climate has very little to do with its prevalence.

261. Emetics have in past time done wonders in this complaint at all stages; but their curative power, especially in early stages, will be admitted by all practitioners of large experience who have given them a fair trial. These happy results may be explained partly—1, by the revulsive effect of the remedy on the constitution at large—2, by its stimulating certain physiological actions—pre-eminently promoting the activity of the absorbents, and of the cutaneous circulation. Setons or issues over special seats of tubercular deposits—or the daily use of St. John Long's liniment (recommended by Drs. Graves and Stokes!), with the inhalation of iodine and conium, according to the formula of Sir Charles Scudamore—have, in our hands, saved many condemned lives, that without them would have been sacrificed. The return to the active pursuits of business of many individuals whose lungs were hollowed out with tubercular excavations, who had been given up as hopeless, and had actually approached the gates of death—must be a pretty familiar experience with all who have observed carefully, and treated perseveringly, numbers of such patients. Yet, successful as this

practice has been, it is not to be compared with the truly marvelous and quite unlooked-for results of the water treatment of pulmonary tubercles in their crude or first stage. A short time ago appeared a volume, written to show, by the evidence of authenticated cases, and by the aids of diagnostic physical signs, before and after treatment, "*The Curability of Consumption by the Water Processes.*" * But, in such diseases, let patients, above all things, beware of entrusting themselves to the hands of unprofessional "*exploiteurs*" of the Water Cure. Priessnitz only failed in these cases because of his want of physical diagnosis: and because most of these patients have too feeble a vitality to resist the powerfully oxydizing influence of his rigorous climate and treatment. But the Water Cure, as modified by practical physicians, both in climate and in processes, to the weak vital powers of such patients, will be found to be, as we have above affirmed, the most effectual check ever yet discovered for CONSUMPTION.

262. In ASTHMA, CATARRH, and HOOPING COUGH, the Water Cure measures, by maintaining or re-

* See, by the author, "The Water Cure in Consumption; a Demonstration of its Curability. Illustrated by 147 authenticated Cases of Cure." LONGMAN & Co., London.

calling the healthy functions of the skin, and augmenting the tone of the nervous system, diminish the susceptibility of both to morbid impressions, and harden against atmospheric vicissitudes. On the same principle, it is beneficial in the intervals of all periodic diseases—as ague, neuralgia, epilepsy.

STOMACH COMPLAINTS.

263. Here, alas! medicines, by almost universal consent, are totally impotent. Drugs may relieve symptoms; but they never yet have created, and they never can create a healthy stomach, or confer a vigorous digestion. By the water discipline alone a radical and permanent cure is to be effected. Without "change of air," and "travelling exercise," how vain are the prescriptions of the most sapient medical mentors!—with them how useless!

URINARY DISORDERS.

264. The qualities of the urine are altered by disease of the kidneys, or derangement of the constitution. The secretions are temporarily vicarious of each other: an augmentation of one diminishes another, and *vice versa*. If the function of the liver be suspended, highly carbonized products are elimi-

nated with the urine. If the cutaneous or pulmonary exhalation be obstructed, there is a deposit of uric acid. In diabetes, and Bright's disease, there is a diminution of the functions of the skin: and in both a new element is added to the urine. In the former disease, the "*fons malorum*," so long referred to the kidneys, is to be sought in the digestive organs. The saccharine principles, or matters containing them, which we take as food, cannot be assimilated to the constituents of the blood, and of the living tissues. The ulterior stages of fermentation therefore take place: an abnormal development of saccharine principles is the result. The great object of treatment must be to strengthen the digestive and assimilative functions—to prevent the formation of sugar in the stomach. As to the other faulty states of the urine, or its apparatus, the remarks made under the head of gout and rheumatism make but few words necessary here. If any means will radically cure these diseases, it is the entire discipline of the water treatment. Well-regulated diet, exercise, and cold bathing, with the powerful eliminating process of the wet-sheet, will do more than alcaline or saline draughts, colchicum, mercury, opium, sugar of lead, bark, benzoic acid, wine, purgatives,

diaphoreties, diuretics, tonics, or bleeding. The correction of the faulty properties of the urine (where that can be effected, which is no easy matter in many cases), is, after all, merely the remedy of an effect, not the removal of a cause. In changing, for example, the character of the urine from acid to alcaline, the *fons malorum* is still untouched.

UTERINE DISEASES.

265. We venture to affirm, that the water treatment of the constitutional disorders of females—of the morbid results of pregnancy, miscarriages, and difficult labours—and of the illnesses incident to commencing and terminating menstruation — diseases, the bane of beauty, and the blight of hope—will one day, when conducted by physicians of skill and experience, exhibit the richest trophies of curative art. We hold out no hope of the cure of cancer. That its ravages, however, will be prevented, or greatly diminished, is a legitimate hope.

SKIN DISEASES.

266. The radical cure, and sometimes only the relief of some forms of these obstinate complaints,

is the most difficult achievement in medicine. If any where, the water processes are here omnipotent. But they require full time to operate their results, and a very full course in all respects. The wet-sheet fomentation, which any one anxious for a cure may, in almost any circumstances, enforce, is the direct means chiefly to be relied on. This alone will mitigate any form, however inveterate and tormenting.

SYPHILIS.

267. The real SPECIFIC for this plague, also, has been, at length, brought to light. M. Ricord himself confesses that mercury, or iodide of potass, is no specific for it, but merely cures the sets of symptoms as they arise. The water-processes done justice to—notably the wet-sheet exudation, eliminate the whole virus from the system, even of the incurables. A mechanic, ill for the last six years, of what Ricord would call a "*verole*" of the fifteenth century (so malignant and intractable has it been in every stage), for which he has been treated repeatedly in the first provincial and London hospitals, has now, for the first time, its ravages arrested, and his health re-established, by the very imperfect water treatment he can give himself in

his own very poor home. The excessive and indiscriminate use (or rather abuse) of mercury in this disease, has, probably, done more mischief to the human constitution than even its unchecked progress would have done. This, at least, is certainly the case, as the disease presents itself in modern times.

THE DISEASES OF CHILDREN.

268. The diseases of children have been hitherto, under the old tactics, of alarming fatality. Statistical researches in great towns demonstrate this: —more than one-half of the whole amount of deaths is of children under five years of age. By the processes of the Water Cure, the whole of the once-fatal tribe of infantile diseases is now comparatively innocuous; and need cause no further anxiety to practitioners, or alarm to heads of families. The most threatening illnesses, as we have again and again witnessed in our own family and in others, are averted in a single day or night —often in a single hour—illnesses that would have run on to weeks of treatment, and, in all probability, have ended fatally, under drug-medication.

269. Croup (*acute laryngitis*), the most formidable and deadly of these, is now divested of its

terrors. This disease, under the old system, unless attacked with the greatest vigour and skill from the beginning, will kill in a few hours. The mode we found most successful, in combating very bad cases—and short of which there was no salvation —was almost a living death to an infant. We must describe the implements of warfare in the order of their use:—1. General bleeding, if the child were robust. 2. An emetic. 3. Sponging of the chest and throat with very hot water. 4. A grain of calomel every two hours. 5. Local bleeding. 6. An emetic again. 7. If, notwithstanding this brisk battery, false membrane still forms, cauterization of the throat with the solid lunar caustic:—or 8. Its abstraction, by the finger thrust into the glottis, when the patient is, perhaps, struggling in the last gasp!

270. How much more simple, how much more successful, the water treatment, which rescues, sometimes, even in *articulo mortis!* The wet-sheet investment, *pro re nata,* which is now a depletent, now a sudorific, as the necessity arises: evaporating bandages to the throat: cold affusion repeatedly to the back of the head, neck, and spine: cold water to drink.

We might go on, at this rate, discussing the thousand-and-one ills that flesh is heir to in the shape of disease, and comparing their drug-treatment with their Water Cure. But we have not room, nor is it expedient, in a work of this nature, to develope applications. Enough, we deem, has been said to illustrate the principles we contend for, and to stimulate those who are better qualified to take up the research.

In conclusion:—we sum up the merits of the simple Water Cure relatively to the old complex treatment, in the following axioms—truths which can neither be subverted nor denied—which both reason and experience, theory and fact unite to establish:—

271. The office of art, in the cure of diseases, is merely to aid nature. The most genuine and really available aid to nature, in her restorative efforts, is that rendered by the processes of the Water Cure.

272. A remedy can only be truly valuable, and inspire a just and rational confidence, in proportion as its nature and action are accurately known. As the doses, the effects, and *modus operandi* of cold water variously applied, are more clearly ascertained than those of any other remedy;—on these abstract grounds alone—(apart from the

results of practice)—water makes out its claim to public and professional confidence.

273. The water treatment will cure all diseases that medicines will cure; that is—proper appliances of water externally, and its due use internally, will cure many diseases that medicines will not cure, and will place the powers of the system in the same favourable position for restoring healthy action, that the most scientific administration of drugs is said to do. The water processes, moreover, will materially alleviate the sufferings, and prolong the days of the incurable.

274. The Water Cure treatment can be so modified as to produce every physiological change, and curative effort of the constitution that drugs can effect, and to fulfil every indication of medical treatment—now to be a stimulant—now a sedative—now an anodyne—now a revulsive—now a diaphoretic—now a diuretic—now an emetic—now a purgative—and each in the most salutary measure; and in a manner at once safe, certain, prompt, and efficient. Medicines are confessedly unsafe, uncertain, tedious, and inefficient—either going beyond, or falling short of, the effect intended. It is now clear to a demonstration, therefore, that, in the present state of science,

drugs can be superseded by more trustworthy substitutes; and they ought to be superseded, as not only useless, but injurious agents.

275. The salutary stimulus of every organic function is obtained by the Water Cure processes —of digestion, assimilation, absorption, exhalation, secretion, excretion. All the ends of perspiration are obtained by wrung-sheets, the sweating blanket, or heating baudages; the ends of purgation are obtained by lavements, cold or tepid; the ends of diuresis by sufficient water-drinking; the equalization of the circulation, or the ends of revulsion or derivation, are obtained by the general fomentation of the wet sheet, partial baths, long friction in the shallow bath, the douche, &c.

276. The great aim of all sound and scientific treatment—the true philosophy of therapeutics—is to obtain a eure by crisis—to let off diseased action or elements, by opening a drain through the outlets nature takes in her own spontaneous cures. The entire and exclusive aim of all the Water Cure processes, is to develope the full activity of the secernent and excernent functions. This is accomplished without any of the unnatural strain and stimulation of the organism, that drugs always produce when they are directed to the same ends.

277. The tendency and result of the Water Cure processes in acute (*dynamic*) diseases, is to lessen, permanently, the heat of the body; to reduce inordinate vascular action; to quiet excessive nervous excitement; to unlock the reluctant excretories of the system—the safety-valves of nature; to clear out capillary obstructions; to open up the pores, to cleanse the surface, and to re-establish the elimenting functions of the skin; to obtund all morbid sensibilities that fret alike mind and body; to conciliate sleep.

278. The tendency and result of the same measures in chronic (*adynamic*) diseases is to develope animal heat; to equalize the circulation of the surface and extremities; to facilitate the transformation of matter; to eliminate morbid excretions; to augment muscular vigour; to increase nervous power; to produce at once a demand for food, and the ability to digest and assimilate it: to give buoyancy to the spirits, alertness to the movements, and energy to the whole organism. Under the Water Cure, in an incredibly short time, the whole mass of the blood, and the entire quality of the secretions, are changed. The constitution is literally renovated—rebuilt. These results are not hypothetical; or the mere colouring of a

heated imagination; but they are a demonstration, on the clearest physiological grounds; and are realized yearly, in the cases of thousands of patients, most of whom were pronounecd previously beyond the reach of art.

279. An indispensable condition to the success of the Water Cure is the withdrawal from the system of all irritation, in the shape of affections of the mind, turmoil of affairs, and stomach-fret from improper diet, drinks, and drugs—all which aggravate the original malady, and establish new centres of morbid action.

280. The Water Cure does not mortgage the powers of the constitution; nor leave behind vitiated habits; nor entail morbid tendencies; nor induce after-maladies — as when cure by drugs takes place. When the end of medicine is gained —when present disease is vanquished—we have no guarantee against (or rather we have the fearful looking for) the attack of a new ailment, a growth, so to speak, from the seed of the drugs—noxious weeds springing up in a soil made rank with pharmaceutical filth.

281. By the Water Cure, the present dangers of routine medical treatment are avoided; namely, 1. Interference with the salutary changes operating

by nature.—2. The depression of the vital powers by unnecessary bleeding, purging, vomiting, sweating, and diuresis. The metastases thus favoured —the complications thus entailed, arrest or alter the natural course of disease, and impede recovery where they do not prevent it. It is assuredly this blind and meddlesome practice that confers upon fevers their immense fatility.

282. Drugs are immediately or ultimately injurious even when wielded by the most skilful hands; and the best of them are uncertain in their benefits, either from being spurious in their nature, or spoiled in their qualities. They are, moreover, administered by the partizans of one school of medicine, in doses which those of another declare to be poisonous. The Water Cure measures, in competent hands, are always innocuous, cannot be sophisticated, and cannot prove inert.

283. The best treated cases, according to the doctrines of the schools—those most successful in result—are attended with such serious drawbacks, as are calculated greatly to abate the boast of the physican's triumph, and to cool the ardour of the patient's gratitude. These drawbacks are,—1. The tedious convalescence occasioned by the exhausting depletions thought necessary to quell the abnormal

actions of the organism.—2. The liability to relapses, from the reduction of the organic vigour, rendering the system doubly impressionable to morbid causes.—3. A permanently impaired constitution. — 4. The drug-disease subsequently springing up.

284. Blood-letting — the withdrawal of the *pabulum vitæ,* and, consequently, the reduction of the *vis vitæ*—only augments the susceptibility of the system to take on diseased action. All lowering remedies, by diminishing the plasticity of the blood, dispose the morbid processes of the body to develope low products—tissues of deficient vitality —the degenerations of structure (as tubercle) characterizing the most deadly diseases. Of how great moment, therefore, must be a plan of treatment that quells inflammation and other diseased states, without a waste of the vital fluids—and which nips them in the bud before they become chronic and confirmed? How all-important is the indication, to improve the condition of the blood, by inducing the highest activity of the digestive organs—the greatest amount of nutrition—simultaneously with measures to arrest local diseaaes, and to eradicate constitutional taint?

285. The wet sheet or the cold affusion, pro-

duces effectually and permanently, all that relief which bleeding produces ineffectually and temporarily; and with the material advantage of not robbing the constitution of the prime elements of its strength. No anodyne, no opiate, no evacuant, no medicinal means, can equal, or at all approach, the prompt and powerful sedative effect of the wrung sheet on the vascular and nervous systems.

286. The Water Cure, with its auxiliaries of air, exercise, and diet, justly claims to be the most perfect system of *Hygeiene* ever set forth.

287. The Water Cure is the long-sought and best devised constitutional treatment of local diseases.

288. The Water Cure suspends the pre-disposition to, and eradicates the taint of, hereditary diseases, scrofula, consumption, gout, and rheumatism. It removes the *cachexia*, or vitiated habit of body induced by mercury, iodine, arsenic, and other drugs. It will improve the human constitution with the advance of time; and even be an instrument of the moral elevation of man. For it not only makes practicable, but easy, the abandonment of bad habits; and supersedes, by healthier appetites, the factitious stimulation of drams and drugs.

289. Most fatal maladies kill from want of proper early attention. The bulk of chronic

diseases are admitted, by the generality of pathologists, to be the consequence of neglected or maltreated acute diseases. These chronic maladies will now be diminished, if not exterminated. The timely application of the water-processes will prevent the development of the most dangerous and intricate stages of acute diseases, as they occur under drug treatment.

290. On the outbreak of future illnesses, water-treated patients will have in their favour all the moral and physical advantages, which arise from entire confidence in a remedy, and a sure hope of its success. They will neither be alarmed by vain terrors, nor nonplussed by contradictory counsels.

291. The Water Cure is neither tedious nor expensive compared with the time and money spent in the vain pursuit of health. The most shattered constitution is rebuilt in a comparatively few months: a new lease of life, as the patients express themselves, is taken; and a new sphere of activity and enjoyment opens up for those who considered themselves as closing alike life's hope and history.

292. The most of the water-cured patients have adopted it as their last expedient;—having exhausted the resources of the Pharmacopœia in

their efforts to get rid of their diseases—often their purses; and always the ingenuity and the patience of their medical advisers.

293. If the Water Cure has done, and promises yet to do, so much to renovate decayed constitutions, and to cure or relieve diseases erewhile incurable and unrelievable; how much more efficacious must it be, to preserve the health already unimpaired, by removing the conditions, and arresting the elements, of disease, in their first development.

294. The proper administration of the Water Cure measures requires full as much knowledge of the powers of the remedy, and judgment as to the capabilities of the individual, as any other mode of medical management. The tampering, therefore, of invalids, with their own cases, or of unqualified and uneducated persons with the public health, cannot be reprobated in too strong terms.

295. An exact knowledge of the physiological and pathological effects water can produce, and of the morbid conditions wherein its agency is indicated, can alone enable the practitioner to employ, with intelligence and success, the different "means and appliances" of the cure—to appreciate their diversified modes of action—and, therefore, to

multiply as well as to simplify his therapeutical resources, in knowing how to perform, with one unique remedy, almost every possible indication.

296. The graduation of the dose of the water—measures—the mode of exhibition—the temperature—and the time of application—relatively to strength of the patient, and the necessities of the disease, will constitute the touchstone of the praetitioner of true genius. "*Medicus nascitur, non fit.*"

297. The faulty administration of water—neglect of the laws of its operation—a groundless timidity of its due application to the living organism—or a love of sophisticated art instead of simple nature—one or all of these causes have almost driven it from the pale of orthodox praetice, and equally limited its general usage in society.

298. Brilliant as the achievements of the Water Cure hitherto have been, it is reasonable to believe that, when it is zealously studied and carried out by professional men of learning and genius, it will bring forth fruits many-fold exceeding all the rich harvests of the past.

299. A justifiable feeling against unprofessional dabblers in the Water Cure, is very unjustifiably

extended to the practice itself. Medical men have their own prejudice and apathy to blame for leaving the field open to ignorant *exploiteurs*. Their adoption of the Water Cure will be the death-blow to quacks and quackery. Any other means than the diffusion of knowledge to suppress quackery, is absurd in its nature, and will be inefficient in its end. The encouragement given to it, arises out of a principle of human nature, that will neither be eradicated by a "coercion-bill," nor shamed out by ridicule. Destroy the mystery and mysticism of physic, and quackery will die a natural death.

300. The Water Cure will produce such a revolution in the treatment of disease, as has never occurred before, and never will occur after. Hitherto, the sects and schools of physic have been pretty equally divided. How conflicting soever their practice, and how contradictory soever their theories, the results of treatment are nearly uniform in all. But the case is far otherwise with the new system. The immense, we had almost said infinite, superiority of its results, alone demonstrate that its principles must be founded in truth. The relative number of cures is out of all proportion greater, and of deaths out of all proportion less,

in a thousand cases of severe maladies treated by the new, than in the same number treated by the old practice. It is a mortification, therefore, the pride of science must endure, to see the cumbersome mysteries of scholastic lore, superseded by the simpler and more efficacious practice of a peasant genius.

301. The science of medicine—the immutable truths of anatomy, physiology, pathology, and chemistry, on which it is based—will never be superseded; its present art will—the dogmas and doctrines of pharmaceutics, and their uncertain applications, will be exploded. The faults of the herb-collector, the errors of the laboratory, and the adulterations of trade, will no more vitiate or nullify medical practice. A new cycle in the history of medicine is now commencing to run. Water—despised water—which is, nevertheless, the moving principle of our machinery, and the vehicle of the commerce of nations, is destined, henceforth, to be an agent of co-extensive utility in the god-like art of healing.

302. Opposition, when honest and not factious, is good, and to be coveted. It will call combatants into the field on both sides; and the result of the collision will be the eliciting of TRUTH.

"Who ever knew truth put to the worse in a free and open encounter?"—*Milton.*

303. The most serious objection to the Water Cure, is, that it is an unprofitable mode of practice. Disease is too soon subdued; and the artillery of its reduction too simple, too overt, and of too small cost, to be good for trade. This tells in a commercial country. But if this objection were as valid as it is selfish and short-sighted, a wise government will never enlarge its revenue by what curtails the lives of its subjects; or promote the profit of the few by the loss of the many.

304. The general adoption of the Water Cure principles and practice will induce a much more healthy frame-work of society, physically, mentally, and morally; and will thereby annihilate an almost infinite host of diseases, that originate in present baneful modes, customs, and habits—not to say the present system of polypharmacy. This "heavy blow and great discouragement" to the material interests of the profession, is sufficient reason for the warfare, offensive and defensive, waged against the Water Cure, by those whose craft and emoluments are in danger. "Great was Diana of the Ephesians." Yet her fane fell, and her votaries disappeared, before the rising shrine of a purer worship.

305. The well-grounded pretensions of the Water Cure not only concern individuals, but claim the attention of governments. Premature deaths in the middle and higher classes, are a substantial loss to a state, of the materials of its strength, and the elements of its intelligence. Premature deaths of the poor, or their disablement by chronic maladies, or their long confinement by the tedious treatment of acute diseases, are a direct and indirect loss of money to the State. Let the Poor Law Commissioners, and the Boards of Guardians throughout the kingdom, inquire into the sums that would thus be annually saved by preventing premature deaths, tedious illnesses, and permanent disabilities!

306. It may be safely affirmed that nature has provided in every country an antidote to its diseases, as well as the diet suited to its climate. The fond dreams of philanthropists, and the longing hopes of physicians, may now be said to be realized, for the first time in the world's history. A *panacea,* as nearly as can be—a universal remedy—so far as such a boon is consistent with the laws of nature—seems at length to be discovered, and set before the eyes of a wondering world.

Here, then, we take leave, without regret, of the waning glories of the ancient temple and rites of PHYSIC—with all that splendour lends them of classic decoration, gothic ceremonial, and barbaric emplement. Its priests, real and pretended, have enjoyed a long, lucrative, and honoured day. Its votaries have been as zealous in worship, as unsparing in oblation. The world will not look upon its like again;—a system that has braved the storms of ages; and which, by the sole prestige of human authority, has commanded the veneration of all countries and classes, and maintained unchecked the even tenor of its sway through the long lapse of three thousand years. This venerable relic of other days—which stands out as a monument in the waste of time, telling of the convulsions of nature, and of the wrecks of Empires, which it has survived—now at length is assailed in its foundation, and totters to its fall. On its ruins is preparing to arise a STRUCTURE, simpler in its grandeur, and more massive in its strength—destined to propitiate a truer divinity, to perpetuate holier observances, and to last through all succeeding generations. Although its architect be only a peasant-philosopher, yet its proportions, its arrangements, and its uses, are found to be in

admirable harmony with the principles of modern science, the wants of modern society, and the tendencies of modern institutions.

CHAPTER VII.

GENERALITIES OF THE WATER CURE.

CONCLUSION.

307. From the preceding exposition of the intimate nature, physiological action, and philosophic claims, of the WATER CURE, it must appear to be a system based on truth—notwithstanding any errors or abuses of administration—a system that, of all others, comes nearest to the requirements of man's organism in disease. It is, moreover, exactly in harmony with the spirit and the wants of the times we live in. Its public reception has corresponded with the validity of its pretensions. It is no longer a thing to be scoffed at, scouted, and turned out of doors. Yet it still takes men by surprise, dazzling them by its light—the prejudiced are stirred up to opposition—the candid

incited to inquiry. Like many of those discoveries that, from time to time, burst upon the world, its history, also, is calculated to rebuke the pride of science, and to silence the boasts of erudition. It is not the first time that truths, the most influential on human destinies, have escaped the notice of the wise, the learned, the mighty, and have been revealed, as it were, to the simple babe and to the illiterate peasant!

308. The practical physician who has renounced drugs, &c., on the demonstration of their inferior efficacy to the water treatment, would be shrinking from his duty as a good citizen—would be a traitor to that loved medical science he had sworn to advance—and would be faithless alike to his own private vows to pursue and contend for truth, how unpopular, how unappreciated soever—if he did not come forward, with all the strength of his head and his pen, to urge the claims of the Water Cure.

309. Some people ridicule the idea of *one* remedy being applied to uses, cases, and constitutions so various. But this is from want of knowledge, or want of reflection. Although the remedy be unique, yet its appliances are capable of endless modifications. Its doses can be graduated to

every requirement. It can be so wielded as to produce every degree and difference of effects on the animal economy.

310. The medicinal use of cold water had so fallen into oblivion, that its resuscitated virtues are marvelled at—even disbelieved. Heretofore, it was deemed incredible (so far had the mania for medicine prevailed), that drinking plentifully of cold water, and its copious application to the skin, will cure a raging fever, straighten contracted limbs, cool the ardours of inflammation, and assuage the pains of gout and rheumatism. Yet these are its easiest and every-day achievements! When physic leaves a case, water takes it up—completing that which the other could not even begin.

311. How strange, how unworthy, that the noble profession of medicine should still retain and practise the delusions of the age and art of alchemy! In all else, and everywhere else, scarcely a vestige remains of the *elixir vitæ* and *philosopher's stone* absurdity. But in the laboratory of the pharmaceutist, the silly furor seems still to rage in all its pristine intensity. The romantic but vain hope of discovering agents endued with the talismanic virtue of charming

away every form of ailment flesh is heir to—is still indulged. This has lead, and yet leads, to a great waste of time and misapplication of ingenuity. The multiform products of the animal, vegetable, and mineral kingdoms, are tortured in all sorts of ways, worse than to no end. True, the pharmacopœia, and systematic books of practice, are filled with interminable compounds, inventions, and nostrums; and this senseless catalogue is reinforced every day—as if this prostitution of art, and degradation of science, were its highest glory and its best achievement.

312. Popular "Systems of Physic,"—treatises on "Domestic Medicine," — giving outlines of diseases, their symptoms, and remedies, — and written with a view of every man becoming his own physician, more or less,—are either the products of folly or cupidity. No real medical philosopher could so pretend to serve his generation. The idea is absurd — the execution injurious. What wise man would take for himself, or administer to his wife or children, active poisons according to vague directions—"pouring medicines, of which they know little, into a body of which they know less?" How shall we expect from the uninformed judgment of a patient, the

application of practical rules in physic, which depend on the accuracy of the diagnosis—an application often so difficult to the most experienced practitioners."

313. Notwithstanding these very formidable obstacles to every man becoming his "own doctor," yet the indoctrination of the masses of the people—at least, of the well-educated portion of society, is neither chimerical in idea or unfruitful in result. Indeed, the study of Medicine, or the art of healing, has been urged on the laity by the greatest minds in the profession. As regards drug practice, this advice is indeed both impracticable and pernicious. Physic is too puzzling, too complicated, too extensive a pursuit, to be taken up by amateurs. Even to practitioners, the nature, qualities, doses, and combinations of drugs, present an inextricable labyrinth—a *terra incognita* in science; and it must ever remain so. Indeed, drug-therapeutics constitute such a hopeless chaos of absurdities and contradictions, that reform is impossible. Were this study not now happily rendered obsolete, the only true path of progress for it would be the investigation of the physiological and curative effects of simple drugs, in simple doses, and in simple diseases. This would

take centuries of observations by first-rate minds to accomplish; and even then, so liable is the experimentation to be vitiated by errors of diagnosis, that to expect true science in this department is visionary and futile. The absurdities of drug-medication have, for ages, brought the profession into contempt. It is so still; and justifiably so. But make the tools of practice simple, safe, and effectual, and you will diminish the uncertainty of the science, as well as increase the trophies of the art of healing. Advancing knowledge will prove drugging to be so odious, so demoralizing a system, that it will be impossible to be maintained. Interest alone sways the opposition.

314. Painful experience has proclaimed the insufficiency of the existing modes of practice. While, under the auspices of the Baconian philosophy, all other branches of experimental science have rapidly advanced to the highest perfection, the art of healing has lagged far behind in the march of discovery and improvement. Medicine as a science, and Medicine as an art, are two very different affairs. The efficiency of the latter has not corresponded with the progress of the former. The structure of man, by means of the scalpel,

the mieroseope, and chemieal re-agents, has been profoundly investigated; but the study of the philosophieal relations of remedies to the animal economy and to diseases has not kept pace with it. Medieine, in this view, has been proseeuted and regarded too much as a study for the eurious, and too little as a praetieal art for preserving life and mitigating pain. The praetieal aims of the physieian, as a minister of health, have been postponed to the glory and glitter of abstraet seientifie renown. The physie of the sehools is too much a sort of intellectual gymnasties: retaining a great deal of that fondness for theoretieal disputations, and that readiness to ehallenge, eharaeteristie of eolleges in the age of the revival of letters. The healing art is stultified by the pedantry of a nomenelature (nosologieal and ehemieal) varying with every new phase and theory of seienee. This enhanees the natural diffieulties of the study, and serves admirably to keep up the mystery of the eraft. The grain is lost in the husk; the shell preferred to the kernel. Nevertheless, Reform has begun. Men are retraeing their steps from the eomplexity of art to the simplieity of nature. Truths long eoneealed under the rubbish of prejudiee, diseountenaneed by fashion, and

frowned upon by authority, are at length making way. A study of the laws of animal life, and the simple natural processes of cure, simplifies the aims of the physician, simplifies the indications, and simplifies the measures of treatment. The faithful observance of the requirements of these laws is chasing drugs from the field, and will render them useless, superfluous, and obsolete; as the farrago of balsams, salves, plasters, detergents, purifiants, digestives, &c., are now exploded in surgery. But, the reverse of what it was before, the efforts of nature are now reckoned primary; the appliances of art, subsidiary. The simple measures of Hygiene, diet, and regimen, are supplanting the vain show, tinsel, and parade of pharmacy. Art may now limit itself to laying down a railway for the progress of nature, and keeping vigilant guards at the critical places, to turn the "points," so that she may keep in the desired course, and reach in safety the destined terminus.

315. Diagnosis, as it is the fundamental, so it is the most difficult, part of the practice of medicine. Herein the genius of the physician is most called out, most needed; and, when successful, shines most conspicuously. Herein lies the source of all

the errors that have disgusted the honest professors of physic; of those endless variations of doctrine and practice that have at all times brought it into suspicion and contempt with the shrewd and knowing. Men talk much—and most of all the old physicians—of medical experience. What was their science? what their diagnosis? A state of knowledge (we speak of the masses of practitioners) in which it was impossible to identify diseased conditions. Learning, (mere book learning,) observation, and experience, were all thrown away on an art of sheer conjecture—medical romancing, it might truly have been called. The upright scrupled, and confessed they were deceived, unwittingly deceived. The dishonest imposed, and persevered in a wilful fallacy, because a gainful error. How, in such a state of matters, could any enlightened and rational deductions be made, as to the effects of remedies, even supposing their remedies to be clear and simple for experimentation; but they were the reverse—compounds the most heterogeneous—ingredients the most incompatible. How could the special management of disease be thus made a branch of accurate knowledge? The ignorance of diseased conditions, or only a doubt about them, vitiates, nullifies all the

results of observation. The experience so founded is false and fallacious.

316. The inherent difficulties of medical science are not lightly to be passed over. It has to deal with a delicate, subtle, sensitive, organized apparatus—an apparatus continually exposed to change, and suffering from its own complex functions, and their sympathies, physical and psychical, within; and to innumerable causes of derangement and decay, without. The external signs and manifestations of hidden, unsuspected, internal disorder—the local lesions which constitute or complicate disease—the material characters, symptoms, course, and terminations, that distinguish resembling or allied diseases from one another—are not the least puzzling parts of the science. Add to these the barren, hopeless, dark domain of drug-experimentation—the uncertain qualities, doses, operations, and combinations of a legion of remedies—take all these in connection with idiosyncrasies, or individual peculiarities of constitution, and we shall not wonder why medicine has been prevented from taking its proper place among the real sciences, or why it cannot be reduced to a certain formula. It is these inherent difficulties of the healing art that have made the profession of

medicine the noble pursuit that it is: calling into exercise the highest powers of gifted intellects, dignifying the practitioner, when it is properly cultivated, as it degrades the art and the man when it becomes a mere money-getting profession, and a mill-horse practice.

317. The healing art is now progressing with rapid strides. It is every day attaining to more and more exactitude, so as to remove the former too just grounds of scepticism. It achieves now too uniform, too palpable success, to permit the field to be any longer the appropriate domain of doubt. Practice is now reduced to simpler aims and principles than ever before; and is, therefore safer and more successful. We have now got a clue to guide us out of the labyrinth of disease; we have attained to certain regulating ideas of philosophic treatment; and practice is found to be proportionally effective. Victory over disease is the rule—defeat the exception. Medicine now boasts a real and mighty efficacy—but that efficacy lies not in drugs. The causes of disease however complicated, the shades and phases of disease however diversified, do not now argue or necessitate a correspondingly multiplied agency of cure. It is not now a difficult or hopeless task to evoke

order out of the chaos of nature's variations, or to elicit truth from the crowd of her conflicting appearances. Hitherto there have been no fundamental principles of practice on which physicians have been agreed. Two different consultations on the same case will end in the recommendation of diametrically opposite treatment. If the constitution has stamina to go through the prescribed courses, the result will be pretty much the same under either. The powers of nature, though, perhaps, for a time overwhelmed by the assault, will eventually assume the supremacy over the powers of art—will shake off the dead weight and drag-chains so placed upon her wheels. Thus cures are said to be effected in the most opposite ways, by means of drug treatment, when it is really in spite of it. The contradictions are reconciled by the various operations of the organism resolving all into one result—operations impeded by the injurious agents, forwarded by the favourable. The most successful practitioner is he who has learned best to appreciate the powers of the organism in resisting morbid agencies, and who most sagaciously turns them to account in treatment. The practical problem to solve is, when to trust solely to the powers of nature—when to employ the adventitious aids of art.

318. The present era is distinguished above all preceding epochs, for its solicitude to improve the condition of the masses—the raw material, and the working-bees, of society. The true interests of humanity are now more consulted than ever. The errors in civic economy, in politics, in morals, in religion, are losing their hold of the human mind. Statesmen, patriots, philosophers, and philanthropists, seem all to unite in one grand object and design, namely, the physical improvement and moral elevation of the people. That which promotes the former will most effectually ensure the latter.

319. There have been two master fallacies in the history of man, handed down from sire to son, and acted on by savage and civilised, from immemorial ages—delusions that have proved more destructive of the species than all the slaughter of famine, sword, and pestilence combined. These are, first, that drugs of some kind or other, and in variable quantities and combinations, are necessary for the restoration of health, sometimes for its preservation. The other fallacy seems to be an embodiment of the principle of evil itself—the deadliest device of "the Father of Lies"—namely, that alcoholic beverages are necessary to the maintenance of health and strength! an excellent means

of counteracting disease ! ! and the best promoter of social enjoyment ! ! !

320. Mankind made a bad exchange, in abandoning water for the stimulating, but deadly, beverage of fermented liquors. A diminished duration of life, and a host of painful maladies besetting life's path, and embittering its pleasures, was the dear price of this exchange. Let the votary of "the bottle" declare, in the last anguished moments of his existence, whether the transient excitement of his cups compensated for the pangs of mind, and the pains of body, they inflicted.

321. That certain of the faculty still persist in recommending the habitual use of stimulant liquors, can only be accounted for on the principle that they recommend to others that which they like themselves. And in so doing they are, doubtless, keenly alive to their own benefit, for the customary use of potent drinks and drugs (ardent in the real sense of the word), must tend to increase their practice many-fold.

322. The temporary excess of action which alcoholic drinks create in an organ, or in the organism generally—the increased momentum they impart to the living machinery—is purchased

at the expense of a corresponding collapse, which necessitates both a repetition of the stimulus, and an augmentation of its dose. The end of all this is, a premature exhaustion of the vital endowments of the frame. The body is used up ere half its time and work are done. To descant on all the forms of organic mischief by which the compact, durable frame, as it came from the hands of the Creator, is gradually disintegrated and destroyed, does not come within our scope here. The catalogue would frighten the veriest sot, and deter all but the really insane.

324. Drams, liqueurs, condiments, spices, and stimulants of all kinds, by irritating the nerves of the stomach, increase the determination of blood to it, which augments the secretion, while it impairs the quality, of gastric juice—causing a morbid sensation of hunger, a false appetite, a craving for which there is no justification or demand in the system. The consequence is, a larger quantity of food is consumed than what is requisite for the reparation of the body, and it is, therefore, never completely assimilated. We say nothing here of the positively poisonous properties of the beverages in question.

325. The aim of every wise and good man wil

be to keep the moral and intellectual faculties in the ascendant. This is impossible under the habitual use of alcoholic liquors. We speak advisedly in this enunciation of a serious conviction. On these unnatural, and brutalizing stimulants, the excess of the animal passions—the impetus to crime—is more dependent than on any moral provocatives. The records of murders, robberies, incendiaries, prostitution, vice, and enormities of all sorts, attest this weighty truth.

326. One remark as to the connection of the Water Cure with the sacred cause of Temperance. The latter requires, for its due and permanent operation, to be indentified with some great public institution, wherewith to be a co-worker for the regeneration of society—so far as human means will contribute to that end. The genius of Temperance, as impersonated in the societies in question, stretched out its arms for aid to the various sections of the professing Christian Church; and, had they come forward, in a body, to co-operate, as they were bound to do, on the principles of the New Testament, (taking only the low ground of St. Paul's "expedieney" argument in an analogous case,) then the axe would have been laid to the root of the tree of the most gigantic evil of modern times. This

coalition, unhappily, the weakness and dissensions of men prevented. The Water Cure, as destined henceforth, to be a permanent institution, takes the Temperance Mission in its powerful embrace. The triumphs of the one will now go hand in hand with those of the other. The facts of science, and the testimonies of experience, alike show how powerful a claim they have on society at large. Here, as elsewhere, the most rational philosophy is the soundest policy. The Gospel, doubtless, will do its own work. The amelioration of the surface of society, at least—the less feverish existence—the sober habits—the health of body—the calm of spirit—the subjugation of the passions—the simplicity of tastes—and the reform of manners, which are the proved results of these two great agencies, will be hailed as the harbingers of a better state of things—of a time when, as foretold by prophets and poets,

> "Exiled,————from earth to deepest hell,
> In brazen bonds shall barbarous discord dwell;
> Gigantic pride, pale terror, gloomy care,
> And mad ambition shall attend her there:
> There purple vengeance, bathed in gore, retires,
> Her weapons blunted, and extinct her fires;
> There hated envy her own snakes shall feel,
> And persecution mourn her broken wheel;
> There faction rage, rebellion bite her chain,
> And gasping furies thirst for blood in vain."
>
> POPE.

327. The condition of the mind intimately depends on that of the body. To be rendered fit instruments of the soul, the corporeal powers must be properly developed and trained. Without this, the most valuable intellectual attainments, and moral qualities, cannot exert their benignest influence, either upon their possessor or others. The training of the body should be made compatible with the highest mental cultivation. At schools and colleges, however, body is generally sacrificed to mind, in the eager and ambitious. But a system that is destructive to the body, cannot be beneficial to the mind. Early prodigies are never found to be late ones.

328. For a people to be healthy, is a great step to their being virtuous. The perversions of thought, the infirmities of temper, the vagaries of the affections, and the fury of the passions, are closely connected with the state of the bodily functions. Crimes are often but the manifestations of a diseased organism; so are eccentricities.

329. Serenity of mind, and control of the feelings —an habitual and equable flow of spirits—are incompatible, in the sedentary or the thoughtful, with high and gross feeding—food and drink excessive in quantity, and stimulating in quality. On the

other hand, sparingness and simplicity of diet infallibly contribute to habitual mental calm and sunshine. Dr. Johnson (the moralist and lexicographer) was constantly wretched and fearful in mind. How far did not this depend on his gormandizing propensities? Had he reduced himself to the diet of Cornaro or Cheyne, or combined the arduous bodily labours with the mental activity of Wesley, very probably we should have heard little of his gloom. The frugalest farers have been the longest livers, and have enjoyed the quietest days. Those who exchange a light vegetable diet for a heavy one of animal food, always become as irascible and impetuous in temper as gross and ailing in body. The high diet of the Court of Charles I. was fatal to Old Parr, who had stamina to have attained a much more advanced age. Franklin laid the foundation of his greatness on the meagerest diet, receiving from it alike strength of mind, and hardiness of body.

330. The cure of man's physical misery, as of his social degradation, lies in his own hands; for with him it remains to abandon the causes of both.

331. The primeval curse of labour was a judgment tempered with mercy. "*Labor ipsa voluptas.*" The toil is the real pleasure in the pursuit of fame

and wealth. Grasped without that, both are but phantoms—*ignes fatui*—false fires that allure only to deceive, to disappoint, if not to destroy. An inactive mind or body, like an untilled garden, grows to weeds. To be slothful is the surest way to expose oneself to the double assault of vice and disease.

332. Indolence, intemperance, vexation, and anxiety, are the most fertile sources of chronic disorders.

333. Care is a great bane of health and happiness. One important manifestation of it is, the absorbing passion for wealth in commercial communities—the rage for speculation and schemes of aggrandizement, which subordinates every other feeling, aim, and interest; and perils every loftier sentiment of the mind. Money is accounted the *summum bonum*. Health and peace, mind and body, are sacrificed for the grovelling gratifications of gain. Thereby the organic equilibrium, the balance of the corporeal functions, is lost. The nervous system is overtasked by excess of exercise, the muscular power undertasked by its defect. Debility is equally the result in both cases. The vital energy is withdrawn from operations for which nature designed it, and devoted to operations nature never contemplated.

334. Man has to blame, then, for his complicated maladies, not the ordinances of his Creator, but his own unnatural social condition and habits. The items of these are endless. We can only here enumerate a few. These are—1st. As regards the poor; their crowded dwellings—their intemperance —deficient cleanliness, diet, and clothing—noxious employments — premature and ill-assorted marriages.—2nd. Among the rich; their luxurious habits—constant and excessive mental excitement —intellectual toil with bodily indolence—violent passions, as ambition, avarice, love, revenge, hatred—and then the morbid states of mind that result in both classes, from their excesses and errors, re-acting on the corporeal functions. By these causes the springs of life are weakened—the nervous energy diminished—thence the circulating and muscular systems, and the organs of animal life (as distinguished from organic life), become debilitated, and the whole system falls into disorder.

335. The source of the vices of the poor lies in the want of suitable places of amusement for their leisure hours. The toil-worn body of the artizan, in the evening, needs rest, and his jaded mind requires stimulus. His habits of dissipation are

almost forced on him by the pressure of circumstances—by the want of home comforts and occupations, which he goes to seek abroad. The most effectual way to wean him from these habits, is to refine his tastes by suitable education, and then give him facilities for indulging them. This suitable education implies with us, moral culture, as well as mental training.

336. Man is the author of his own miseries. God made all things good, and intended them to be sources of happiness to his creatures. So they would be, even in a fallen world, if the laws of the constitution of things were studied and observed. It is only the infringement of these laws that converts the boons of heaven into banes—blessings into curses. The existence of moral evil, corporeal disease, and death, when rightly viewed, squares admirably with the Divine benevolence. All truths, those of revelation and of nature, when rightly understood, and properly applied, are consistent with themselves—never conflict, never contradict each other. The discrepancy is in our own purblind reason.

337. The laws regulating the material world—even those of the little world of man's wondrous body—are like those of the moral government of

Deity, uncompromising, unchanging, universal. They may oft be tardy in their revenge. They suffer long, in the case of man's much abused body —and are kind. But the retribution, though late, is certain; though silent, is not the less signal, and does not leave itself without witness.

338. Nature, or God in nature, it may be safely affirmed, has kindly provided for the wants of all created beings—and, especially so, for his noblest offspring. To man, the Deity has been above all liberal. Endowed with superior organization, as with superior intelligence, he is formed to reap the highest happiness from the mere exercise of his physical, mental, and spiritual powers. But, as society is at present constituted, he dearly achieves, and scantily enjoys, the grand results of his enterprise and civilization. His days are shortened, and his existence blighted, by the very refinements with which his intelligence has surrounded him. Disease in a thousand shapes, assails him at every turn, and dogs his steps through every lane of life. Thus, the means furnished to him for the purposes of the purest happiness, are converted into instruments of misery, and become avenues to death. But are the dispensations of the Creator, therefore, to be arraigned?

Just in proportion as man departs from nature, nature departs from him; and by a sort of fearful retaliation, withdraws the aid she otherwise renders to all who cherish her unfailing resources.

339. In thus pointing out how the artificial habits, wants, and restraints of civilized life, are all at variance with the laws of man's organism, inconsistent with his health, and opposed to his happiness—let us not be misconstrued as pleading for a return to barbarism. Far be the thought. But to ensure health, man must alter his modes of life, and conform to the behests and purposes of nature, evident in his organization. Amid the refinements of civilized society, a return to the simplicity of nature's ways and wants, is both practicable and safe—will neither lower a man's social position, nor lessen his professional usefulness—will neither create present discomfort, nor entail future mortification.

340. By restricting ourselves to what nature requires—by eating to live and not living to eat—by ample exercise of our limbs—by pursuing health in the open fields at some time of the day—by quaffing of the ever-living fountains—by eschewing the enjoyments of indolent repose, of heated rooms, of cozy garments and stimulating

drinks—we shall lose our paleness, nervousness, dyspepsia, hypochondriasis, etc., and come to resemble, in strength and endurance, the hardy natives of our northern islets. We shall cease to dread, on every exposure, the invasion of chills, and colds, and damps, and all the fell cohort of inflammations, fevers, coughs, consumptions, and rheumatism, by which man pays the bitter penalty of nature's violated laws.

341. It is only when the blood circulates freely and purely—when every limb and every muscle obtain their due and daily exercise—when the stomach receives no food but what is prompted by appetite, and purchased with toil—when content of mind and calm of passion remove all worry of brain and fret of feeling—it is only then that a buoyant tone, vigour, and elasticity, are felt to pervade the entire physical frame—that the harmonious play of its wondrous mechanism yields, of itself, inexpressible joy; that man feels mere corporeal existence to be a blessing, and revels in the delicious sensations of flush health—a feeling in which, though material, the mind largely participates, and by which the thoughts are, as it were, instinctively sublimated.

342. Man, in wandering from simple to sophisticated habits, misses the true path of pleasure—

quits the substance for the shadow. Nature will not be baulked, will not willingly yield her rights and be supplanted by art. The slight she receives she returns. In this case, she revenges herself by increasing desire, but withholding gratification. The warfare with her is expensive, fatal—not to her, but to her adversary. He reaps the fruits of his folly in painful diseases, weakened nerves, impaired digestion, mental gloom, and premature decay.

343. Art and refinement nowhere so much show their antagonism to nature and simplicity, as in the pains taken to vitiate (to poison, shall we say?) the food and drink of man—the device of the creature perverting the design of the Creator. Invention is put upon the rack to torture the "good creatures of God" into meats and drinks that only minister to a morbid palate, if they do not pander to more depraved propensities. These aliments, instead of gliding smoothly through the channels and reservoirs of life, put on nature a load she cannot dispose of, and overtask the functions to expel an intruder—concentrating on the organs so occupied, the vital energy that ought to have been shared alike by all. Nature, at length, becomes unequal to these reiterated efforts. The

springs of life, being overstrained, get weakened: the nervous energy is diminished; thence the circulating and muscular systems lose tone: the machinery by little and little gets into irremediable disorder: drugs afford a temporary relief, but leave behind the seeds of relapse, till a sudden or lingering death closes the unavailing struggle.

344. The evil here dilated on, unfortunately, does not end with death. A corrupt tree cannot yield good fruit. The sins of the fathers are visited upon the children. From a diseased parentage springs an unhealthy progeny, a race born to suffer; and doomed, in their turn to taint the fathers and mothers of many generations.

> Ætas parentum, pejor avis, tulit
> Nos requiores, mox daturos
> Progeniem vitiosiorem.
>
> Hor. Lib. III. Od. 6.

345. Health is more frequently undermined by the gradual operation of constant—albeit disregarded—causes, than by any great, marked, and accidental exposures. The uniform and careful observance of the laws of the organism is, therefore, the great security for the continuance of health.

346. Deleterious influences, though not always

sensibly operative at the moment, in reality impair health, and abridge life, in exact proportion to the exposure.

347. The comfort and the continuance of life depend on unremitting attention to minute matters. Taken singly, these may appear trifling—in the aggregate, they are of prime importance.

348. If the means by which health is regained be observed, as to the spirit of them, there is no reason why the benefit thus gotten may not be perpetuated, until the gradual decay of the functions in a green old age shall, almost unperceived, herald the approach of dissolution.

349. Long life is not necessarily connected with robustness of constitution. The vitality of an individual relatively or absolutely may be weak; but, if the waste do not exceed the powers of repair, the machine will work well and long. The powerful steam engine wears out sooner than the delicate watch. By good use of the body—by proper discipline of the mind, and control of the appetites—a feeble constitution may last as long as a strong one; and assuredly it will afford its possessor higher sources of enjoyment (not to say means of usefulness), than a strong body with a weak mind, or ill-regulated passions.

Certain invalids always remain invalids, from an original organic deficiency, or innate constitutional feebleness. These, however, compose the smaller class. More are the victims of bad health, from their ungenial position in society, or from the nature of the labours they are subjected to. But by far the majority of those who suffer, owe their bad health to controllable causes, which they fail to avoid, by reason of their ignorance, apathy, appetites, or passions.

350. The condition of man, by the eternal law of progress, has been destined continually to improve. His life should become longer, his health firmer,, his days happier, with the advancement of society. Where the fact shows the contrary, the cause is in himself. Man has been unfaithful to himself.

351. The discoveries of modern science, and the matured arts of life, tend, directly or indirectly, to increase the comfort and to extend the duration, of life. Although immense room for reform still remains, upon the whole, the improvements, present or prospective, in matters of diet, drink, cleanliness—the superior size, ventilation, drainage, and sanitary arrangements of houses and streets—the better supplies of food, clothing,

and fuel, for the labouring classes—with the more skilful management of children and training of youth. All these afford the presage and the promise, that human health and longevity will be so superior to those of former ages, as to give the chance of at least one-fourth greater average duration of life. Yet many of the "means and appliances" of modern art counterwork this tendency. Luxury will subtract what science will add.

352. If modern science has disarmed small-pox of its terrors, why should it be deemed visionary to expect the host of fevers, inflammations, consumptions, asthmas, dropsies, baleful humours and taints—as scrofula, cancer, &c.,—to be exterminated, or nearly so, by the hand of skill—by the progress of scientific improvements?

CONCLUSION.

353. The aim of every right-thinking physician should not be the mere triumph of his peculiar sect, system, or opinions; but how, to the greatest possible extent, to alleviate the sufferings of his fellow creatures; how most largely to prevent, how most speedily to cure, disease. In seeking

the accomplishment of this end, it is for him, legitimately, to discuss the routes pursued, the rules acted by, and the weapons used.

354. A man's first duty is fidelity to himself,—negatively, the refusal of his mind's assent to parties, and forms, and fashions, and dogmas, merely because prevailing and applauded; and positively, the exercise of his unalienable right of free thought, as well as free action, where such does not compromise the right of others. Let free discussion, free publication of opinions, take their course, and who shall doubt of the ultimate triumph of truth and right—of the emancipation of mind and body from the enslaving trammels of fashion and custom, and the debasing domination of interest and authority?

355. The faggot and the rack are no longer the magisterial arguments for silencing the assailants of antiquated systems, for coercing the nonconformist in religion, or converting the sceptic in science. That divine charity, which is the bond and seal of brotherhood, and due as a birthright from man to his fellow, is claimed and granted pre-eminently for matters of opinion. It is not now, we trust, as it was of old, an occasion of contempt, obloquy, and antipathy, to hold opinions

different from the received, the orthodox, the dominant. But if opinions challenging investigation, and pregnant with public benefits, be the honest convictions of their supporters, arrived at after calm and cautious inquiry—if, moreover, they be proved to be sound principles, founded on truth and nature, and receiving a warrantry from science—then we claim for them higher consideration than mere tolerance.

356. The present era is the struggle of light with darkness, of receding ignorance and barbarism with advancing knowledge and civilization. It will, therefore, be a time of the awakening of human passions. For precisely on what points men's interests lie the greatest, their passions run the strongest, when any shock or change comes to jeopardize the former and to rouse the latter. Fear and hope, the most powerful stimulants to action, we accordingly find most excited on questions of religion, politics, and physic. Just as belief or unbelief predominates, will sound conclusions, valid reasonings, and authentic facts be thrown away, or be appreciated, in evidence, by that public tribunal to which the appeal is made. What the mind cannot see, or will not see, imagination will pervert, distort, exaggerate, invest with

false colours, and environ with ideal dangers. The mental bias thus superinduced in an adversary may go so far as not to concede to an advocate either conscientiousness of intention or candour in act. From such we turn away to appeal to men unprejudiced, dispassionate, and open to conviction. The question, therefore, whether the burden of fact and philosophy be for or against the Water Doctor—we leave to the faithful award of this candid class of readers. In either case, whether our cause fail or triumph, we care not, so that truth be vindicated, and the best interests of our fellow-men promoted.

357. The exponents of new doctrines and practice, the teachers of truths that are in advance of the times, must not seek to parry opposition, by depressing themselves to the level of their contemporaries—to conciliate prejudice, or to ward off persecution, by diluting and disparaging their principles; they should rather seek, by every means, to raise their contemporaries to their proper standard, morally and mentally, so as to qualify them for coadjutors in the good work of reform.

358. Not only motives of pure philanthrophy, but a spirit of patient forbearance and of rigid philosophy, must actuate the heralds of progress.

They must bear, and be content, to have all manner of evil said against them falsely. They will be aspersed as renegades from the true ranks, as disappointed men, as seditious, as openly advocating charlatanry, as wishing to play on the credulity of the public, as outraging integrity, as embracing new systems for selfish ends, as retailers of novel doctrines set forth to entrap the unwary, as persons anxious only to sacrifice the public interest to private cupidity! Even if candour grants them to be honest in intention, the saving clause will be added, that they are weak in judgment; and either deceived by false facts, or led away by specious theories! Such are the common-place allegations of opponents. But the pioneers of needed reforms will reck little of calumny and falsehood—of the censure or resentment of the ignoble, the ignorant, and the interested.

359. As for the writer himself, he is actuated principally by the desire of doing good. A zeal to promote the science, and to improve the practice, of his profession—to give accuracy to diagnosis, and simplicity to treatment—has dictated his every effort, since his first work,*

* "A Treatise on the Organic Diseases of the Womb." Longman and Co.: 1836.

written entirely with these views, some twenty years ago. A radical change is needed in medical practice, and it must come. Till then all attempts at reform in the body politic of the profession, are absurd in principle, and will be futile in effect. The corruptions referred to, as degrading a practical art and its professors, are the real causes of their want of due standing in the public estimation. Make the tree good, and its fruit will be good. The whole fabric of Medicine, as a curative art, must be changed. The powers of nature must be more studied, more solicited; the powers of art less respected, less trusted. The object to be accomplished is no less than founding a new era in the history of healing. The too valid grounds for medical scepticism must be destroyed. Truth must be divested of the errors that cling to it, that disguise it, that deform it, that weaken it. The seeds of the change sought must be sown in men's minds. The beaten track must be abandoned. The practice of a divine art must be rescued from being a degraded trade. We must roll away the reproach of any longer floundering in the slough of a conjectural art. We have enough of solid materials of science, and exact

principles of art, on which to build a feasible reform. Time, however, must be granted; while many earnest and enlightened minds must labour zealously in raising the superstructure.

360. An accurate knowledge of the operation of remedies—a study of the laws of animal life, and of the powers which regulate the system—careful observation of the material characters of disease, its course, and terminations—an advanced science of diagnosis—experience and acumen in tracing the origin, seat, nature, and tendency of bodily derangements—skill in the use of simple but effective weapons of art, with positive rules of Hygiène and Dietetics—are the grand requisites of this practical reform, and, when obtained, will remove the long opprobrium of medical art, will obviate its uncertainties, meet its difficulties, testify to its reality, and conciliate faith in its profession and practice. We duly appreciate, and profoundly respect, the high talents of former writers and practitioners. Nevertheless, theirs was but the science of guessing—a chaos of error—a melange of facts and fictions. A crisis is now come for Medicine. In the ferment and collision of men's minds, this good will arise—the scum will come to the surface.

361. The want of an *esprit de corps* in the medical profession—the absence of union, and mutual confidence in their intercourse—their unamiable feelings towards each other—their extraordinary irritability, and mutual jealousy, have brought the "order" into contempt, impaired confidence, and entailed suspicion. This, therefore, in the present instance, will destroy the moral force of their opposition. Their squabbles, so perpetual, and often obtruded upon the public, are without a parallel in any other liberal profession. Strife and variance, envy, hatred, malice, and all uncharitableness, ill become the priests and ministers of a divine art which should only deal in peace, mercy, and good-will to men. He who degrades a colleague, or attempts to raise himself upon the ruins of his reputation, degrades, at once, himself and his art. The ripping up of one another's faults, foibles, and errors, evinces bad judgment, bad policy, bad taste, and bad temper. Mere self-interest, in the absence of higher principles, should band them together. If, however, the old school practitioners be chargeable with unbrotherly heart-burnings, some extenuation for it may be found. But the Water Doctors have no

need, and no occasion, to be so chargeable. With the former, the profession is crowded, and competition excessive; with the latter, it is far different. For them, at least, the world is wide enough; let them practise the old maxim of "Live and let live," and let the disciples of the new school be free from the reproach which has fallen upon the old.

362. These remarks, called forth by the necessities of the case, must not be regarded as a depreciation of the medical character. With all its drawbacks, and all its faults, the profession has embraced in its ranks some of the best men that ever adorned and blessed the world—men filled with the noblest enthusiasm for the interests alike of science and of humanity. We shall not magnify the office and the character too much, by inserting here, in conclusion, the *beau ideal* of a good physician. He who aims highest, will approach nearest to perfection; and, however short we may come of the standard ourselves, we shall not regret our labour, if it only have the effect of setting up a mark whereunto the rising and future generations of practitioners may seek to attain.

363. The good physician lives only for the welfare of his fellow-creatures. The fame he seeks is humble, honest, legitimate — that of relieving

suffering, and preserving life. He strives after truth, not for his own delight and improvement solely, but for the benefit of his species. In serving others, he spends himself. He acts chiefly from a sense of duty to God, and love to his neighbour. His mind is expanded, and ennobled by a knowledge of Man, in the largest sense—his form and functions, his structure and constitution, the laws that regulate it, and the different powers that act on it. He is a philosopher as well as a physician. His studies embrace the wide range of nature's works, and of the sciences as embodiments of nature's laws. He views man only in his connexions and mutual dependencies with the rest of organised beings—as part and parcel of one grand whole. His acquaintance with disease—its characters, course, and variations—enables him to foresee and foretel the issues of life and death. His intercourse with the sick is as the visits of a guardian angel. Benevolence and gentleness are in his bearing, yet earnestness and energy mark his measures. Courage, presence of mind, close attention, unaffected interest, deep sympathy, perfect candour, simple manners, sound mental faculties, and pure moral feelings, are his characteristics. He is above nothing that may, in any

way, conduce to the relief or restoration of the sick. While, in painful and trying conjunctures, he shares in the sorrow of the house of mourning, his compassion for suffering does not impair his judgment, or unnerve his arm. As he tempers tenderness with firmness, so his directions do not lose their effect, nor his authority its weight. He hits the happy union of the *suaviter in modo* with the *fortiter in re*. His practice in emergencies, when decision and promptitude can alone save, is as far removed from timorousness, vaccillation, and temporising, as it is from rashness. By his ministrations, melancholy, despair, *tædium vitæ*, irritability, peevishness, unreasonableness, recklessness, dissipation, whimsicalities, eccentricities, and all the other demons of disease, are rebuked and evanish; while hope, confidence, serenity, cheerfulness, enjoyment of life, common sense, the love and practice of virtue, and the solaces of religion, take their place. His self devotion in times of peril is far greater than that of the warrior in the battle-field. The din and tumult of arms, "the pomp and circumstance of war," do not excite his brute courage. With equal daring, and more coolness, he mingles benevolence. He sacrifices himself to save a fellow-creature. When stouter hearts

are appalled, and flee from death's carnage, he coolly maintains his ground; taking his stand, unmoved, between the living and the dead, to stay the plague; with unwinking eye and unquivering arm, braving its terrors and bridling its virulence; exercising his noiseless duties unnoted, unlauded, unattended, save by the presence of a Redeeming Spirit, which, unseen, guards him—covering his head as he follows the steps of the destroying angel—and preserving him unhurt amidst the deadly miasm of "the pestilence that walketh in darkness, and the destruction that wasteth at noonday." This exposure he encounters manfully—not for worldly honours and emoluments, for stars or garters, for parliamentary thanks or pensions, for national tombs or testimonials, but for a simple maintenance in a plain, unobtrusive sphere. His devotion he deems the mere call of duty; and as such, he expects no out-of-the-way rewards. His recompence is not chiefly pecuniary—the end of his labours not solely personal aggrandizement. The claims upon him, as a good citizen, he reckons to be far higher; his readiness to contribute to the general welfare he limits not to considerations in kind. His services are acknowledged—the obligations of patients not discharged—by the *quiddam*

honorarium. Although his whole heart and intellect, his body and soul, are devoted to his profession and the service of the public, yet is he not secure from heartless private animadversion and fickle popular favour.

APPENDIX.

PRINCIPLES OF HYGEIENE — PRECEPTS FOR THE PROMOTION OF HEALTH, AND THE ATTAINMENT OF LONGEVITY.

To cure diseases, or to alleviate those that are incurable, is not the sole function of the physician. The task of teaching how to confirm and preserve health, amid the multitudinous influences at work in society to impair or destroy it, is, perhaps, a more important part of his mission; inasmuch as the prevention of evil is better than its removal. To point out the conditions on which the health of individuals and communities depends; to reveal the errors of conduct in infancy, childhood, youth, manhood, and maturity, which destroy the constitutions and blight the prospects of countless myriads, is an extension of his field of usefulness, which more dignifies the physician, and more exalts his art, than the fruitless search for nostrums, or the hap-hazard experimentation with drugs.

To ignorance of the human organism, and to the violation of its laws, may be attributed the ill health and unhappiness of every period of life—the diminution of its enjoyments, and the abbreviation of its term.

The principles of physiology must dictate the precepts of hygeiène; and the sanctions of practical experience, in its turn, must be invoked to confirm the soundness of abstract precepts.

The conditions of health are subjected to the same general laws that both religion and philosophy unite to prove to be the ordinary principles of the Divine administration, alike in

the departments of nature, providence, and redemption. Obedience to constituted laws or conditions is invariably connected with appropriate benefits: infringement of tenure is punished with forfeiture of privilege; and just in the degree and of the kind of the condition violated. This is a generalization which neither the ingenuity of sophists nor the casuistry of bigots can shake; and alike glorifies the work, and vindicates the ways, of the Creator.

It may be safely affirmed that man entails his own disorders. A violation of the laws of his organism—of the conditions necessary to the due play of all its functions—whether wittingly or unwittingly committed—is visited with the penalty of disease and premature death.

With bodily health, mental and moral health is intimately associated. Mind is dependent for its manifestations on the condition of the material organization with which it has pleased the Almighty to ally it in this life. Defective energy or structure of the one leads to faulty evolution of the other; as an unstrung or injured musical instrument fails to elicit its due tones. Irritability of body disposes to irritability of mind, and both influence, unfavourably, the moral feelings. A fit of indigestion will often becloud and make irascible the serenest mind.

The habits and modes of artificial society—the love of luxury—the culture of the intellectual at the expense of the physical powers—the pursuit of wealth—the cares and reverses of trades and professions—the moral excitement of public controversy in politics, religion, and literature—the unbounded play of the passions, love, hatred, jealousy, anger, sorrow, hope, and fear—the excess of meats and drinks of a stimulating nature—the addiction to drugging—the vitiated air of towns and manufactories—are all so many sources of acute and chronic maladies that abridge and embitter existence, because they involve departures from the conditions of health.

This state of things cannot be done away with, although the evils deplored might be greatly mitigated by the diffusion of proper head-knowledge, as well as by the obtainment of sound heart-principles. The subjugation of our appetites and senses is a moral triumph that will lay the foundation of physical as well as intellectual strength. Courage is requisite to forego accustomed gratifications, and to brave the

reproach of singularity; but the benefits of abandonment will soon repay the pains of self-denial, and a temporary discomfort will be the purchase of a permanent blessing. To simplify our habits, and limit our wants, will be found the surest way to diminish our cares, and to increase our comforts. Yet we must not be misconstrued as countenancing austerity or asceticism, much less as insisting on it as a requisite. The food would then absorb greater care than the body, and the raiment than the life; and health would bring with it as great privations or punishment as disease.

Health and longevity are within the reach of almost every individual—at least of those possessed of average soundness of organism – if he will but study and enforce the means and conditions thereto, established by the Divine architect of our frames. That three-fourths at least of human beings should die in childhood, and a moiety of the rest in early adult life, was surely never an ordinance of the Creator; although the individual losses are often wondered at, and classed by a piety more sincere than enlightened, as instances of the mysterious designs of Providence!

The well-being of man comprises his physical, moral, and intellectual condition. To discuss the two latter branches belongs to other professions. We proceed to lay down the general principles and precepts that are to regulate the former. Modifications of these may be necessary, according to individual cases and constitutions; for no general rule can comprise all particularities. The great requisite for those anxious to regain and perpetuate health, is courage to commence, and perseverance to continue in, a right course. The love of life will supply the one; returning health will stimulate the other.

DIET.

What is the most feasible theory of the phenomena of digestion? Fermentation, in the light which Liebig's admirable researches have thrown upon it. The vermicular movements of the stomach are a mere mechanical help.

It is a law in Dynamics that a body or atom put in motion by any power will propagate its motion to bodies or atoms in contact with it, unless the resistance opposing the motion, as vitality, chemical affinity, electricity, cohesion, &c., is sufficient to arrest the motion imparted.

The alterations in the forms and properties of bodies which occur in chemical combinations, are referable to this law—to the state of motion or transposition into which are thrown the atoms or ultimate elements of bodies; in this way all the molecules in contact, or within the sphere of the change, arrange themselves into new forms or groups, and entirely alter the nature of the product. This is the principle of fermentation. All organic substances, as soon as they pass into a state of decomposition, determine these molecular changes, that is fermentation: the precise products of fermentation alter with the temperature, and with the stage of their transformation. At a certain stage, they possess the power of breaking up and dissolving various alimentary substances.

Animal membranes—the mucous membrane of the stomach—in certain conditions possess the power of producing these changes—of dissolving solid animal matters. The gastric juice owes its solvent power to the hydrochloric acid it contains; combining with the decomposed outward layer of the stomachal mucus, it forms a fluid that essentially corrodes, eats away, and liquefies the aliments. A very weak solution of this acid in warm water, with the addition of a small portion of calf's stomach, forms a mixture like gastric juice—an artificial digestive-fluid, which has the same solvent power over aliments out of the stomach (exposed to its action for a few hours at 96° of heat), that the other has over aliments in the stomach. If we were inclined to recommend any medicinal resource to invigorate weak digestive powers, it would be most assuredly this very simple and efficacious digestive-fluid. If it will dissolve fibrine or coagulated albumen out of the stomach, *á fortiori*, it must dissolve them in the stomach.

I. The improper management of diet is the source of many diseases, and the bar to many cures. The errors of diet are more frequent on the score of quantity than quality, and in respect to the circumstances under which it is taken. The instincts of nature in man's present artificial state are blind, and perverted guides. Appetites are sophisticated; and the natural relations between the senses and the objects that impress them, are destroyed or vitiated. Experience must now supply the defects of instinct, and science must dictate the principles of dietetics.

II. The object of aliment being to repair the waste of our

tissues, and to afford the materials of their recomposition, its relative quantity and quality must have reference to the relative waste of the several periods of life. The absolute amount of food necessary is regulated by the absolute waste from the efforts exacted of the system—the power of the stomach, and the craving or demand it sets up.

III. The vigour of the digestive functions is, *ceteris paribus* n proportion to the vital energies of the individual, the size of its organs, and the degree of labour habitually imposed upon them.

IV. The food that is most conducive to health must be partaken of with moderation, and at regular intervals: leaving after it an agreeable repletion, without sense of fulness, load, oppression, or fatigue, and the bodily and mental energies equally recruited.

V. The cardinal rule for weak or dyspeptic subjects to avoid overloading the stomach, is, to eat slowly, to masticate thoroughly, and to attend carefully to the first feeling of satiety—the first intimation of repletion. The relish given by the appetite then ceases; and every mouthful after this accumulates materials more than the stomach can master, and which will oppress and annoy for hours, incapacitate for the due digestion of the next meal, and probably disorder the system of the susceptible for days.

VI. The habit of immoderate eating developes the powers of the stomach at the expense of the activity of the brain, the senses, and the muscles.

VII. The general sympathy of the organism, which associates the weal or woe of one part with that of every other finds a centre, so to speak, in the stomach. It supplies the part of an index, for the others to intimate their want of nutritive materials.

VIII. Most persons eat more than is requisite or good for health. The stomach and the humours of the body are equally surcharged—the supply far exceeds the waste: elements accumulate in the system which should be eliminated: unhealthy plethora ensues. The faculties of the mind are blunted, and the seeds of innumerable diseases are sown.

IX. Once for all, let it be premised, that in all that concerns diet and regimen, there is no absolute rule for individual guidance. It is impossible to lay down general rules that will apply to every particular case. The part of the

physician is to establish general principles, from which particular rules must be deduced for special cases. The attempt to mete out diet by weights and scales, or to erect a universal standard of quantity or quality, would be as ridiculous as to promulgate an invariable size of hat, or a fixed shape of coat cut out on mathematical principles.

X. Uniform regularity in the times of taking food is as important as its quality or quantity. Due attention to these points is an indispensable condition of the recovery of health in the valetudinarian, and of its maintenance in the strong.

XI. All complicated combinations of food are to be avoided: as at once unwholesome in themselves, a sophistication of the palate, and a temptation to excess.

XII. As the appetite is regulated by habit, with stated hours the desire for refreshment, and the proper appropriation of it, will return: the meal-times—their periods and frequency—are, therefore, all-important. Protracted fasting, as well as too frequent eating, are equally injurious. The meal-hours of the Water Cure system cannot be improved: rigidly carried out, they will be found the most suitable for health, and probably the most convenient of any other hours, either for business-intervals or household-arrangements. It avoids an unduly substantial meal at one time of the day more than another; and prevents the oppression and *inertia* produced by a heavy meal when the stomach is weakened after a long fast: as happens with those who starve all day, and take a late or large dinner or supper—a bad practice in every way. To prove how much the vigour of digestion is impaired by too long inactivity of the stomach, a person in good health has only to omit one of his meals: the subsequent repast, even of the usual quantity, will incommode.

XIII. The appetite is never natural, nor the digestion perfect, till the contents of the last meal are passed out of the stomach, and the ulterior stage of digestion is accomplished. If this subsequent process (*chylification*) is imperfect, or unfinished, natural hunger will not return, and the next meal, if indulged in, will over-load. This is the reason why, after a full meal of nutritious viands, or after an excess that oppresses, the appetite is slower to return—the disinclination or disrelish for the ensuing meal should be respected. If it be not respected, a double error and mischief are committed: namely—first, the interruption of the assimilation of

the last meal; and, secondly—the arrest of the functions of the stomach, taken at unawares and disadvantage-alike unprepared and indisposed for the labour so unseasonably imposed upon it. Priessnitz's hours of diet, and the intervening exercise they allow, are the best guarantee for the perfect assimilation of one meal before another is taken: and the assimilation is accomplished not too long before the next meal comes round, to produce faintness before or oppression after food.

XIV. The first part of the process of digestion, namely, its solution and trituration in the stomach—the reduction of the mass of the *ingesta* to a homogeneous pulp (*chymification*)—is facilitated by rest, partial or entire. It is advisable, therefore, to avoid especially any violent exercise for an hour or two after a meal—especially the chief meal.

XV. The fulness of the meal an individual may indulge in, is to be determined by the amount of previous exercise taken, the state of health, and the vigour of the digestive powers.

XVI. As a general rule, people, and especially delicate people, should never eat freely in a state of fatigue, or immediately after hard exercise. The nervous energy that has been diffused over the system, and spent in muscular efforts, must have time to accumulate and concentrate itself upon the stomach in order to proper digestion. Half an hour's or an hour's rest should always precede a meal under these circumstances.

XVII. The interval between meals—when the stomach and duodenum have been relieved of their load, and the new chyle is entering the general circulation—is the best time to indulge in, and profit by, active exercise. Muscular energy is then at its maximum, and its free scope accelerates the last stage of digestion, and completes assimilation.

XVIII. The interval of the meals is the fittest time for the reception, into the system, of the water necessary to repair the waste of the fluids. The stomach having then, in a great measure or altogether, disposed of its load, is prepared to receive a few copious libations of cold water, to dilute what remains, to carry off superfluous matters, and to supply new materials for the functions of the kidneys and skin.

XIX. The allowance of liquids to meals is a much con-

troverted point. The strong stomach may take them with impunity, or find them absolutely indispensable, especially if the contents of the meal are solid. In the weak, much fluid relatively will unduly distend the stomach, weaken its coats, and absorb the gastric juice; thus hindering the formation of the chymous pulp, both by impeding the vermicular movements, and by diluting the glandular secretions.

XX. Breakfast. To enjoy and digest well this meal, the individual should be abroad early (six o'clock at latest), and spend two hours at least in active exercise; and should, by copious libations of cold pure water, have repaired the waste of the fluids lost in perspiration, and other excretions, in the night-time—corrected the acrimony of the secretions, and the taint of the breath oft perceived in the morning—washed out his stomach and rinsed out the circulating vessels, as well as attenuated their contents. After half-an-hour's repose, within doors, let him then breakfast, and he will do so to his heart's content, keeping always in view the prime axiom, "temperance in measure and simplicity in kind." The fewer luxurious gratifications indulged in the better for fulfilment of the prayer of Juvenal, and the desire of all wise men, "*mens sana in corpore sano.*"

Such a commencement of the business of the day will "set up" any man in moderate health for the rest of it; enabling him, with clearness of head and steadiness of limb, to go through any rounds of public or professional duty; and both to relish and digest his subsequent meals.

XXI. Dinner. An hour or two after mid-day is the most natural time for dinner: being a sufficient interval between the morning and the evening meal, to admit of the assimilation of all the three, without interfering with each other; avoiding the extremes of frequent or too distant meals; and lightening the hours of repose, by the finished toil of digestion.

XXII. Supper. The afternoon repast of tea may well be replaced by a few draughts of cold water, which will better dilute the remains of dinner, and prepare the stomach for a substantial evening meal some hours before the time of rest draws on. Retiring to bed with a full stomach is not wholesome. The exhaustion of the vital powers by the pursuits of the day, as well as by the ceaseless operations of the complicated machinery they subserve, demands this concluding supply to eke out the renovating powers of sleep.

XXIII. The stomach of man has greater power of accommodating itself to varieties of diet than that of any other animal. It has been a long-agitated question, whether the lord of creation was designed to be a carnivorous or gramenivorous animal. This dispute can only be settled by an appeal to the structure of his digestive apparatus, which shews that he is neither exclusively, but omnivorous in his appetite and capabilities. He can equally dispose of animal or vegetable food in all its diversities and admixtures, or either the one or the other exclusively: a due mixture of both, with a predominance of the latter, is found most conducive to health and strength. Climate, season, habit, age, exercise, individual peculiarities, decide the choice. An exclusive diet of fresh animal food by no means affords the same nourishment as an exclusive diet of vegetable food. The testimony of many travellers, and of the explorers of the arctic regions, confirms this fact. The Esquimaux are examples of the one kind of diet: the Hindoos of the other There is no proportion between their physical powers. The predilection for these respective diets is in virtue of a law which adapts man's constitution to the climate he inhabits.

XXIV. Vegetable food is less easily assimilated, transformed into nourishment, than animal food. In poor subjects—poor of flesh—thin of blood—cold of constitution—in persons of weak digestive powers, subject to flatulence, acidity, pain of stomach, and water-brash—in the leucophlegmatic, those of pale, puffy, and flabby fibre—in the inhabitants of damp marshy soils—in those enduring exhausting labours—in the residents of crowded alleys and ill-ventilated houses—in all these individuals, vegetable food, at least a predominance of it, is improper: it imposes too much labour on the digestive organs to transform it into nutriment.

XXV. The plethoric, the sanguine, the bloated, and the inflammatory—those whose facility of making blood, superabundant humours, and high condition, keep them on the verge of fever, and dispose them to local sanguineous congestions, apoplexies, and pulmonary hæmorrhage, must abstain from succulent animal food, and be content with meagre vegetable diet.

XXVI. A due admixture of the most nutritious animal and vegetable food, combined with graduated and sustained exercise—with simple water for drink—will bring the body

into the highest physical condition. This constitutes the art, and produces the results, of training.

XXVII. Food should never be eaten in a highly concentrated form, that is, containing the nutritious elements, unencumbered with what, for want of a better name, we call husk. A certain weight and bulk of the aliments received into the stomach is a necessary condition to good digestion. Nature never produces nutriment in a concentrated state. The grain is combined with the chaff and the straw. The sugar, the acids, the mucilage, and the oil of fruits, is united with farinacious, and fibrous principles—husk! Animals fed for some time on these highly concentrated forms of nourishment become ill and die. Even horses fed on the unnatural and highly-condensed provender of oats and beans, are subject to various ailments. Let the hint suffice to trainers of horses! The dogs of Magendie's experiments, fed exclusively on sugar, olive-oil, gum, and butter, with distilled water, though well nourished for a time, all drooped and died under the diet.

The same principles apply to the diet of man. Food containing the nutritious principles too combined, without sufficient farina, is unwholesome. There must be a due admixture of farina, bread, potatoes, or other less concentrated aliment.

XXVIII The nutritiveness and digestibility of a substance are not synonymous or transferable terms, but denote very different principles. The latter is, generally, in the inverse proportion to the former. The one is dependant upon its chemical constitution; the other upon its mechanical cohesion. These qualities constitute the test and value of the different articles of diet.

The mechanical cohesion—the texture of alimentary substances, more than their chemical composition, influences their digestibility, and necessitates the art of cooking. The solubility of substances must not be confounded with their digestibility: pure gluten, mucilage, or oil, is very soluble, but very indigestible. The firm or tenacious cohesion of the particles is a great obstacle to the digestion of certain kinds of food; as also the want of a certain degree of cohesion. To destroy this when in excess, to impart it when a defect, to change the sapidity and the odour of substances, the processes of cookery are invoked.

XXIX. The nutritive principles of animal food are —*fibrine, gelatine, albumen, fat, and osmazome.*

Fibrine is the most nutritious: it is the muscle of the animal. Hence mutton-chops and beef-steaks afford large nutriment. The blood, also, as abounding in fibrine, is highly nutritious.

Gelatine is the next nutritive principle of animal food. It is the essential element of skin, membranous tissues, tendon, and bone, when its earthy part has been removed. Its use is, therefore, to build up these organic structures. It is the predominating principle in young animals. Alone, it is a poor nourishment, and requires the correction of high seasoning. It will, however, afford adequate support to plethoric and bilious persons who do not take much exercise; but it is not sufficiently stimulant for leucophlegmatic habits.

Albumen (coagulated) and fat are highly nutritive principles; taken alone, they require considerable powers of stomach for their digestion. Articles of food, in which albumen predominates, as eggs, oysters, fish, shell-fish, the blood and brain of animals, are easily digested and restorative—are suitable to persons of feeble digestion, to convalescents, to old men, to the studious and sedentary, to delicate women and children.

Osmazome is that which communicates the flavour of animal food; but is the least abundant and the least nutritious principle.

XXX. The objects for which they are eaten, and the physical condition of the eater, must regulate the choice of viands. No sorts of food can be called absolutely wholesome or unwholesome: they are only relatively so.

XXXI. The more nutritious meats are more stimulating and heating, and more difficult of digestion than the less nutritious.

XXXII. The due texture, density, or cohesion of animal food, is the condition indispensable to its easy digestion. If it be too compact, longer time and greater effort of the stomach are required to perfect solution or chymification. If it be too glutinous or gelatinous, an equal obstacle is presented to digestion. It presents a mass, though soluble, too viscid—sliding too easily from the churning movement of the stomach, too intimately mixed with the water it holds, and too devoid of pores to be easily penetrated or attacked

by the caustic acid (*hydrochloric*) of the gastric juice. Hence jellies, isinglass, &c., when either alone, as a dessert, or as an addition to enrich soups, overload the stomach, and are bad for invalids. Hence young meats—as lamb and veal, which contain much albuminous matter—are viscid, glutinous, adherent, inseparable, and are harder of digestion than the old animals, mutton or beef.

The degree of firmness of texture most suitable for digestion varies with the power of the stomach, and the habits of the individual. Tender wedder mutton, of five years old, may, perhaps, be considered as the type of that texture of fibre which best possesses the requisite consistence for easy digestibility. Beef requires stronger powers of digestion, but is more nutritious—is, in fact, the most highly nutritive of all animal food: its texture is firmer. The longer the period that intervenes between the death of the animal and the eating, the more tender and digestible it becomes: this is in virtue of the diminished cohesion of the fibres produced by spontaneous alteration or decomposition—incipient putrefaction: what the food gains in this respect it most probably loses in nutritive power.

XXXIII. The flesh of young animals is less nutritious and more indigestible than that of old. It contains more gelatine, and less fibrine. Wild animals are more nutritious than domesticated, inasmuch as they are possessed of more highly fibrinized tissues, from their superior health, air, and exercise. Hence oxen accustomed to labour, and afterwards fattened, afford the best beef. Hence the flesh of hunted animals—animals accustomed to hardy exercise—is light and digestible. Hence the well-known inferiority of lean and spare flesh—obviously because that state indicates a want of condition in the animal. For the same reason, the muscular flesh of a healthy, well-fed, and plump animal is superior.

Veal is only fit for making broth or soup, as containing a large portion of gelatine. In general, the withdrawal of the blood of an animal in the process of killing, robs the meat of its most nutritious parts. Fresh, healthy pork is highly nutritious and wholesome, but in civic life is only fit for occasional use. Smoke-dried, salted, or highly-seasoned minced meat, as that stuffed into intestines, require strong powers of stomach. The flesh of the fowls ordinarily used

at table is light and digestible. Goose, however, is an exception

XXXIV. Soups consist of all the nutritious principles of meat, save fibrine, extracted by decoction. Part of the albumen rises to the surface in the shape of froth, and is skimmed off. This kind of food is highly restorative, and exacts little labour of the digestive organs. When taken to excess, or preceding a copious meal of solid materials, it is apt to distend the stomach, and impede digestion. The kind of meat, and the concentration of the liquor, varies its nutritive and stimulant power. Beef affords the richest soup—then mutton. To convalescents, the soup of white meats, as veal and fowl, is less stimulating. A decoction of beef or mutton, as a beverage, is far more restorative than wine, ale, or tea.

Broths.—These animal decoctions compounded with vegetables, as peas, barley, rice, potatoes, greens, cabbage, carrots, turnips, &c., are only fit for strong stomachs, and are perhaps only the diet of economy. Too frequently they distend the stomach, and unfit it to digest the more solid aliments that succeed.

XXXV. Fish contains less nourishment than the flesh of beasts or birds: nevertheless it is a highly important article of diet—light, nutritious, and unstimulating; not sufficiently used because of its expense in all inland places. The fresher it is eaten, and the simpler it is cooked, the better. It is a valuable diet for invalids. Its light texture makes it easily acted on by the stomach. It is peculiarly suitable for convalescents from exhausting diseases, when the digestive powers are as yet unable to convert stronger aliment into chyle. Fishes combine fibrine, gelatine, and albumen, almost in equal quantities. Fish of dark-coloured and firm texture, as the salmon, eel, &c. are oily, heating, savoury, and nutritious, but difficult of digestion. The whiter and more tender fish, in which gelatine and albumen predominate, as the whiting, sole, turbot, haddock, and cod, are easier of digestion, according to the order in which they are named. The most wholesome condiments to fish are vinegar and salt.

XXXVI. Shell-Fish is highly nutritious, but indigestible. Oysters are the least indigestible, but should never be swallowed without mastication; these aliments, eaten in excess,

sometimes produce poisonous effects—often a cutaneous efflorescence. In hot seasons, and in those disposed to cutaneous diseases, shell-fish must be eaten with caution.

XXXVII. Milk is intermediate between animal and vegetable food: it is nature's exclusive diet for young animals till a certain age, because of its high amount of nutriment, and the little labour its assimilation imposes upon the digestive organs. It is wholesomest undecomposed, as it comes, and the sooner it comes, from the animal. Its constituent principles, cream, cheese, butter, whey, are separately less genial to the stomach. Toasted cheese and fried butter, the one for its viscidity, and the other for its empyreumatic oil, should be eschewed by weak stomachs and convalescents. Boiled milk is less nutritious: its albumen is separated, and brought to the surface in the form of a thin pellicle or scum.

Milk is the suitable, and ought to be the exclusive, diet of the infant for the first nine months, or year, of existence. It may advantageously, at all ages, constitute a principal part of the food of man, at least one-half of his morning and evening meal. Cream is too rich to be taken into the stomach in considerable quantities, but it confers a richness and delicacy on other subsidiary articles of diet.

XXXVIII. Eggs rank next to milk in their high degree of nutritiveness and digestibility, and for the same reasons, and with the same intention. Overboiled eggs, are not always indigestible.

XXXIX. Vegetable Food.—Farinaceous grains and roots as wheat, barley, rye, oats, rice, &c., contain the greatest amount of the most nutritious of all vegetable principles, starch, gluten, and sugar—with prosphate of lime—the essential elements of the organized tissues.

XL. Wheaten Bread is pre-eminently "the staff of life," as containing most of the most nutritious principle, gluten. The finest flour—highly dressed wheat—has a tendency to constipate the bowels. Less completely dressed—the husk less highly separated, or containing the whole substance of the grain—household or brown bread, combined with the white bread, or substituted for it, counteracts this effect.

XLI. Barley Bread is less nutritious and less digestible than wheaten bread: it is too viscid; its gluten is too much

in its separate state—not sufficiently combined with the other principles, to be easily acted on by the stomach.

XLII. Rye Bread is highly nutritious: but it is apt to oppress the stomach, and to produce acidity and purging. A mixture of wheat and rye flour makes a wholesome bread. the one grain counteracting the obvious effects of the other.

XLIII. Oaten Bread affords an ample nourishment: but it is heating, apt to create acidity, and requires strong powers of digestion. This constitutes the staple diet of the hardy Highlander, with milk, cheese, and fish. But it is his habits of life, his active exercise, his mountain air, more than his diet, that endows him with constitutional powers, in point of toughness and endurance, far beyond those of his southern compatriot fed on "roast beef and plum pudding."

Boiled oatmeal, with new milk, may be employed advantageously for the breakfast of healthy and active children.

XLIV. Bread should never be eaten new, or insufficiently baked. It is a suitable article to conjoin with rich and more concentrated aliment. Hence, probably, its abundant use at the French tables. Yet bread eaten in undue quantity, or alone, is oppressive to the stomach, especially to valetudinarians

Bread is supposed to produce acidity in children. This can only be in very unhealthy stomachs, and in very overdoses. If it be well-baked, especially home-baked, sufficiently raised, light, porous, and spongy, and sufficiently stale or toasted—given in moderate quantities to children who have teeth, and with plenty of exercise between meals, it is perhaps the best food. The mucilaginous sloppy doses of rice, sago, arrow-root, &c., as ordinarily prepared by the bulk of nurses and mothers, are much more indigestible, and not near so nutritious. Ground rice unadulterated, or the entire grain duly boiled in water, with heated (but not boiled) new milk then added, is to be excepted; and according to our experience, forms the diet *par excellence* of prematurely-weaned children. The diet of infants will be afterwards discussed.

XLV. Wheaten Flour, made into puddings of all sorts, pancakes, and pastries, are all digestible enough by strong stomachs, and may form a large part of the dinner of the robust; but are to be sedulously eschewed by dyspeptics and convalescents.

XLVI. Rice, after wheat, is the next staple article of diet, It is the principal nourishment of entire races of men: but

it cannot be taken exclusively, or in large quantities, but by strong stomachs. It is little disposed to ascescency or fermentation.

XLVII. Arrowroot, Sago, and Tapioca, are, in their place, useful articles of food for children and sick persons.

XLVIII. Potatoes well-cooked and mealy, are wholesome, nutritious, and agreeable to almost every taste. Waxy and under-done potatoes are very indigestible—indeed, pass through the bowels of the weak unchanged.

XLIX. The esculent roots, as carrots, turnips, parsnips, onions, raddishes, lettuce, water-cresses, are all flatulent and watery aliments; but are refreshing during the heat of summer, and are good qualifiers of solid animal food. The former owe their nutritive properties to the sugar they contain; the latter are pungent, acrid, stimulating, and good for condiments, &c. &c. The onion boiled, or in soup, is mucilaginous and nourishing. Water-cresses and lettuce are useful for their aromatic and anodyne properties. Greens, cabbage, cauliflowers, brocoli, spinach, boiled endive or succory, though containing little nutriment, when well-dressed, in warm weather, and combined with other articles of diet, are digestible, cooling, aperient, and adapted for irritable states of the mucuous lining of the intestinal canal. They require the addition of salt, and perhaps other stimulaut condiments, as pepper, mustard, &c.: error on the score of quantity or quality produces flatulence, distension, &c. Oil and vinegar are used with salads as tending to check their fermentation in the stomach, and to increase their digestibility. Cucumber is the most unwholesome of all raw vegetables.

L. Fruit in its season may be safely indulged in by the strong according to their discretion, taste, appetite, or thirst. To the valetudinarian, if discreet in the timing and dose of the fruit he takes, it will be alike grateful and restorative. He must, however, be careful not to eat any quantity on a loaded stomach, as is too frequently done in the shape of dessert after dinner.

Farinaceous fruit, as the melon, is the least digestible; so also are the common stone fruits. The peach and apricot, however, are as light and digestible as they are delicious. Cherries are less digestible. Apples and pears are next in point of digestibility. The small-seeded fruits, as grapes,

strawberries, raspberries, gooseberries, cranberries, bilberries, redwortleberries, are the most wholesome. Apples, when baked, afford an excellent nutriment. Dried fruits, from the amount of sugar they contain, are apt to become ascescent.

LI. Sugar is highly nutritive, but it is not fit for exclusive use. It is best restricted, as a condiment, to other articles of diet—to fruit, farinaceous, and succulent vegetables—often in which "*la sauce vaut mieux que le poisson.*" It stimulates the secretion of the saliva. Sugar-plums and sweetmeats of every kind are injurious to the teeth of children.

LII. Salt is an essential article of diet in itself, and necessary to give sapidity to tasteless substances, to prevent decomposition, and to promote digestion. Total abstinence from salt, for a time, engenders worms in the body, and all sorts of vermin without.

LIII. Condiments, and stimulating sauces, or seasonings, contain no nutritive materials, but are intended to stimulate the jaded powers of the stomach to forced and unnatural efforts. Spices, mustard, pepper, &c., are good in themselves, but of unfrequent necessity in temperate climates. The produce of the tropics, they are indispensable qualifiers of the vegetable diet that forms the staple food of their inhabitants.

LIV. Vinegar, in small quantities, is a grateful condiment. It prevents raw vegetables from producing flatulence; to animal food it imparts tenderness—a looseness of cohesion that makes it more easily acted on by the juices and muscular motion of the stomach. On this principle, the addition of lemon-juice to rich soups, and of apple-sauce to pork, renders them more easily acted on by the stomach. Vinegar taken in excess to reduce fat, destroys the coats of the stomach—too heavy a mortgage for a boon more safely and cheaply obtained by other measures. Vinegar given to animals before death, makes their flesh tender.

LV. Tobacco in all forms, is to be classed in the prohibited list with spirit. Whether chewed, snuffed, or smoked, it is equally pernicious: *chewed*, it destroys the appetite, absorbs and vitiates the secretions of the stomach: *snuffed*, it blocks up the nostrils and blunts the sensibility of their mucous lining; *smoked*, it taints the breath, parches the throat, and provokes thirst which the smoker seldom quenches

with water. In every way it is a filthy habit, and a useless waste of money; equally an injury to its consumer, and an annoyance to those about him. It begets indolence, and indifference, selfishness, and slovenliness.

LVI. Opium is often used as a substitute for spirits, on account of the agreeable excitement it produces. The dose requires to be continually increased. The habit is even more destructive than that of drinking strong liquors. We have known it annihilate the finest talents, and produce sheer old age and death, but a few years beyond thirty!

LVII. Modes of Cooking.—Cooking has a very intimate connexion with health as well as with comfort. Many hurtful prejudices exist on this subject in society, and it deserves the attention of every one anxious to improve and preserve health—especially of mothers, and the heads of families.

Roasting is, perhaps, the best form of cooking, the least dissipating the juices of the meat. The melting out of the fat, and the evaporation of the water, however, reduce meat one-third by roasting; but the hard superficial crust which forms, prevents the abstraction of the nutritious matter; the albumen (oozed out in boiling) is coagulated. Roasted are more nutritious than boiled meats. The outer part is not fit for an invalid, as consisting chiefly of burnt fat and corrugated fibrine; the internal part is more delicate, juicy, nutritious, and light. Meat should be neither over-done, nor under-done. If it be kept long, and tender, and not too raw, the latter, however, is preferable.

LVIII. Broiling is only a modification of roasting. The hard coating thus rapidly imparted to the meat prevents the evaporation of its juices, and renders it peculiarly nutritious and tender.

LIX. Boiling robs the meat of its gelatine, and washes out the nutrient juices charged with osmazome: the fibrine, however, is left, but weakened in nutritive power according to the amount of boiling; but it is rendered softer, more pulpy and easy of digestion: the albumen is solidified. The extracts therefore—their adaptation for soups and broths—constitute the value of this mode of cooking. These are economical but not wholesome aliments: the watery part is oppressive to weak stomachs. Boiling must not be too fast, nor too long; for when the albumen and gelatine predominate, as in young meats, the article prepared will be converted

into a hard indigestible substance. Young meats, therefore, as lamb, veal, chicken, &c., are more digestible, as well as more nutritious, when roasted than when boiled.

STEWS are a modification of soups—a concentration of their extracted juices, by a kind of infusion or simmering, not boiling; their complicated and stimulating admixtures are their great evils. This process is the best adapted for the young viscid meats above named. On this account, beef, mutton, and chicken tea are more wholesome for invalids than their broths.

The due boiling of vegetables is a point of great importance to attend to. Over-boiled potatoes are a dry, insipid powder. Under-boiled potatoes, greens, cabbage, carrots, turnips, are highly indigestible. Hard water, for boiling, best preserves the tender juices of meat; soft water best dissolves the hard fibres of vegetables. Mutton loses one-fifth of its weight in boiling: beef, one-fourth.

LX. BAKING is an intermediate process between roasting and boiling, but not so good as either. Baking renders meat more sapid and tender, retaining its juices; but the oily parts, instead of oozing out, are burnt in, and rendered empyreumatic.

LXI. FRYING is the least wholesome process, at least where digestibility is the question. The boiling oil it introduces into the texture of the meat, makes it empyreumatic and liable to disagree; it soddens the meat besides.

DRINKS.

LXII. Drink is as important to the economy as food; and the craving for it is a more imperious impulse. It is necessary, both to repair the waste of the fluids, to liquify the nutritive matters, and to dilute the chymous pulp in the stomach. It is questionable if much of it passes into the duodenum, or bowels, unless when a great over-dose is taken; otherwise, its usual route into the circulation is by direct absorbtion from the coats of the stomach. Nutritious liquids, introduced into this organ, have their aqueous parts thus absorbed—a route very different from that which the chyle takes to reach the circulation. The solid residue is then acted on by the juices and muscular motion of the stomach, and converted into chyme. This seems the indispensable condition of their digestion. Milk—nature's own

liquid aliment—is thus acted on. When soups, tea, coffee, chocolate, malt and spirituous liquors are taken, the watery part is immediately absorbed, and the gelatine, albumen, fat, extractive matter, gum, resins, &c.—this solid residue, of whatever composed, undergoes the usual action of the stomach.

Water is the best beverage; the purer it is, the more free from extraneous ingredients, the better. Pure animal and vegetable infusions, as beef and chicken-tea, barley-water, toast-water, gruel, &c., are excellent nutritious drinks for invalids.

LXIII. Errors of drink have been, amongst civilized society, the most prolific source of its physical, as well as its moral evils. Diseases that slaughter more than ever fell victims to sword, famine, and pestilence combined, acknowledge this origin. This can be made apparent to the simplest understanding. The sophisticated drinkers, in question, directly poison the springs of physical and mental health—the digestive apparatus, and the brain; charging the blood with a greater quantity of extraneous matters than can be easily eliminated, and forcing their separation within the economy in the shape of various morbid deposits. The lacteals take up but a small portion of the fluids received into the alimentary canal. The veins and lymphatics of the stomach and intestines absorb a much greater part. This is received into the general mass of the venous blood of the mesentery—the connecting membrane of the bowels. All this blood has to pass through the liver—the largest gland in the body, and the most frequently and easily disordered. Hence the liver receives the first impression of noxious drinks, and retains it most permanently. Hence the indigestion and bilious attacks after a debauch; and the organic alterations of the stomach and liver consequent to long-continued irritation, from the excessive use of ardent spirits, or fermented liquors. From its delicate organization, the brain is the next organ to receive and retain these morbid impressions. Intoxication, although beastly enough, is a mere transient result. Alcohol is easily detectable in the brain of those killed when drunk. Not only is the nervous connection between the brain and stomach impaired by this means; but its mental and moral perceptions are equally blunted. The kidneys, as the eliminators of morbid or

effete elements from the blood, are the next organs to feel and resent errors of diet and drinks—often producing the granular or mottled kidney.

LXIV. Alcoholic drinks, fermented liquors, as well as medicinal stimulants of all kinds, should only be had recourse to on extremely rare occasions, and under circumstances of great exhaustion, when life appears sinking. They can never be taken with impunity in a state of health. The nutritious ingredients in any, of even the best, of the liquors in question, are almost an infinitessimal element compared with the noxious principle they contain. The temporary stimulus of organic activity, and the transient exhilaration of animal feeling they produce, is mistaken for the acquisition of strength and nourishment. This fallacy has propagated a master-evil over many climes, and throughout many generations, entailing the ruin of countless myriads of the best and brightest, as well as the worst and dullest of the human species. We charitably hope that "the times of this ignorance God winked at." But, in these days, to counsel alcoholic stimulants to feeble suckling mothers, and dyspeptic invalids, is inexcusable. They may, indeed, temporarily counteract exhaustion, rouse torpid nervous energy, and flog up languid vascular action—producing a glow in the stomach, or a draught in the bosom; but they will fail to impart available nourishment. This factitious strength is soon succeeded by increased weakness, and a more imperious demand for a repetition of the stimulant. The mischief does not rest here; for, the ordinary dose failing to produce its wonted effect, a deeper and a deeper draught becomes necessary, and at last merges into a habit—often an uncontrollable passion. In other cases, where the administration of wine or spirits is commonly supposed to be justifiable, in persons exhausted by inordinate fatigue, it is better to allow the system to wait and want, till an interval of repose gives time for the stomach to resume its activity, to utter the voice, and to take upon itself the supply, of the organic demands.

LXV. The greatest, and longest continued efforts, both of body and mind, are those made on simple diet, and unstimulating beverages.

LXVI. Even without going the length of palpable intoxication, the habitual indulgence in "strong drink" produces chronic inflammation of the stomach and duodenum, thickening

of their mucuous lining, infarction of the glandular orifices, and drying up of their secretions; organic changes of the liver, with obstruction of its bile-ducts; alteration of the kidneys. The heart, lungs, blood-vessels, brain, and nerves, become the seats of various disease, inducing apoplexy at the head, and gangrene at the extremities, shaking of the hand, and palsy of the leg; epilepsy, *delirium tremens*, and insanity; raving madness, suicidal despondency, or blank idiotcy. It induces premature decay; and determines a habit of body that renders fatal the simplest accidents of wounds or fractures. It gives to its votary a greater susceptibility to the impressions of ordinary diseases, and makes him fall the first victim to epidemic visitations. It entails deformity, disease, and imbecility on posterity. It shatters the powers of the most gifted intellect; it blunts the senses; it perverts the conscience; it renders equally powerless to will or to do. It unfits alike for the struggles or the successes of life—to bear its woe or its weal. It mars all present happiness, and blights all future prospects. It entails at once the loss of character, and the ruin of circumstances. It impels to every crime, and produces recklessness of its commission. It dissolves the ties of relationship, and extinguishes the claims of humanity. It stimulates to murders, robberies, incendiaries, and riots. It fills our prisons, hospitals, asylums, and workhouses. It has even swept from the face of the earth entire tribes of men. It perverts countless hoardes of the grain nature had given for "the staff of life" to mortals, into a means of weakness, and an engine of death!

Such are the tendencies and effects of the indulgence in intoxicating liquors—such the terminus to which it inevitably leads its victim. Is there any guarantee against reaching this terminus by those who once set foot upon the fatal rails that lead to it. An habitual medicine, or beverage, of the above nature, whose limits of moderation and excess cannot be defined, and where, therefore, transgression must be easy, is best not to be tampered with. The immediate, entire, and final cessation of its use, is the only salvation for the weak, and the only security for the strong. To the veriest sot this abandonment is safe, and, if not beyond retrieve, will ensure the speedy return of health, of peace, and of prosperity.

LXVII. Tea.—Not the least of the advantages of tea is the having superseded in society the more noxious potations of fermented liquors, and spirits and water. Tea, at least black tea, of the best quality, does not deserve the hostility it has called forth from some writers. It refreshes the body, and exhilarates the spirits, keeping awake the senses, and giving activity to the intellect. Its nutritive power is chiefly, or altogether attributable to the milk, or cream and sugar, with which it is combined. It never should be taken warm. To literary men, and students, not taking active exercise, its use could be ill-substituted by milk. A marked indisposition for intellectual toil follows the use of the latter. With ample air and exercise, however, milk is much the fitter fluid for man to dilute and wash down his morning and evening meal.

LXVIII. Green Tea is a sedative, and calculated to allay the excitement of the brain from over-activity of its circulation, ensuing on stimulating drinks, passions, or studies. In all other cases it is decidedly noxious; and especially so to nervous, weak, and irritable persons, disturbing both the stomach and the brain, and inducing wakefulness. The same remarks apply to the medicinal applications of black tea, but its effects are less immediate and less marked.

LXIX. Coffee is more stimulant, and more oppressive to the stomach, than tea. It is apt to constipate the bowels, and produce acidity and flatulence. It contains a greater quantity of extractive and resinous matter. Its use as a promoter of digestion is very questionable, if it be not rather positively clogging and injurious; gratuitously absorbing the powers of the gastric juice, at the expense of the solid *ingesta*; besides introducing into the system a great amount of highly carbonized materials, only necessary in very low temperatures. Coffee should always be fresh roasted, and should be made by infusion. Boiling dissipates its aroma.

LXX. Cocoa is lighter than Chocolate, but not so nutritious. They are more substantial articles of diet than tea or coffee.

AIR.

LXXI. Variation in the qualities of the air we breathe, is a fertile source of disease, and an efficacious means of cure.

The atmosphere obeys the general law of the expansion of bodies by heat, and their contraction by cold. Hence the variations of atmospheric pressure. The due pressure of this fluid on the surface, equally with its reception into the lungs, is necessary to health. The heaviest column of air is that which raises the mercury in a barometer to 28 inches at the level of the sea. This affords the most condensed amount of oxygen the air is capable of, and the heaviest pressure on the superficies of the body—conditions favouring a free respiration, a quick recruiting of the arterial blood, rapid circulation, energetic movements, hearty appetite, and vigorous digestion. The diminution of the weight of the atmosphere on moderately elevated localities, is compensated by the greater purity, and freer circulation of the air. When the atmospheric pressure is less than normal, as at great heights, or in certain circumstances of weather, the respiration becomes embarrassed, the pulse quickened, and general uneasiness is united to great debility. There is less of oxygen in a given quantity of air, and less pressure on the fluids of the surface. This effect is felt, more or less, every day by invalids, when the mercury descends in the barometer. The liquids of the body tend to expand; the veins dilate, and bulge upon the surface; and the least movement excites perspiration: bleeding from the lungs, and apoplexies, are remarked to be more frequent among those predisposed. These persons, in this state of weather, should avoid every obstacle to a free circulation, as tight dress, muscular exercise, and overloading of the stomach.

LXXII. The effects of a hot and dry atmosphere are muscular weakness, copious perspirations, diminished secretion from the kidneys, frequent thirst, disinclination for animal food, and a relish for vegetables, acid fruits, and cooling drinks; weakened appetite and digestive powers; inaptitude for intellectual as well as bodily exertion; sleepiness during day, and sleeplessness at night. It induces cerebral affections; gastric, bilious, and intestinal diseases. It aggravates hysteria, epilepsy, hypochondriasis, and insanity. It is unsuitable for the lymphatic, the scrofulous, and the rheumatic; but adapted to dry and bilious temperaments.

LXXIII. A hot and humid atmosphere is still more unhealthy and debilitating than the last. Respiration is more difficult. The energy of the nervous and muscular

systems is depressed. This state of the air is the precise condition most favourable to the decomposition of animal and vegetable substances, and to the uprising of putrescent emanations. Hence, the prevalence, under these circumstances, of epidemic, intermittent, and typhoid fevers. It is uncongenial to the lymphatic temperament.

LXXIV. A cold and dry air is pre-eminently healthy. An abundant oxygen is supplied to the lungs; muscular energy is augmented; the appetite is increased; digestion invigorated; perspiration is less; the urine more abundant. Its benefits depend on sufficient exercise being taken to make the organs react energetically. It is, therefore, uncongenial to those who cannot take active exercise, as persons debilitated by age or sickness, those of lymphatic temperament, and new-born infants. The interior congestions, determined by cold inadequately resisted, predispose to inflammations, and hæmorrhages.

LXXV. A cold and moist atmosphere is very unhealthful. It determines powerful abstraction of heat; repels perspiration; produces rheumatisms, inflammation of the mucous membranes of the lungs, and gastro-intestinal canal. The very strong and bilious are often benefited by this kind of weather.

SLEEP.

LXXVI. Sleep is the most powerful restorative of the system. It renews the daily ebb of life, and arrests its rapid flow, recruiting the exhaustion produced by its drains, and toils, and tear and wear. There is no invariable rule for all persons with respect to the amount of time to be spent in sleep. It is regulated by the age, constitution, and habits of the individual. During the entire period of the growth of the body more sleep, as more food, is required to repair the waste of the structures, and to restore their sensibility and irritability, exhausted by the incessant activity of the waking period. Hence, those who use much exertion sleep soundest. In the prime of life waste is not so great, and a less supply is necessary. In old age, when the waste of the vital powers is least of all, there is the smallest necessity for sleep. But the very extremes of life unite in sleeping away most of the time. Too little sleep relatively to the activity of the body unduly exhausts the irritability of the system, inducing

morbid susceptibility of the brain, leanness, nervousness premature decrepitude, disease, and death. An inordinate time given to sleep, or spent in sloth, equally impairs the energies of mind and body; inducing dulness, sluggishness, unwieldiness, and corpulence Eight hours for youths and six hours for adults, is about an average term for sleep.

LXXVII. For sleep to be speedy and perfect, all cares, emotions, and thoughts should be laid aside with one's clothes; and every external excitement of the nerves, as by sounds, light, &c., withdrawn as far as possible. Nightcaps had far better be dispensed with, and people should accustom themselves to sleep with a part of a window open.

LXXVIII. Early rising and the habits it inculcates are highly conducive to health and longevity. Necessitating early retirement to rest, it induces regularity of hours and habits—withdraws from many temptations to baneful conviviality and excesses, and facilitates the advantageous employment of the early morning. It is improper to retire to rest for the night on a full meal; two or three hours after supper is the best time; the body rises lighter and more refreshed the next morning.

LXXIX. During the middle of the hot days of summer, an hour's nap after dinner is often a necessary indulgence, especially to those engaged in laborious occupations, and cannot but be conducive to health. A few hours taken from the usual morning rest will be well replaced by an hour's sleep in the afternoon. This was the practice of John Hunter, and is the custom of the inhabitants of the south of Europe.

LXXX. A horse-hair mattress is in every way preferable to a feather-bed. Over-load or deficiency of bed-clothes is equally to be avoided. During the day they should be taken off and left to air on the backs of chairs, &c., with the windows of the room thrown up, as is the usage in Italy.

LXXXI. Light is an agent indispensable to health. Vegetable, as well as human beings, deprived of its influence, are blanched. The former also are changed in their taste and other properties. The flesh of the latter is rendered soft, flabby, pasty, and sallow. The tissues are infiltrated with pale liquids; the blood abounds unduly in serum; the fibrine and colouring matter are in defect. This is observed in persons, who work underground, in prisoners immured in

dungeons, in the inhabitants of narrow dark streets and lanes, in the cretins of the deep-shaded Alpine valleys, and in the natives of the polar regions, who are for half the year without the light of the sun. Those, on the other hand, who are constantly exposed to the rays of the sun, or who go entirely naked, as the New Zealanders, the Mexicans, the Peruvians, the North American Indians, have thick, rough, freckled, deep-red tawny skins, florid blood, muscular bodies, perfect forms. These are the united results of constant insolation and exercise. The application of these facts to the physical education of youth must not be lost. Lymphatic, scrofulous children cannot be too much in the open air. Too much exposure to the sun, however, especially of the naked head, produces headache, apoplexy, inflammation of the membranes of the brain, insanity, &c.

CLOTHING.

LXXXII. The form of dress has much to do with the preservation of health. A confined garment is an evil to be avoided. Tight cravats often produce much chronic derangement of the health, which is long and in vain "doctored" without knowledge of the cause: they produce congestion of the brain and apoplexy, besides various ailments ordinarily referred to the heart and digestive organs.

LXXXIII. Tight stays are a crying evil of modern society. The compression of the yielding parts of the chest, of the heart, and blood vessels, hinders respiration; preventing the full expansion of the lungs, and the free movements of the diaphragm, abdominal and intercostal muscles. It equally impedes digestion, displacing the liver and bowels, especially, the colon. It produces tumours and other diseases of the mammary glands, and sometimes absorption of the bosom. It predisposes to tubercular depositions, to hæmoptysis (spitting of blood), consumption, palpitations, aneurisms visceral alterations, ruptures, contortions of the spine, and hæmorrhoids. The exposure of the upper part of the chest aggravates the disposition to chest affections; inducing colds, coughs, sore throats, bronchitis, &c.

LXXXIV. Tight garters induce a varicose state of the veins of the legs and feet. Tight boots and gaiters interrupt the play of the muscles of the feet, and produce absorption

of the calf of the leg. Tight shoes distort, by pinching, the toes, and incapacitate forwalking.

LXXXV. Too warm clothing is to be avoided, on the principle of allowing the internal resources to develope the heat, instead of overloading with dress to retain it. To infants warm clothing is indispensable, diminishing it by degrees, as they advance into activity and strength. In old age, and in the feeble, it is also requisite; but only by degrees as pressing necessity demands: increased clothing must only keep pace with the increased inability to generate animal heat.

LXXXVI. Water-proof raiment should not cover the body closely or entirely, or be worn for many hours together; but only as a temporary covering to other garments.

LXXXVII. Wet clothes should never be allowed to dry upon a person. The evaporation from the body thus effected determines severe internal congestions, inflammations, colds, and fevers.

LXXXVIII. The person should be more protected by clothing during sleep, than when awake; in convalescence than in health; in those of lymphatic temperament, than in the sanguine, or the bilious.

LXXXIX. Cotton is by far the best material to wear next the skin. It is intermediate in conducting power between linen on the one hand, and woollen on the other. It does not favour the abstraction of heat so much as the former, nor does it promote its accumulation so much as the latter.

XC. The excessive and indiscriminate use in modern times of woollen and flannel garments has not been without great inconvenience, if it has not sowed the seeds of much of the infirmities of society. The extra heat it permits to accumulate, and the ample perspiration it induces when free exercise is taken, has, at once, superseded exertion, and rendered it disagreeable; inducing, in many individuals, sedentary habits, and a too frequent recourse to fire-side heat, instead of active out-of-door employment. The factitious delicacy of skin it induces, renders the surface doubly susceptible to atmospheric vicissitudes—especially the extremes of heat or cold—predisposing to catarrhals of all kinds, diarrhœa, leucorrhœa, rheumatism, &c. This is not all the evil. The premature use of flannel has deprived later years of a valuable source of counter-irritation, and necessitated as substitutes many pain-

ful topical applications. Flannel next the skin should not be had recourse to in youth without the most urgent necessity. It can only be tolerated in lymphatic subjects, and in cold and humid countries. In almost all cases, flannel may be left off with impunity, after a very few days of the Water Cure discipline.

XCI. Silk is a bad conductor of heat, and for the very delicate is probably the best material to wear next the skin, without imposing much additional weight of raiment. Wadded silk, as combining lightness and warmth, and worn as a jacket next the inner garment, may well supersede almost any other kind of cozy clothing, if such must be worn by the feeble and chilly.

HINTS TO CONVALESCENTS, &C.

XCII. If these Hygeienic principles and precepts are of importance to attend to in health, they become doubly necessary in convalescence, which is neither health nor disease, but an intermediate state. Wasted energies are to be recruited; and the organs are to be prepared to encounter influences from which they have, for a longer or shorter time, been withdrawn—influences of society, friends, visits, noise, light, cold, heat, meats, drinks, bodily labour, and mental toil. The fear of relapse necessitates that here, as in many things else, we advance step by step.

XCIII. Intellectual toil or exertion is to be avoided by convalescents, unless only in so far as it is advisable to afford distraction, as is the case frequently with hypochondriacs. But, as a general rule, its effects on the brain, and on associated organs, are too exciting, too disturbing, too apt to rekindle quenched irritations, and to produce relapses of departed diseases. It is a great advantage of watering places generally, of Gräfenberg, and other places of invalid resort, that the patient's affairs are left behind. The perfect calm of the passions is included in this advice. Moral emotions of an anxious or exciting character exercise a much more potent and baneful influence on the weak than on the strong.

XCIV. To invalids who cannot bear much walking, riding is, of all exercises, the most beneficial. It brings into play the greatest number of muscles, and yields to the body the strongest concussions. But if possible, horse exercise should always be alternated with a corresponding amount of walk-

ing. In this way it is pre-eminently useful in all nervous, hypochondriacal, and dyspeptic affections. In certain diseaes of the heart and lungs, gentle riding is an invaluable resource.

XCV. As epidemic influences are found from time to time to prevail, it is well to be provided with the means of defence, and to know their conditions of attack. Everything that materially deranges the health may become the occasion or exciting cause of the prevalent complaint. When the constitution has been deteriorated by any means, especially by bad diet, by excesses, by fatigue, by misery, by depressing passions and diseases, then it is most liable to be impressed with the noxious influences. Hence the necessity of avoiding every debilitating indulgence, and of adopting every means of increasing vigour. "Catching cold," a fit of passion, a bout of drinking, an overdose of physic, an indigestion, a fright, a wound, anxiety, are named by writers, and familiar to observers, as occasional causes of individual attacks of reigning epidemics, cholera, yellow fever, typhus, plague, dysentery.

THE PHYSICAL MANAGEMENT OF THE YOUNG.

XCVI. The neglected or improper physical education of the young is a gigantic evil in modern society. The ill-health of subsequent life is ordinarily traceable to this source. A reference to the future man or woman must always regulate the training of the child. This has been neglected. Nature's laws have been violated, and the full penalty of transgression paid.

INFANCY.

XCVII. The mother's milk is the food expressly provided by nature for the first nine months, or year, of infancy. Extreme delicacy of constitution, actual disease, or defect of milk, alone justify the transferance to others of this otherwise unalienable maternal duty. A young and healthy wet-nurse is the best substitute: no other milk should be given in addition to the mother's or nurse's. Spoon-fed children require very great care to rear them, are generally puny and feeble, and but a small proportion of them survive.

XCVIII. The practice of cramming infants who suckle with thick gruel, panada, biscuit-powder, and other aliments of the sort, is highly baneful. The colic and crying these indigestible messes produce are often mistaken for the calls of hunger. The dose is repeated, and the measure of the evil is filled up. The foundation of dyspepsia for life is sometimes thus laid. Most, if not all, infantile diseases originate in errors of diet. The cure is not the exhibition of "soothing syrups," "Godfrey," or other poisons, but the withdrawment of the irritation. Vitiated secretions will correct themselves by rest alone. To administer drastic purgatives to infants, neither science nor humanity will now permit. If any where, nature is here competent to her own work, and she should be left therefore to her own resources.

XCIX. A healthy infant should be weaned at nine months, but this should be done gradually: abrupt weaning is neither humane, politic, nor wholesome. After this the best food is the milk of a cow, with rice, sago, arrow-root, good home-made wheaten bread, very stale, or best of all, "Lemann's biscuit powder." If Lemann's biscuit powder be used, it should be soaked for half a day or a night in cold water; then boiled for half an hour in water, and not simmered, which would render it sour. If rice be used, the grain must first be well washed with warm water, to remove a substance which coats it. The rice is then to be boiled for half an hour in water with a little salt added. The water is then to be poured off, and the saucepan, with the lid on, left at the edge of the fire for half an hour longer, This does through and breaks up completely each grain of rice. The milk should be added merely heated. Milk should never be boiled. The boiling deprives it of one of its nutritive principles—albumen—which rises to the surface as a thick film. Very little sugar should be added to the food of infants, and then only at the moment of taking it. From sixteen or eighteen months up wards, a small quantity of tender juicy meat and gravy, without fat, nearly cold, and cut very small, may be occasionally given to children; increasing the quantity and frequency (but never more than once a day) as the child grows and strengthens. The inner part of roast mutton or beef is the best meat. Lamb, veal, chicken, pork, pastry, and cheese, are forbidden on grounds already stated. An excellent breakfast or dinner, for this age, is made of

stale bread crumbled down, with an egg boiled for one or two minutes mixed through it, and cold milk drank with it. Sweetmeats are bad for infants, as they disorder the bowels, and affect the mouth, teeth, and gums. Enough has been said before to render repetitions about over-feeding unnecessary.

C. The new-born infant having but a feeble power of resisting cold, requires for the first two or three months of life to be warmly clad, and protected against atmospheric vicissitudes. But it must be accustomed, by degrees, to the air, till it can endure its alternations; and the amount of clothing must be gradually diminished. After two months, caps should be laid aside, and should never be again resumed by night or day, unless when taking an airing.

The form of dress as applied to infants requires the attentive study of every parent. The infant should possess at every period of its life a free and unrestrained movement of its limbs: no tight bandages or lacings; no compression of its throat by cap strings, nor of its head by buckram bonnets, or of its shoulders and chest by tight-fitting shirts.

The clothing of children is much too complicated: and dressing is much too painful and tedious a process. The looser and simpler children's garments are made, and the more easily they can be put on and off, the better. Fastenings with tapes, loops, and buttons, should entirely supersede the dangerous expedient of pins.

CI. New-born infants sleep almost constantly; and the more the better. They should lie in a cot by themselves after being suckled, and there should be no curtains about the bed. The clothing should be merely sufficient to keep them warm. They should not be muffled with flannel shawls, nor the face covered with handkerchiefs while sleeping.

CII. Infants should be washed all over, night and morning. From a month old, cold water will be used for this purpose with immense advantage; at least if the child be healthy. We do not advance in these precepts untried theories. The habit of cold ablution, night and morning, and daily exposure to the open air, will harden them against many little ailments, and make the process of dentition, always painful, at least safe. All soiled articles should be instantly removed; the skin cleansed with soap and water, thoroughly dried, and powdered.

CIII. After the first month, children should be much in the open air, if the weather permits.

CIV. The earlier after the first two months, and the more frequently for a short time together, an infant is laid upon its back on a bed or sofa, and allowed to sprawl and exercise its limbs, the stronger and more healthful it will become

CV. Children should never be rocked in a cradle; as it sends them to sleep at the expense of congesting the brain. It is only an excuse for a lazy nurse, or a make-shift for a busy one.

CVI. Hoisting is equally pernicious to young infants, and should never be tolerated: 1. It is liable to the risk of accidents. 2. It produces vertigo. 3. It too forcibly compresses the chest in the act of grasping.

CVII. The infant is to be permitted to go on all fours as soon as he is inclined: this exercise will develope the muscles of almost the entire body; but he must not be placed on the foot too soon. Premature attempts to walk should rather be repressed than encouraged. The bones of children of this age are too much in the state of cartilage (gristle), and too deficient in phosphate of lime, to bear the weight of the body. They yield and bend: bandy-legs are the result. Under proper management, however, the distortion will correct itself as the child increases in strength and stature.

CVIII. Children should never be lifted up by an arm, as many nurses do. The mode of carrying in the arm is also of great consequence, so as not to deform the thigh-bone, which is a frequent occurrence with careless nurses.

CIX. The force of habit is as great with respect to the bodily functions as to the moral powers. The periodical necessity for food, sleep, alvine evacuation, &c., amounts to a law of the organism. Fixed hours for food, rest, motions, &c., are important habits to be established.

CX. Fretfulness and irritability are generally symptoms of ill-health, and should never be recklessly or lightly raised. The way to cure the irascible disposition of children is, not to provoke it. Avoid the occasions of passion—divert the child otherwise when ill-tempers threaten, and they will die of their own inactivity, or evanish with the invigoration of the system; while, if kept alive by repetitions, they will be roused into excessive development. The early enforce-

ment and steady prosecution of strict mental and moral discipline, is the foundation of all future excellence of character.

These principles of management apply, *mutatis mutandis*, to the guidance of the subsequent periods of childhood and youth.

CHILDHOOD.

CXI. Its diet must be proportioned to the strength and stature, the amount of exercise, and the vigour of the digestive powers. Excess of nourishment is far less baneful than defect. Insufficient diet, or a faulty digestion elaborating a depraved nourishment from a liberal diet, lays the foundation of scrofula, cachexia, the leuco-phlegmatic temperament, and the tubercular diathesis. Too much animal food, nor even excessive meals, no wise parent will give. In this way the stomach and bowels are overloaded, the elements of fever and inflammation are generated, and the foundation laid, if he escapes their attack, for a career of incorrigible gluttony. In a child of sound constitution, and robust health, with active habits, sprightly disposition, and buoyant spirits, the natural dictates of appetite may be consulted, and a mixed diet of animal and vegetable food given – always with a great preponderance of the latter. If symptoms of repletion or plethora ensue—if there be febrile irritation, furred tongue, irregular bowels – then let the supplies be cut off, and animal food for a time withdrawn. In tender and weakly children, less active exercise can be taken; and the diet that nourished the former would overload the latter. The food, must, therefore, be proportioned to the constitution, habits, exercise, &c., of the little patient. As the frame acquires strength, the quality of the food must be enriched: a generous diet of animal food is necessary for rapid growth. The Water Cure measures will invigorate the constitution, so as to enable him to digest a sufficient nutriment, and shield him alike from the baneful consequences of dietetic errors or accidental diseases.

CXII. Children should be constantly in the open air in fine weather, and their gambols freely encouraged, with sufficient intervals of rest. Long and fatiguing walks are objectionable.

CXIII. The shoes of children (as of all others, did fashion

not dictate otherwise) should be made according to the shape of the foot; broader at the toes than elsewhere; large, of soft materials, of light and flexible sole. Cotton socks are better than worsted for healthy children. The latter is tormenting to their active, sensitive skins, and unnecessary. Pale, delicate, lymphatic children, with cold extremities, require both its salutary stimulus and heating power.

CXIV. When the distinctive dress of the sexes begins to be worn, let mothers avoid laced jackets or corsets for their girls, as sources of muscular weakness, and causes of spinal deformity. Stays are only a substitute for muscular action. To confer the requisite carriage, a continuance of muscular effort is necessary, which the strongest adult could not long sustain. The relaxation of muscles must alternate with their contraction The failure of the desired end arising from this necessity, is corrected by the expedient of a continuous laced support, which supersedes muscular effort. The irksomeness of this restraint is tolerated because of its aid, till habit reconciles to its use. Inactive muscles waste and become powerless: they cannot perform their function of support to the spinal column. The consequence is, when the artificial prop is withdrawn, the spine yields, and bends to either side. Curvature is the result. The varied exercise and alternate repose of the muscles is the only rational way to their general invigoration, and the only safe mode of imparting a graceful carriage.

CXV. The habits of morning and evening cold bathing or ablutions must be continued, as the surest promoters and conservators of health.

YOUTH.

CXVI. What is the source of the feeble constitution and delicate health of modern females? Most assuredly, neglected physical education! This is a matter of paramount importance, and should be clearly understood to be effectually corrected. It is at the critical epoch, in question, that the effects of a beneficial or a baneful system of physicial training are palpably evinced. Boys and girls now no longer resemble each other in their bodily health and strength. This delicacy of the female constitution is not inherent, but acquired. If males were subjected to the same influences as females, the

same physical injury would follow. Fashion, a false mode of education, and faulty objects of accomplishment, impose upon the feebler sex restraints no longer compatible with the free gambols to which the stronger owes its robustness of health. It is from the time that a perverted taste makes it indecorous for girls to indulge in the exercises of boys, that the deterioration of the female constitution commences. Their body, moreover, has to be drilled, drawn, and tortured into conventional shapes and attitudes, equally opposed to the forms of nature and the functions of health. The slowness of the process of impairment, and the insidiousness of its ravages, usually mask the evil till detection comes too late, and remedy is unavailing.

CXVII. The mental education is as faulty as the physical. The faculties of the mind are equally repressed and enfeebled with the deterioration of the body. Frivolous pursuits, having little reference to the great destinies of woman, and acquired too often only to be forgotten or abandoned, absorb the best years of life, shut out the place of solid acquisition, and heap up materials of enduring ill-health. The better to perpetuate the loss it entails, this costly sacrifice at the shrine of fashion is made before the body has received its proper mould, or the organs their due consolidation. Its palliation is a legitimate but blind maternal zeal for the objects of the sex! its excuse—ignorance of the consequences!

CXVIII. Sound views of the animal economy, as well as of the mental constitution, are necessary to correct the errors of public seminaries, and of private families

CXIX. The physical and mental powers are intimately connected, and essentially depend on each other. If the body is unduly wasted by labour, nervous energy is withdrawn from the intellect—the mind languishes: if the nervous energy is unduly expended by prolonged mental exertion, it is withdrawn from the body—the body languishes: in either case, the equilibrium of health is destroyed—disease results. Defective exercise, or disorder of the functions of a part, induces inactivity, waste, and feebleness of its structure. The brain is subject to this law: hence the necessity for a simultaneous and systematic exercise of all its powers that are worthy of culture, and the uniform quiescence of those that ought to be repressed. The common courses of edu-

cation are calculated to exercise but a very few of the powers of the mind.

Disorders of the digestive functions are the root of all other bodily ailments—perhaps of a great majority of mental maladies. An imperfect or vitiated chyle will afford an unwholesome nutrition. Abnormal or arrested secretions and excretions will be the result. The nervous system is next implicated in the chain of morbid action: the mainspring of the machine will thus get relaxed or unwound: and the effect will, in its turn, become a cause. All the functions will participate in the impairment of the nervous centres—the supply of nervous stimulus to all will be diminished or vitiated.

If one organ is unduly exercised, it absorbs a disproportionate amount of the nervous energy, and deprives the others of their own share: the tone of the robbed organs is diminished—their functions are weakened. Intense application of mind, for example, concentrates the nervous energy on the brain, at the expense of the trunk and extremities—proving how unfavourable diminished nervous influence is to the general health. Irregular, deficient, or inordinate exercise of the mental or bodily powers destroys the equilibrium that should be maintained between them, and induces weakness, suffering, disease.

CXX. Bodily energy is requisite for the proper culture of the mental faculties of youth. Education is not advanced according to the time devoted to it, nor to the earnestness of the application. Forced efforts at learning both injure the health and fail of their end. Varied mental and bodily effort—the alternation of labour and relaxation—pursuits calculated to develope the various faculties, and commensurate in importance with the destiny they prepare for—will alike conduce to vigour of body and energy of mind. The brain shares the benefit of improved health. The active exercise of the intellect and of the moral feelings becomes, in its turn, a necessary condition to the due performance of the functions of the nervous system.

CXXI. The education of the intellectual and moral powers must go hand in hand. But as the perceptive faculties are developed before the reflective, the moral sentiments and affections must be first cultivated. If these be neglected, it will be in vain afterwards to address the *morale*

through the intellect. The mere conviction of the judgment will never mend the heart. Here we are encroaching on the province of other teachers: and, keeping to the objects of our work, we must forego any detail as to the plan of intellectual education best fitted to develope all the powers of mind, according to the seasons of their maturity, and the career the individual is to be fitted for. We only remark, that classical learning might well be postponed for a few years; and the various branches of natural science, history, biography, the literature, laws, and constitution of one's country, with a severe course of mathematics, would expand the views, call forth all the powers of reflection, observation, and application—and make the subsequent acquaintance of the master writers of antiquity an easy acquisition, and a spirit-stirring employment.

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