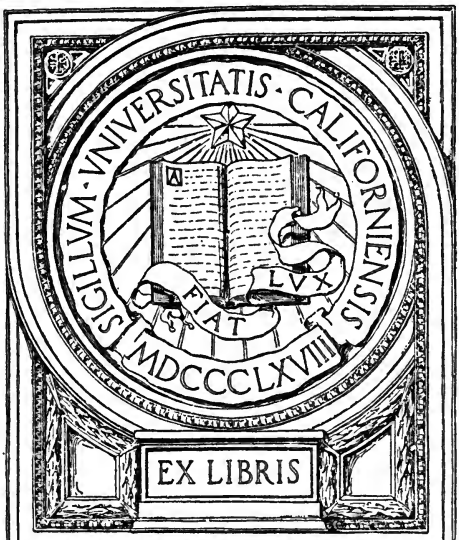

WATER

AND

VEGETABLE DIET

IN

CONSUMPTION, SCROFULA, CANCER, ASTHMA,

AND OTHER CHRONIC DISEASES.

IN WHICH THE ADVANTAGES OF PURE SOFT WATER OVER THAT WHICH IS HARD ARE PARTICULARLY CONSIDERED; TOGETHER WITH A GREAT VARIETY OF FACTS AND ARGUMENTS SHOWING THE SUPERIORITY OF THE FARINACEA AND FRUITS TO ANIMAL FOOD IN THE PRESERVATION OF HEALTH.

BY WILLIAM LAMBE, M. D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

WITH NOTES AND ADDITIONS,

BY JOEL SHEW, M. D.

New York:

FOWLERS AND WELLS, 131 NASSAU STREET,
AND 142 WASHINGTON STREET, BOSTON.
1854.

PREFACE TO THE AMERICAN EDITION.

The work which is here presented to the American public, was first published in London, under date of 1815, with the title "Additional Reports on the Effects of a Peculiar Regimen in Cases of Cancer, Scrofula, Consumption, Asthma, and other Chronic Diseases." I have thought better to change this name to that of "Water and Vegetable Diet in Consumption, Scrofula, Cancer, Asthma, and other Chronic Diseases," as being more expressive of the true character of the work. I place consumption first in the list of diseases, because of its greater frequency and importance. The new title will, I am confident, be more apt to attract the eye of casual observers than the old one, which consideration is plainly a matter that should be looked to in this day of many books.

I have also, in the following work, changed many of the technical or scientific terms to such as will be better understood by the generality of readers. Numerous typographical errors, and some other mistakes, which had crept into the London edition, I have also corrected. I have likewise taken the liberty of omitting many of the marginal references of the former edition, references which were, for the most part, made either to works that are not accessible to American readers, or to those of foreign languages, which also are not here to be obtained. By making these omissions (which I consider does not at all depreciate the value of the work), it has been brought into a smaller space than it otherwise could have been, and is, as a consequence, afforded at a lower price. The notes and additions which I have made in the body of the work, will be recognized by the latter initial of my name.

That the "Vegetarian diet," (as it is now called in England, and of which there are many followers in that country,) is destined to do yet a vast amount of good in the prevention and cure of disease, in the United States, I confidently believe. I feel myself too thankful for the great benefit I have received by adopting it for the most part during a period of nine years, to remain silent on the subject.

Many in this country have indeed already found great relief and, in not a few instances, a perfect cure, by the adoption of vegetable

regimen. A great number have also made shipwreck of the matter, so to say, and have in the end gone from bad to worse, and so as a consequence have got no good. It is very common to find persons who tell us that some years ago, after they had suffered much in the way of indigestion, constipation, and the like, they commenced the vegetable regimen, and apparently at first with the most beneficial results. At length, however, they found that they grew worse, and that on again returning to the use of flesh meat, they improved. Now I think that in most of these cases there has been manifest error in the *method* of the experiment. Thus the individual was at first careful in regard to every thing relating to both *quality* and *kind* of food; at length, however, feeling an increase of tone and vigor in the digestive organs, and at the same time a great improvement in the keenness of appetite and relish for food, he took, insensibly and by degrees, *to overdoing in quantity;* a practice which it should ever be remembered is a violation of *the most important* of all dietetic rules. In the use of saccharine matter especially, have the "Vegetarians" committed error in the United States. It is far better to partake of a proper meal of plain vegetables and flesh meat than to eat a variety of rich, concen trated, and highly sweetened articles, as many have been in the habit of doing.

"Vegetarianism" has hitherto been presented to Americans as a means of *preventing* rather than of *curing* disease. This work, then, brings the matter up in a new aspect. And surely any method, however simple it may be, which promises any relief whatever, in so grave maladies as those of which it treats, merits the candid consideration of every friend of his race.

The perusal of this work will lead many, doubtless, to the conclusion, that if such striking benefits as are here described are to be gained by attention to diet alone, how much greater may we not look for in combining the *water-treatment* with the course pointed out. I therefore recommend that all who make the experiment of vegetable diet, pursue at the same time a course of bathing, with an observance of good hygienic habits generally, such as are recommended in water-cure. The experiment will thus be much easier borne, and its benefits rendered greater.

JOEL SHEW.

PREFACE TO THE LONDON EDITION.

In offering to the public these "Additional Reports," I fulfill the resolution I announced, when I published my "Reports on Cancer," of continuing to present to the public what I should think most interesting and important on the same subject. It will be seen that many of the facts, which I now bring forward, have been in my possession, even for a series of years; and I have felt no small repugnance at suffering them to remain useless to myself and others. To withhold from society facts regarding health, is a sort of felony against the common rights of human nature. But I have found that little good is to be done by producing solitary cases. I have, therefore, deferred this publication till I could obtain a body of facts concurring to the same end; and which, I hope, may possess some influence upon public opinion. I was, moreover, anxious to put the correctness of my assertions beyond the reach of doubt or suspicion. Circumstances beyond my control have forced me to consume much more time than such an object really required. But, having at length effected it, I am conscious that whatever depends upon myself has been now accomplished.

The statements, which occupy the first part of these sheets, are drawn, for the most part, from very common sources of information; and the reader, therefore, is not to look for any thing like originality in them. But the inferences from these statements, though sufficiently obvious, are certainly not duly impressed upon the minds of men. It is to these, therefore, that I would more particularly direct the attention of reflecting persons.

I have purposely avoided in this work all refined reasoning about the nature of the matter, which, insinuating itself into the body in unsuspected vehicles, undermines its powers, and lays the foundation of fatal diseases. It is not that I think any thing which I have formerly advanced on these subjects untenable or visionary. In fact, the more I have considered the subject, the more have I been convinced of the general correctness of the opinions I have delivered. But several experiments which I have made are still unfinished;

other employment, particularly the attention due to this publication, having occupied my time. When I have completed the inquiries in which I am engaged, I shall probably publish them in a separate form. This may be more useful than blending matters more strictly scientific with things designed for the general reader and common utility.

I may take this opportunity of saying that I believe I have spoken too hastily, when I said, in the following work, that in certain very healthy situations, "probably not a tenth part of those born," die before two years of age. It rather appears by bills of mortality, that even in those places where the general health is so good, that one half the born live to mature age, still the great mass of mortality is in very early life. This error, however, does not materially influence the reasoning of the text.

The testimonies, which I have received from several correspondents, give me the satisfaction of knowing that my former attempts to direct mankind to the consideration of regimen have not been wholly lost. It would have better suited with my habits of feeling, to have suppressed the expressions of kindness contained in some of them, that are merely personal. But I have thought it improper to withhold what conveys, perhaps, the most lively image of the sentiments of the writers. I have, therefore, given what has come to my hands without mutilation; and must content myself with hereby returning my thanks to the writers for these marks of their esteem. By the facts which they have conveyed to me, they have conferred a considerable obligation on me; but eventually, I believe, a much greater service on the public.

W. LAMBE.

2, King's Road, Bedford Row,
25th March, 1815.

CONTENTS.

PART II.—CASES AND OBSERVATIONS.

VEGETABLE DIET

CHAPTER I.

Effects of the writer's former publications.—Erroneous estimate of Medical Practice.—Medicine corrupted by vulgar errors and false philosophy.—The bases of medical theories hypothetical.—Diseases the same at all times.—The general doctrines of the ancients with regard to their evident causes.

After a silence of several years, I am at length enabled to lay before the public what I flatter myself will be considered to be a respectable body of additional evidence of the beneficial effects of that peculiar regimen, which I proposed for trial in cases of cancer, in the year 1809. Though it cannot be said that the principles, which I attempted to establish in the "Reports" which I then published, have gained the assent of any considerable portion of the members of the medical profession, yet I have the satisfaction to know that my labors have not been wholly in vain. Several respectable persons, both in and out of the profession, have been sensible of the force of the reasoning used; some have adopted the practice advised; and have, from their own experience, publicly recommended it to others: nor has any one ventured to contradict the facts which I advanced; or to assert that the conclusions drawn do not flow legitimately from the premises established. And I know that many serious and reflecting persons have had their attention excited; have had their thoughts turned toward subjects to which they formerly had not paid the smallest regard; and are looking forward, not without interest and anxiety, to the result of the experiments which I have instituted.

I am, at the same time, perfectly aware that the contempt and ridicule, with which the proposal I made was received in some quarters, was immeasurable. There were those who professed that they could not preserve their gravity when speaking or writing on the subject; nor were insinuations still more

offensive withheld. This, however, was no more than what I expected. Such is the natural homage of littleness, egotism, and malevolence to a zeal for truth, and the best interests of mankind. The man must know little of the workings of the human mind, who concludes that, because a proposal is ridiculed, it is therefore ridiculous. Men often laugh, not because there is a good joke, but to conceal some other secret, and not very agreeable, feeling. I doubt not, that the slave merchant laughed heartily at the first proposal to abolish the diabolical traffic in human flesh; the sot laughs, who is advised to relinquish drinking; and we are informed by Captain Cook that, when several of his people expressed to the inhabitants of New Zealand their abhorrence of the custom of eating human flesh, "the savages only laughed at them." I feel confident, therefore, that men of candor will not be too prompt to decide whether, in the present case, these merry gentlemen laughed at my expense or at their own.*

It falls not within the scope of my immediate purpose to examine into the present condition of the medical art. There can be no doubt of its general utility, and in some degree of its absolute necessity in the present state and form of society. I can have no wish, therefore, to sink it in the estimation of mankind. But having made this avowal, it is equally obvious that on no subject whatever has there existed greater fallacies and delusions, than in the estimates that have been formed of the efficacy of medicines, and the other practices, which form the established routine of the art. It would be a matter of little difficulty to trace to the fountain-head the source of these erroneous opinions. But I shall content myself with the irrefragable proof of the fact.

This proof may be readily drawn from the ever-varying fashions which predominate in the administration of drugs. It is an observation of Lord Bacon, that "medicine is a science more professed than labored, and yet more labored than advanced; the labor having been, in my judgment, rather in circle than in progression: for I find much iteration, but small addition." Though this remark is as well founded at the present day as

* So in this country, at the present day, we are often told that people have been made insane by the use of vegetable food, and a hundred other silly things too trifling to mention; as if a man could famish on brown bread, potatoes, fruits, and milk, or even on brown bread and pure water alone. These nonsensical notions, put forth not unfrequently by men who, assuming to be learned, men even of the medical profession, are destined soon, among the thinking class, to be reckoned as belonging only to the delusions of the past.—S.

when it was made, it may be suspected to be occasioned by the limits of the science, and not by any deficiency in its professors of activity or the spirit of research. Twenty years never elapsed without some new medicine or mode of treatment being proposed for some intractable complaint: great cures are published; great expectations raised; the new methods are universally tried; hope is followed by disappointment; and, in the course of a very few years, they are abandoned and forgotten. In my own days, there have been the pneumatic gases; muriate of barytes and muriate of lime in scrofula; nitrous acid in syphilis; digitalis and tobacco in dropsy; digitalis in pulmonary consumption. It were easy to enlarge the catalogue. I know not whether the use of iron in cancer, and of the alkalis and absorbents in scrofula, be as yet extinct; but it is easy to anticipate their fate.*

I consider it not as a reproach, either to the proposers or to the profession at large, to have adopted, for a time, methods of treatment which have proved useless. But it is a pretty sure index of the general feeling with regard to the present state of medical practice. This eager research after new medicines is an acknowledgment that something more, if more be possible, ought to be done for the relief of the diseased; it betrays a restlessness and uneasiness; a consciousness, that much of the established practice is either useless or impotent; that our instruments are not what we wish them to be, and what we are taught in our schools to expect them; and it evinces a secret wish—a very laudable and benevolent wish—that new and more successful methods should be introduced, or great improvements should be made upon the old. And such, I am persuaded, is the feeling of those who have devoted themselves to the service of the sick with the hope to be of real use to them, with the view to exercise their profession with honor to themselves, and with benefit to the community.

It is evident from the history of medicine, that it has, at no time, been established upon fixed and acknowledged principles; such as, being founded on just experiments, or a copious induction of facts, command the assent of all correct reasoners. This is the reason that its doctrines have ever been a subject of con-

* Who does not know that medicine as much as dress has its fashions. Thus, for example, within a few years, for the treatment of consumption iodine has had its run; afterward wood-naptha, and last of all *cod liver oil* (the expressed juice of rotten cod livers), as vile a substance as can be well conceived of. So, too, I might mention the rage for chloroform, which is already fast passing away.—S.

tention and disputation. When the principles of a science rest upon firm bases, there can be no sects or parties among those who cultivate it. Occasional error may have crept into mathematical science; but there are no sects of mathematicians. In physic, on the other hand, doctrines have been fluctuating in every age; there have been as many sects as schools; and at this moment there are almost as many opinions as practitioners.

Medicine is both popular and scientific. Popular medicine is practiced in a certain degree by the whole body of the people, even by the rudest in the village. Hence it becomes contaminated by the errors, prejudices, and superstitions of the people; which must extend, in a greater or less degree, to every member of the community. Physicians can boast no exemption from these prejudices. A curious example of their extent and power may be found in a well-known and popular work. It is this: When, in the year 1760, the King of Spain determined, by a public decree, to free Madrid from the abominable custom of throwing the ordure out of the windows into the streets, it was ordered by a proclamation, that the proprietor of every house should build a proper receptacle, and that sinks, drains, and common sewers should be made at the public expense. "Every class," proceeds the relater, "devised some objection against it; but the physicians bid the fairest to interest the king in the preservation of the ancient privileges of his people, for they remonstrated, that if the filth was not thrown into the streets as usual, a fatal sickness would probably ensue, because the putrescent particles of the air, which such filth attracted, would then be imbibed by the human body."

The doctrines of scientific medicine descend from that small body of educated men, who give themselves up to it as a profession and the means of a livelihood. With these men it is a branch of philosophical science, and it, of course, becomes tinctured with the current philosophical opinions. From hence it has been deformed by absurdities, that are at present hardly credible. Even so late as the days of our own James the First, we find the study of judicial astrology esteemed necessary to a physician. In an examination of a noted impostor by the London College of Physicians, we find, among other questions put to him, with the answers of the man, the following:

"Being asked in astrology what house he looketh unto to know a disease, or the event of it: and how the Lord ascendant should stand thereto:

"He answereth, he looks for the sixth house; which being disproved, he saith, he understands nothing therein but what

he hath out of *Caliman;* and being asked what books he hath read in that art, he saith he hath none but *Caliman.*"

Philosophy was, in its origin, founded more upon speculation than upon observation and experiment. And as the first reasoners in medicine were the philosophers, the principles that were thought to regulate the universe, were, by them, transferred to the phenomena of the human body. Hence the errors of philosophy were engrafted upon physiology.

Hippocrates is said to have separated medicine from philosophy. This can mean no more than that he was the first of the philosophers, who considered medicine to be a distinct branch of science. But the principles which he adopted to explain the causes and symptoms of diseases, were such as he had been taught, and found to be prevalent in the schools of philosophy in his time.

These principles were purely hypothetical, being, mostly, gratuitous assumptions with regard to the constituent principles of the animal frame. The body was thought to be composed of four humors: blood, phlegm, yellow bile, and black bile; health was supposed to depend upon the perfect mixture of these humors, each possessed of its proper qualities; disease took place when the due proportions were disturbed, or when either of the elementary humors was separated, or not perfectly mixed with the common mass.

From this first rude notion of the analysis of the fluids have sprung the division of temperaments into the sanguineous, phlegmatic, choleric, and melancholic, which is received at this day; in each of which that humor was thought to be predominant from which it receives its denomination.

It is clear, from many passages of the Hippocratic writings, that Hippocrates was not the inventor of these doctrines, but that they were the current opinions of his times; and had probably existed at a period anterior to that of any of the records of medicine which have reached our times. However hypothetical and ill founded are the speculations on which these doctrines rest, they were implicitly received by Boerhaave and his followers; nor is their influence wholly extinguished at present.

It cannot be supposed that opinions, which have no real foundation in nature, were at any time admitted without controversy. We find, even in the writings which are called Hippocratic, some variations from this fundamental hypothesis; and other theories, which are wholly distinct from it. Many succeeding teachers rejected it entirely, and proposed other systems. Asclepiades embraced the atomic philosophy, derived

from the doctrines of Democritus and Epicurus: he ascribed the production of diseases to the stopping up or relaxation of the pores. The Methodists thought that diseases were not produced by morbid alterations of the fluids of the body, but considered them as affections of the solids. They divided diseases therefore into three orders; some they considered as caused by laxity; others, as the consequence of tension; others, again, as complicated, being related by some of their symptoms to each of the other orders. Another sect denied that diseases were connected with the sensible qualities of the body. They asserted that there was a subtle matter, an ether, attached to, and pervading the system; and that diseases were affections of this matter. This sect was that of the Pneumatists.

Opinions so discordant, as it showed the evidence in behalf of each to be unsatisfactory, must have excited, in the minds of many, hesitation and discontent. Accordingly, there has ever been a sect, which has maintained, that, in medicine, evident causes were the only proper objects of inquiry; that the changes, which take place within the body, are mostly incomprehensible, and the study of them must be therefore superfluous; and that, could they even be discovered, they would throw no light on the methods of treatment. The question, they said, is not what makes a disease, but what will cure it, How digestion is performed, is of no moment; but what matter is most easily digestible, is of the greatest; it matters not how we breathe, but to determine the purest air is of the first consequence. In things of this nature, we are instructed, not by abstruse speculations and metaphysical subtleties, but by evident experience only. This is the proper guide in medicine, distinguishing the useful from the noxious, and applying them accordingly to practice. Such is the general reasoning of the sect of Empyrical physicians; a sect, the tenets of which, though disclaimed in the schools, have ever found numerous adherents among men the most versed in practice; and which, though not openly avowed, are, I am persuaded, silently assented to, and effectively acted upon, by the great body of practitioners, even at this day.

This short notice of the ancient sects demonstrates that, at the origin of medicine, the causes assigned, as immediately operative in the production of diseases, were not deduced from experience, but were the creation of the imagination. It would be an unprofitable task to examine whether the doctrines of modern teachers have been built upon a more solid foundation. I shall therefore wholly avoid them. Those to whom they are

familiar, will readily perceive, that the questions, which have exercised the ingenuity of the makers of systems, in these latter days, are very nearly the same as were discussed and disputed upon in the schools of antiquity; and that our modern sects are little more than the ancient, revived under new names. Nor will it be disputed, that no theory, which has been proposed, has had more than an ephemeral reputation; nor has contributed, hardly in the most remote degree, to the only rational object of speculation—the improvement of practice, and the consequent amelioration of social life.

It is perfectly clear, however, that human nature has been, and is, at all times, essentially the same. History depicts the same passions; the same motives of action; the same virtues and vices, adorning or darkening the human character; and the records of medicine show that the human body has been at all times (within the reach of written memorials) subject to the same diseases. With the exception of a few contagions (the effect, perhaps, of some accidental combination of circumstances), it may be doubted whether there exists any new disease. In the Hippocratic writings we meet with, not merely the same names of diseases, as those employed at this day, but, generally speaking, the same names applied to the same things; we meet with the same order and succession of events; the same accidents; the same signs, whether announcing safety or portending danger; the same divisions of diseases; in a word, as far as we can judge, the very same scene, which is at this time daily passing before the eyes of medical practitioners. It is, indeed, the perception of this striking analogy which has impressed upon these memorials the indelible character of authenticity; we feel for them a veneration like that excited by the works of Homer, being assured by our present experience that they are faithful transcripts from nature, taken at a period of very remote antiquity. As this is a fact of the first consequence in the history of human nature, I shall cite in illustration of it the account of a very common affection, as it is described in one of these ancient treatises. The disease I shall select is the common catarrh, or cold, of which the following description is found in the treatise on ancient medicine.

"Whenever any one is affected with a cold, and defluxion from the nose, the matter is commonly more acrimonious during the first days of descent from the nostril, and it makes the nose swell, and it heats and inflames it; if, when it has continued some time, you apply the hand to the part, it will be found excoriated, though it be naturally hard, and of little vascularity.

This heat in the nostrils begins to diminish, not while the matter is flowing, and the inflammation continues, but when the matter has become thicker and less acrid, more concocted and mingled than at first; then it is that the heat ceases."—*De veteri Medicina*, xxxi.

Here we have an example of the slightest of all inflammatory complaints, which we find to have been attended with the same symptoms as the common cold, or catarrh, of the present day.

Cancer is allowed to be the most calamitous of all diseases which afflict the human frame. I do not know that any regular description of this malady is to be found in the Hippocratic writings; but there are notices of it, which are sufficiently distinct, and which afford grounds for believing that it was well known at the era of these writings, and that the symptoms of it were essentially the same as at present. In one of the books of the Epidemics, the following short narrative occurs.

"A woman of Abdera had a cancer of the breast; it was of this nature: a bloody ichor came out of the nipple; when the discharge ceased, she died."—*Popularium*, vii. 56.

As then we find noticed, in the earliest records of medicine, the slightest of the acute, and the most severe of the chronic diseases, which men at present suffer, we cannot doubt that they were at this time subject to all the common forms of disease which are found existing at present. Of most of them it were easy to bring direct proof, if it were worth while. But I am unwilling to fatigue the patience of my reader by affecting to prove points which no one is likely to controvert.

How happens it then, that, while opinions have been so unsettled, and in a state of perpetual fluctuation, nature has been so uniform, and continues unchanged? The same phenomena have been occurring during a succession of ages with the same regularity as the rotation of the seasons, or the flux and reflux of the ocean. What can have produced this regularity, but the unceasing operation of regular and uniform causes?

On these subjects I have already delivered my opinions in works which have been some time before the public, and have adduced many facts in corroboration of those opinions. I have maintained that, while the predisposition to the various forms of diseased action is congenital, and dependent upon varieties in the radical organization of the frame, the more direct causes are to be looked for in the agency of foreign substances on the body, and principally of those which are used as food and as drink. From an adherence to those opinions I have not seen

any reason, after more mature reflection and more extended experience, to recede. On the contrary, I hope that the facts which I am about to bring forward in the course of my present undertaking will go far toward establishing them beyond controversy.

I might continue to rest the proof of them upon the phenomena of the cancer, as my observations on that disease have been confirmed both by myself and others, since the publication of my "Reports" on that subject. Persons of very narrow information are ready to allow that any manner of living, which is found useful in the cancer, would probably be beneficial in other chronic diseases likewise; and that it would afford a satisfactory proof of the general superior salubrity of the proposed method. But as the prejudices of mankind are deeply rooted and widely extended, and the views, that different individuals take of the same subject, are infinitely various from the education, habits of thinking, or capacities of each, I have thought it may be useful to take a wider circuit. I have therefore thrown together such materials as appeared to me connected with the end I had in view. They will serve, I hope not inaptly, as an introduction to the cases which it is my principal object to relate, and will perhaps prepare the mind, in some degree, for the conclusions I propose to draw, by showing that the opinions which I have adopted may be supported by many collateral facts, and are by no means at variance with those of men of the most respectable authority.

It is surely in favor of these opinions, in general, that they are fundamentally in unison with the plain, unsophisticated, common sense of mankind. Though hardly any two men agree with regard to the salubrity of particular things, yet all are convinced of the general importance of the subject. That our diseases have an intimate connection with our habits, is allowed by all who have ever paid any attention to the subject. Some facts are so flagrant, that they force themselves upon the most heedless. Does any one dispute that luxury and intemperance enervate the mind, and destroy the body? that there is an essential difference between the peasant of the country and the artisan of the city? that, to possess a hardy and healthy body, it is necessary to adopt hardy and healthy modes of life? The influence of some customs becomes evidently imprinted on the features, and gives a character to the form and physiognomy. Who can mistake the lineaments of habitual drunkenness? The first questions, put by the valetudinarian to his medical adviser, are—Is this wholesome? is that wholesome? and, how ought

I to regulate my diet? Though on no subject whatever do there exist more deep prejudices, and, as I think, more pernicious errors, there are none concerning which many individuals are more seriously engaged in searching after the truth.

The venerable authority of the father of medicine may be adduced in support of the same doctrine; external causes being acknowledged by Hippocrates to have the greatest influence upon health and disease. He attributed much to the air; and on this subject he entertained ideas which were sufficiently correct. The spreading of epidemic diseases he attributed to the operation of some morbific exhalation, or miasma, corrupting the atmosphere. Sleeping and watchfulness; exercise and repose; the matters secreted, or retained within the body; and the dominion of the passions, were severally enumerated by this ancient philosopher as powerful agents upon the human frame. Regimen, in the most extensive sense of the word, includes the totality of these agents.

Hippocrates considered man to be, as the plants and animals by which he is surrounded, a product of the soil upon which he grows, and as having his qualities modified by the circumstances in which he is placed. He observed that nations had, like individuals, their characteristic physiognomy; and he taught that the forms and manners of men must be consonant to the character of the country which they inhabit. In support of this doctrine, he contrasted the Asiatics with the Europeans. His words are: "I say that there is a great difference between Asia and Europe, both with regard to the productions of the soil, and also the men. All the productions of Asia are more beautiful, and of a larger growth: for the climate is much milder than ours, and the manners of the natives more kind and cultivated. The cause of these phenomena is the constitution of the seasons; for Asia is placed toward the rising of the sun, removed from the cold. This, of all circumstances, tends to produce increase and mildness, since there is no predominant power to divert the course of nature, but an equality of force is prevalent throughout.

"This is not the case, however, throughout the whole of Asia: the inland parts, which are equally remote from the heat and the cold, are the most fertile, the best wooded, the finest, and watered the best by the rains or by rivulets. Thus it is neither burnt up by the heat, nor dried up from want of water, nor condensed by the cold; but it is fanned by southerly winds, and moistened both by rains and snow. Hence (as might be expected) the plants are abundant, whether raised by man, or

growing spontaneously: upon the fruits of which the inhabitants subsist, improving them by culture and transplantation. The cattle will be of a larger growth, more prolific, and the offspring more beautiful. The men are well nourished, of the finest forms, and the largest stature, and with little individual differences in these respects."

The Europeans, on the other hand, are depicted by Hippocrates as differing much more among themselves, both in their stature and form; which he attributes to their variable climate, exposed to great vicissitudes of heat and cold, of rains and droughts, and the inconstancy of the winds; from the co-operation of which the body is exposed to perpetual changes. These circumstances would undoubtedly produce a more robust frame, greater energy and activity, and a more adventurous spirit. But Hippocrates was perfectly aware of the powerful effect of political institutions upon the moral character. While, therefore, he attributes, in some degree, to the relaxing effects of the climate the timidity, effeminacy, and unwarlike spirit of the Asiatics, as compared to the Europeans, he ascribes still more to their institutions. "Almost all Asia," he says, "is under the dominion of absolute monarchs; a condition which, by necessity, engenders cunning, selfishness, and pusillanimity: the Europeans, on the other hand, possess liberty and property, living under the safeguard of laws; which produces a character marked by boldness, pride, and independence."

I cannot resist the temptation of quoting another of the examples by which this great man has illustrated the principles he has inculcated. It is taken from the same treatise from which the foregoing remarks have been extracted, a treatise which has been justly esteemed one of the most precious relics of antiquity. It seems to have furnished to the author of the "Spirit of Laws" the basis on which he raised the superstructure of his immortal work.

"I will add a few words concerning the inhabitants of the Phasis. Their country is marshy, warm, and thick-set; much rain falls during every season. The inhabitants live in the marshes, having houses made of wood, or of reeds, constructed among the waters; so they walk very little, except when they go to the city and market; but they sail up and down in boats, made out of a single piece of wood. There are many ditches; and they drink hot and stagnant waters, putrefied by the sun, and increased by the rain. The Phasis itself is, of all rivers, one whose course is the most sluggish. All the fruits of the country are unwholesome, without strength, and crude, from

the superabundance of water; nor do they ever ripen. Many fogs from the waters cover the face of the country.

"For these causes, the inhabitants of the Phasis are, in their appearance, different from other men. Their size is large, their bodies corpulent; the joints of their limbs are not visible, nor the veins; their color is pallid, as if suffering under jaundice; they speak the slowest of all men, living in a dull, obscure, and moist atmosphere; and they are in their bodies slothful, and unfit for labor.*

This is, perhaps, an extreme case; but there is strong internal evidence that the description is, in its principal features, taken from nature. The same causes, at this day, produce similar effects; as is experienced in our hundreds of Essex; in Walcheren, Beveland, and in Zealand—a country which is surrounded by the oozy and slimy branches of the eastern and western Scheld. The mass of the people are, in such situations, unhealthy, dull, bloated, and leucophlegmatic.

Nor is any truth more fully acknowledged by those who have taken an extended survey of human nature, than that the various races of men have their specific and characteristic forms; so that the exprienced eye can pronounce, from simple inspection, the race or country to which any individual belongs. Philosophers may not have determined, with perfect exactness, all the circumstances which modify the system, and impress upon it its peculiarities. Some of them, perhaps, have, as yet, eluded their research. That climate, including, in the term, all the circumstances peculiar to each particular situation, is of great efficacy, has never been doubted. The changes which are produced in the frame, either by an animal being brought up in a particular spot, or by its being transplanted to it, are not confined to the human race: the brutes equally partake of them; they affect alike the whole animated creation.

* The people described by Hippocrates in this passage, were those who inhabited the modern Mingrelia. According to the relation of an Italian traveler, there is a great similitude between the present and the ancient inhabitants. He says of them, "Very few of them reach a sound old age. Disease of the spleen is universal, which, not being treated with proper remedies in time, always terminates in dropsy. The tertian and quartan ague is so familiar, that, esteeming them nothing at all, even in the time of the paroxysm, the people follow their usual occupations. In the autumn, the quotidian is a universal malady. Catarrh and asthma are apt to suffocate men of mature years; jaundice and lethargy prove fatal to others."—*Lamberti, Relatione della Colchide, oggi della Mengrellia cap.* 27, *p.* 193.

CHAPTER II.

Opinions of Hippocrates concerning Food, and the use of Diluents; tha of Van Swieten.—General doctrine of Hippocrates on the effects of Water. Opinion of Hoffman; of M. Cabanis.—Cullen's opinion ex amined.—Some additional considerations on Water.

Such was the general doctrine of Hippocrates on the antecedent causes of health and disease, and those things which principally affect and modify the human system. But of all the circumstances, the influence of which it is necessary to appreciate, Hippocrates considered diet as by far the most important; and, under this term, he included all the matters used in the ordinary manner of living, namely, food, whether fish, flesh, milk, or vegetables; wine, and other fermented liquors; and water. He has declared in general, with regard to the qualities of food—"Whoever gives these things no consideration, and is ignorant of them, how can he understand the diseases of men? for, by every one of these, the body is affected and changed, either in one manner or in another; and of these is the whole of life composed, in health, in convalescence, and in sickness." Another passage of the same writer is still more direct and express, and indicates, in my opinion, a wonderful sagacity in the writer, considering the time at which it was written. In treating of the generation of anasarca, he suggests that the foundation of the disease is laid in a tuberculated state of the lungs. To prove this, he refers to the same condition of the lungs in domesticated animals: the ox, the dog, and the sow. In these quadrupeds, he says, tubercles full of water are formed in the lungs: they are readily found by dissection. And he adds—"Such things are much more likely to happen in man than in animals, inasmuch as we use a more unwholesome diet."*

* Hippocrates, Lib. De Internis Affectionibus, xxv. Hippocrates had probably seen hydatids: he says, "the water will flow out;" which is not true of the common tubercle.

An ingenious writer, speaking of domestic animals, observes, "The diseases of domestic animals are interesting, inasmuch as they show the power of unnatural food and habits to cause a variety of disorders, and confirm the opinion that human diseases are chiefly referable to the same cause. In dissecting tame animals, I have frequently found ossifications of the soft parts and preternatural tumors; but I never remember to have found any marks of organic disease in those which might be properly called wild."—*Forster on Spirituous and Fermented Liquors, p.* 50.

It may be doubted whether wild animals, living strictly according to their natural habits, suffer any constitutional disease; but the question

Many other passages might be cited, if it were necessary, from the Hippocratic writings to the same purpose. Accordingly we find that the most essential part of the treatment of diseases, prescribed by the father of medicine, consisted of rules concerning diet and regimen. The use of medicines was secondary and subsidiary. Several treatises on these subjects have come down to us, than which I do not know that the works of modern writers on the same topics contain any thing more useful or more correct.

On the use of watery fluids in the treatment of diseases, the opinion of Hippocrates was greatly at variance with modern practice. We urge the sick to dilute plentifully; and there was a time when physicians expected extraordinary benefits to result from attenuating the fluids by the copious use of liquids, the basis of which was common water. But the doctrine of Hippocrates was, that a copious use of such fluids causes "an effeminacy of the fibres, impotence of the nerves, stupor of the mind, hemorrhages, and faintings." In another place he says, concerning the use of water in acute diseases, "I have nothing to say in favor of water drinking in acute diseases: it neither eases the cough, nor promotes expectoration in inflammation of the lungs; and, least of all, in those who are used to it. It does not quench thirst, but increases it. In bilious habits it increases bile, and oppresses the stomach; and is the most pernicious, and sickening, and debilitating, in a state

cannot be easily determined. It is obvious, however, that those become most diseased, which recede the farthest from their natural habits of life. The common rat is naturally herbivorous. Mr. Lawrence, assistant-surgeon of St. Bartholomew's Hospital, informed me, that they have at the hospital a tribe of rats, which feed principally on the offals of the dissecting-room. These animals are very large; but, commonly, the liver is found diseased.

The common dog shows the effect of unnatural aliment in a very striking manner. This animal, by being confined to vegetable food, loses all the social qualities which has made him the companion of men, his fidelity, attachment, and sagacity. The naturalist who accompanied Captain Cook in his second voyage, remarks, "The dogs of the South Sea Isles are of a singular race: they most resemble the common cur, but have a prodigious large head, remarkably little eyes, prick ears, and a short bushy tail. They are chiefly fed with fruit at the Society Isles, but in the Low Isles and New Zealand, where they are the only domestic animals, they live upon fish. They are exceedingly stupid, and seldom or never bark, only howl now and then; they have the sense of smelling in a very low degree, and are lazy beyond measure; they are kept by the natives chiefly for the sake of their flesh."—*Foster's Observations, p.* 189.

Captain King's account of the dogs of the Sandwich Islands is to the same purpose.—*See Cook's Third Voyage, vol.* 3, *p.* 118, 4*to.*

of inanition. It increases inflammations of the liver and spleen. It passes slowly, by reason of its coldness and crudeness; and does not readily find a passage either by the bowels or kidney."* In conformity to these observations, the respectable Van Swieten observes, "While girls are daily sipping tepid, watery liquors, how weak and how flaccid do they become!" And the same writer positively affirms that, by the abuse of tea, coffee, and similar liquors, he had seen many so enervate their bodies, that they could scarcely drag their limbs; and many had from this cause been seized with apoplexies and palsies.†

That our common domestic waters possess different qualities, according to their various natures, and, in consequence, have different degrees of salubrity, is consonant to popular opinion. Indeed, this a persuasion so widely disseminated, as to afford reasonable ground for believing it the result of experience. I pervades remote regions, and people unconnected by prejudices, religion, manners, or education. "The old men of Brazil," according to Piso, "are as nice in their choice of waters, as people are with us in distinguishing the qualities of wine; and they accuse persons of imprudence who use them all without selection. They use the lightest and sweetest, and those which, falling from elevated grounds, give no sediment." Sir G. Staunton informs us, that "persons of rank in China are so

* If Hippocrates meant that the copious use of pure soft water causes "an effeminacy of the fibres, impotence of the nerves, stupor of the mind, hemorrhages, and fainting;" and if he regarded, that such water was "not good in acute diseases;" "that it neither eases the cough nor promotes expectoration in inflammations of the lungs;" "that it does not quench thirst but increases it;" "that in bilious habits it increases bile, and oppresses the stomach, and is the most pernicious, sickening, and debilitating in a state of inanition;" and, that "it increases inflammation of the liver and spleen," he was evidently mistaken, as is abundantly proved by the success of the modern water-cure. If the objections were stated against the use of *hard* and *impure* water, they would have some force, but not otherwise. There is no danger whatever in allowing persons the freest use of pure soft water, however cold, in acute diseases, although in some cases warm is probably the best.—S.

† That people generally injure themselves in many respects by the use of tea and coffee, it is easy enough to understand. Nervousness, tremors, palpitation of the heart, indigestion, paleness, and flaccidity of the muscular system, sallowness, decay of the teeth, and especially sick headache, are often caused by these articles, as many may prove to their satisfaction, if they will but resolutely abstain from them, and take only pure soft water instead, for one year. But that people will injure themselves with "tepid waters;" drink which has in its composition nothing stronger than pure water, we need not at all fear. The stimulants contained, and not the water, cause the evils alluded to in the text.—S.

careful about the quality of the water intended for their own consumption, that they seldom drink any without its being distilled." In Egypt, they prefer the water of the Nile. The gravel is said to be "universally the disease with those who use water from the draw-wells, as in the desert. In Hindostan, people universally ascribe most of their disorders to the offensive quality of bad water. It is useless to multiply authorities. Even in London, though it is not, in general, considered to be of so much importance, the selection of waters is considerably attended to: men have their favorite spring, or their favorite pump; and they think that some waters are more favorable to the health than others.*

I have little doubt that popular observations of this kind, in ancient times, laid the foundation of the doctrines of the celebrated treatise of Hippocrates, *de Aere, Aquis, et Locis;* and though some of the distinctions, found in that treatise, may have been founded upon local circumstances, and have been too hastily generalized, yet their accuracy upon the whole has been so little questioned, that succeeding writers have added nothing of importance to them.

Though Hippocrates has said, that healthy persons may drink, indiscriminately, such water as comes in their way, yet he declares that, to distinguish that which is wholesome is of the first consequence to health. The best waters he pronounces to be those which fall from high places, and uncultivated hills. He condemns water collected from the melting of snow,†

* After the Croton water (which is on the whole very good, and far superior to the filthy water of the wells, that had formerly been used,) had been introduced into the city of New York about two years, according to present recollection, the officers of the City Hospital published that there had been no cases of gravel admitted into that institution since the time when the Croton water had fairly come into use, but that before the complaint was frequent.—S.

† The writer, residing at Cos, could probably know nothing, from experience, on the properties of snow-water; and spoke therefore only from report. The report itself was, I conceive, grounded upon supposing the waters of the valleys of alpine countries to be snow-water.

Though the putrescent matter of common water cannot be separated from the earths or other matters which are dissolved in the water, its presence is very easily shown. If there be any thing inflammable in the residuum left by the water after evaporation, it indicates the presence of matter of this kind. This impregnation of common water, though little regarded by modern chemists, has been long known. Borrichius observed the residuum of common water to be inflammable; that it melted with bubbles, swelled, took fire, and burned with a clear white flame. Lucas, in his treatise on waters, remarked the inflammability of the residuum both of the Thames and New River water, and also of some others. This matter it is which makes water corrupt by keeping; which,

in which he was guided, probably, by popular prejudice. Even rain-water he advises to be boiled and filtered; otherwise it has

I believe, always happens in warm weather, if it be in a considerable body.

The method which I have commonly employed to determine the presence of inflammable matter, is to precipitate the water by a salt of lead (the acetate, or nitrate of lead), and to heat the precipitate, either alone, or mixed only with an alkali. If lead is by this process revived, the precipitate must, in part, consist of an inflammable substance. And by this simple method I have detected matter of this kind in every common water I have examined, except two. One of these was the water of the Bristol Hot Wells, a water which is known to be very light upon the stomach, though it is a good deal loaded with earthy salts.

To this inflammable and putrescent matter is owing the activity of common water, of which persons almost constantly receive proofs, whenever they change their residence. Yet it is astonishing (as I have said in the text) how much it has been overlooked. Dr. Lind, for example, says, that as the guinea-worm, which seems peculiar to Africa and some parts of Asia, "has been supposed to proceed from a bad quality of the water of the country, I procured the waters of Senegal, Gambia, and Sierra Leone to be sent me in bottles, well corked and sealed, in order to examine their contents. Upon opening these bottles, I found the water in all of them putrid, but the scent of the Senegal water was the strongest and most offensive. I could not, however, discover by the help of a good microscope the least appearance of any of the animalcules, nor did any chemical experiment discover uncommon contents or impurities in those waters. All of them, after standing some time exposed to the open air, become perfectly sweet and good."—*Lind's Works, vol. iii., p.* 56.

Here we see that Dr. Lind (a man of much intelligence) thought there was nothing amiss with these waters, though they were absolutely fœtid. And most writers have conceived with him, that all that was necessary to make water salubrious was to get rid of any offensive odor or taste. It is, however, perfectly obvious that if water is capable of putrefaction, it must contain a putrescent matter, even before it putrefies, and when it is esteemed to be *perfectly sweet and good.* What is the effect of this matter upon the human system is a proper object of inquiry, and what I have attempted to ascertain experimentally.

I have argued for the universal diffusion on the surface of the earth, and throughout the soil, and, in consequence, in the substance of animal and vegetable bodies, of a true arsenical matter. I have said that some substances may combine so intimately with this poison as to prevent its being developed and exhibited in its proper form by the common modes of chemical operation. Manganese is one body which has this effect. But it is not the only one. In this point of view, therefore, the explication I proposed in my "Inquiry into Constitutional Diseases" (printed in 1805) is too limited. But ulterior inquiries have shown to me that the nature of arsenic itself is misunderstood, and its properties very imperfectly known. It can be very easily shown that it is a decomposable matter, and possessed of different properties, as it is obtained from different substances. What I have been able to ascertain myself with regard to this body, I hope, ere long, to be able to lay before the public; and I believe the experiments propose to relate, will at least make an opening for obtaining an insight into some of the phenomena of nature, which have hitherto been involved in obscurity.

a bad smell, and occasions hoarseness in those who use it Hard and crude waters are not adapted to all habits, since they constringe and bind the belly. In countries where men are constrained to drink the stagnant and fœtid waters of wells, the belly and spleen must, in such persons, of necessity be injured. Some have calculus complaints; some, tumors of the spleen, strangury, and nephritic complaints, from a similar cause. The stagnant water of marshes must, in summer, be hot, and muddy, and ill-scented. Persons who drink them have the spleen enlarged, and the belly swollen. A train of evils is the consequence of the use of such waters: marasmas, dropsies, fluxes, agues, peripneumonies, insanity, and abortions. Such waters are wholly unfit for use.

The general doctrine of this venerable and philosophic writer, as to the agents which have the greatest influence upon the frame, he has summed up, in a manner equally decisive and concise, in the following paragraph.

"The variations of the seasons are the most powerful causes of the different natures of men. Next to these is the quality of the soil on which they subsist, and the waters they use. It is certain, that commonly both the physical and moral constitution of man is conformable to the nature of the soil on which he lives."

It cannot be doubted, that this doctrine is fundamentally conformable to nature. As I have already said, the assertions of succeeding writers, on the noxious effects of impure waters, are so strictly coincident with those of Hippocrates, that they would seem almost to be transcribed from them. Thus, the celebrated Hoffman writes: "Water is the most proper beverage for all animals; but care must be taken to use none that is hard, tophaceous, and heavy; since these kinds, from their passing with difficulty, and easily stagnating in the minute passages, are favorable to the generation of calculus, and to visceral obstructions. It has been often observed, that the drinking of hard and rough water has been pernicious both to men and animals; of which persons engaged in military service have given striking examples. Hard waters are most injurious to the viscera, and, in particular, to the spleen, as being very vascular; and, by stagnating in its small vessels, the whole gland is easily raised into a large tumor. It has been constantly asserted, that scrofulous tumors, of a great magnitude, are indigenous, from the use of hard and rough waters, in certain mountainous tracts where such springs abound. But the stagnant, putrid waters of marshes are chiefly to be avoided, which not only

corrupt the air, by depraved and pestilential exhalations, but are likewise capable of producing putrid diseases and fevers."

Many other authorities might be cited to the same purpose; since, in fact, there is hardly any physician of eminence, ancient or modern, with the exception of Cullen, who has not been sensible of the great influence of this element upon the animal economy. I do not think necessary to trouble my readers with numerous quotations from authors on this subject. I have myself little to add, in the way of reasoning, to what I have already laid before the public, in my "Inquiry into the Origin of Constitutional Diseases." Those who wish to be informed of the opinions of many other writers, I refer to Mr. Newton's publication, which he has entitled the "Return to Nature," in which he has brought together several very respectable authorities. Many others might be added to the list. As, however, I have seen it insinuated, that these are no more than antiquated notions, which have received no confirmation from the more accurate investigations of modern inquirers, and which have vanished before the correctness and precision of modern pathologists, I shall, in this place, introduce the sentiments of an enlightened French writer, the second edition of whose work (that which is before me) was published in 1805, the year in which I published my own "Inquiry." This writer is M. Cabanis, who says:

"Brackish waters, loaded with putrid vegetable matters, with earthy substances, or a considerable quantity of sulphate of lime, act in a very pernicious manner on the stomach and the other organs of digestion. The use of them produces different kinds of disease, both acute and chronic; all of them accompanied by a remarkable state of atony, and a great debility of the nervous system. Now, this atony or this debility is in its turn characterized by tormenting vaporous affections, which keep the mind in a continual state of agitation and lowness; or by an annihilation, almost absolute, of the functions, by a perfect state of imbecility. The waters called hard and crude, that is to say those which hold in solution a large quantity of sulphate of lime, and a small proportional quantity of oxygen, or rather of atmospheric air, make the deplorable enervation of the stomach and intestines pass with rapidity to the glandular system and the absorbent vessels; they load the glands, alter the lymph, and obstruct the different absorptions. From the obstruction of the glands, and the vitiation of the lymph, arise maladies, the effect of which is sometimes, I confess, to augment the activity of the brain, but most frequently to diminish

it; maladies which may terminate by leaving it hardly that feeble degree of action, which is indispensable to carry on the vital motions. From the defect of the different absorptions follow new alterations of the organs and the faculties, which all tend to degrade, more and more, the tone of the fibres, and the vitality of the nervous system. These effects are the limit of those which can be produced by the use of hard and crude waters; and, to produce them completely, requires probably the concurrence of some other circumstances, which have not hitherto been determined with sufficient exactness. But when the disorders produced by the stricture of the absorbent system are characterized in a more feeble manner, and are confined to an obstinate obstruction of the different abdominal viscera, the result still is hypochondriacal and melancholic affections, the moral effects of which are sufficiently well known."

Again, the same writer observes:

"According to observations the most constant, we know that hard and crude waters can cause lymphatic obstructions; that stagnant and vapid waters blunt the sensibility, enervate the muscular force, and dispose to all cold and slow diseases. It is equally well known, that in many countries, otherwise fertile and rich, the inhabitants are forced to use these unwholesome waters. The incommodities which they produce, quickly extend their action to every point of the system; the languor speedily passes from the organs to the ideas; to the inclinations; in a word, to the morals. This influence then evidently depends upon local circumstances."

Cullen, we know, has maintained an opposite opinion; the arguments which could divert so penetrating a mind from the perception of the truth cannot but merit consideration; to weigh their force will serve to give us a clearer insight into the subject I have undertaken to treat.

"I lived," says he, "for many years in a large city, in which the waters very universally employed were very hard; and, although softer waters were within their reach, the most part of the people used only the hard. But among this people I found no endemic diseases; and at least none that I could impute to the water they drank; and certainly none that I did not find as frequent in a city which I also practiced in for many years, whose inhabitants very universally used no other than a very soft water."

This reasoning involves two suppositions, neither of which appear to be well founded. 1st. It presumes that the bad effects of water on the body are in consequence of its hardness,

and in proportion to that quality. But the hardness of waters is communicated by the earthy salts; whereas it is the putrescent matter which is the most noxious principle of common water. This putrescent matter may be more abundant in soft waters than in hard; as is the case in the New River water, and still more in Thames water. 2dly. Dr. Cullen appears to have looked for some peculiar endemic diseases to be produced by the use of impure water; and, not finding any, to have concluded that the accusations against it are ill founded. But the real question is, What share does it bear in the production, not of any peculiar endemics, but of the common diseases which are infused throughout the community: a question, I apprehend, to be answered only by extensive observation, or by direct and appropriate experiments.

On this head I shall add but one or two observations to those which I have already offered in the work to which I have above referred. It is a matter of common experience that water, according to its different qualities, affects the stomach with a peculiar feeling, which we call *weight;* that the purest water feels the lightest; and what is reckoned, and, I believe, justly reckoned, the worst, feels the heaviest on the stomach. In healthy persons this sensation is little regarded; but in disease it becomes very distinct, and is often very tormenting. Sometimes the stomach feels as if it would burst; sometimes the sensation is as if a cord were tied round the middle of the body. In another place I have cited an example of this sensation being removed by the use of pure water.

Now it is impossible that this sense of weight and oppression can be caused by the mere difference of specific gravity between waters of different qualities. This is too trifling to be felt; and substances specifically heavier than these waters, solids for example, or even fluid mercury, may be received into the stomach, without occasioning any sensation of weight in the organ. This must be deemed therefore to be a sensation *sui generis*, the specific effect of the putrescent matter, or what I have termed the Septic Poison of the water; and it is probably complicated of the sensation resulting from the irritation of the mucous surface of the stomach, and that attached to the atony of the muscular fibres, yielding to the air developed by an imperfect digestion, and, at the same time, resisting the divellent force. Here then we have the direct proof of the pernicious effect of this matter upon the living fibre; and there can be no difficulty in believing that the same action which it exerts upon the stomach in the first instance, will be exerted upon every

other living fibre, to which it is applied. It is, however, applied to all; it accumulates in the body; and the more as the powers of elimination become more feeble, the action is continued, unceasing; and there is, therefore, no degree of injury, even to the complete destruction of the system, which it may not readily be conceived ultimately to produce.

I would observe further, that, with regard to the noxious and the deleterious effect of the stagnant water of marshes, there has been but one common sentiment among all writers, from the days of Hippocrates to the present hour, in assigning to this cause a portion of the remarkable insalubrity of such situations. Examined hydrostatically, it is found to possess the greatest specific gravity; and it is the most loaded with foreign matter. But the peculiar noxious principle of these waters is nothing but the corrupted animal and vegetable matters with which they are impregnated. These matters are, therefore, poisonous. In consequence, they ought to be suspected wherever they are found. In inquiring therefore into the salubrity of waters in general, or into that of any particular example, it is this impregnation which I conceive ought to be the chief object of research. Simple earthy matter (though much has been said against it) has never been shown to be particularly unfriendly to the human system. Metallic matter, of all kinds, is a more just object of suspicion. But the *putrid* or *putrescent* matter, the animal or vegetable substances in a state of decomposition, is that which is actively mischievous. It is immediately and directly deleterious. It is astonishing to consider how greatly the influence of this matter has been overlooked, even by writers who were fully aware of the general importance of the subject.*

It cannot, I think, be doubted that the inconveniences which have been found to result from the use of water alone, as a common beverage, have been the principal motive, which has induced men to have recourse to spirituous and fermented liquors as a substitute. By these means some of these inconveniences have been partially obviated or counteracted, but at the expense, probably, of still greater evils. But I return to a few more general considerations.

* It is a remarkable fact that in the western country animals generally —some say always—have diseased livers; so much so that this part is never used for food. The inhabitants too, who suffer generally so much from fevers, doubtless have all diseased livers to a greater or less extent. There is every reason to believe that the bad water which is so common throughout that country, is a prominent cause of the diseases of both man and animals in those parts.—S.

CHAPTER III.

Is disease essential to the nature of man?—The locality of particular diseases exemplified in remittent and intermittent fevers.—The hypothesis of Linnæus.—Contagions, Scurvy, Bronchocele, and Cretinism.—General Conclusions.

The belief in the existence of a first and supreme Cause, and the persuasion that benevolence forms a part of his nature, and entered, as it were, into the original scheme and intention of the Creator, in the formation of the universe, are so deeply impressed upon the human mind that to dissent from them is regarded as a species of impiety, and to avow this dissent as no better than downright madness.

It has been taught, both by ancient and modern philosophers, that the universe is, upon the whole, a perfect work, or the best that could have been possibly made. It has been hard, however, to reconcile the existence of evil with this hypothesis; and those who have attempted to solve this knotty problem have contented themselves with supposing that it has been the result of some inevitable necessity. One of the ancient sages adopted this explanation to account for the diseases of men. Crysippus was of opinion, that it could never have been the aim or first intention of the author of nature and parent of all good to make men obnoxious to diseases; but that while he was producing many excellent things, and forming his work in the best manner, other things also arose, connected with them, that were incommodious, which were not made for their own sakes, but were permitted as necessary consequences of what was best.

This certainly does not appear to be entertaining very exalted notions of divine power. To suppose either that diseases are not real evils, or to feign any hypothetical necessity for their existence, and to pronounce it impossible for Omnipotence itself to preserve the human body from them (for this account involves, I think, one of these suppositions), appears an equal extravagance.

When we consider the tendency of nature to perfection in all her works, and that this tendency is in nothing more apparent than in the structure of animal bodies, it appears indeed a strange anomaly that the human frame, the masterpiece of the creation, should be so liable to derangement and disease. If I

may say so without irreverence, it appears as if the most beautiful of designs had failed from error and want of wisdom in the execution. More than half the race perish in infancy, and of the remainder a large portion are the victims of pain and suffering. Of those who have strength sufficient to arrive at manhood, the greater part are doomed to have little more than a glimpse of life, and to perish prematurely. Of those even, who appear strong and healthy, if we examine narrowly into their habits or their feelings, we shall find hardly an individual who will not acknowledge some defect, some secret uneasiness, something that diminishes his present comfort, and which excites apprehensions for the future. In some, the solids destined to the support of the body are unequal to their object, and the bones yield to the incumbent weight; in others, the moving powers have a similar defect, the muscles hardly overcoming the resistance opposed to them. The senses are, in many, dull and imperfect; in many, they are preternaturally acute. The vital functions are often performed laboriously; the circulation is either sluggish or too rapid; the respiration straitened or hurried; the digestion is ill performed; the stomach oppressed with crudities; the secretions irregular; even the element in which we are placed appears ill suited to the organs to which it is destined to be applied; some cannot bear the coldness of the atmosphere; to others its heat is equally intolerable; and so strangely constituted are individual constitutions, that an air loaded with mephitic vapors appears better suited to them than one that is pure and uncontaminated.

Man prides himself upon possessing an intellect superior to that of all other animals, and to take reason for the guide of all his actions. But as far as happiness, or the mere absence of suffering, is the end of action, the reason of man appears to be inferior to the animal instinct. A brutal ignorance debases and enslaves the great mass of mankind. They appear incapable of acquiring knowledge; of perceiving the connection of the ideas which are laid before them, or the obvious relations of cause and effect. Thus they are void of all independence of thought or principle; a blind adherence to custom, or a slavish submission to authority, becomes the rule of life, and is substituted for self-government, and a manly obedience to the voice of truth and the dictates of reason.

The moral traits are as much distorted as the physical. The affections, which should link man to man, and make each human being regard his fellow-creature as his brother, are choked and almost extinguished. Envy, hatred, jealousy, and

all the malignant passions, predominate in the human bosom. The infliction of pain upon sensitive beings, instead of exciting compassion, is, with the multitude, a source of pastime and merriment. To such a degree are the strongest instincts of our nature perverted, that the first principle of self-preservation is finally destroyed; the hand is raised against the existence of its possessor, or the parental arm against the life of the offspring.

Such is an outline, too faithful, of the habitual condition, perhaps of the majority, of the human species. I omit the still darker shades of the picture; the tragedies which perpetually embitter domestic life; our crowded hospitals, from the gates of which shoals of supplicants are, by necessity, repelled; our surgical operations, the very thoughts of which make the blood run cold; and our madhouses, the interior of which presents views from which sensibility shrinks with horror and affright. Can we avoid asking ourselves, Is this enormous mass of evil then necessary and unavoidable? Does it result from the very nature of things, and the primitive organization of man? or, on the other hand, is it not factitious, the consequence of an artificial mode of life, of corrupt habits, or of accidents which may possibly be avoided? The determination of these questions is undoubtedly of the highest interest to the whole human race. I must confine myself within a straight and narrow circle, and consider only the physical evils of human nature. If we are forced to attribute these evils to the constitution of human nature, we must submit to them as we do to tempests and earthquakes, and the other convulsions of nature. If, however, there is reason to apprehend that a large portion of these calamities is the offspring of accident, of error, or of vice, we may expect, by the diffusion of knowledge, the correction of abuses, and, by the introduction of rational habits, to annihilate, or, at least, greatly diminish them. If the prejudices of the present age are too strong to allow any expectation of much instant benefit, it presents at least a more pleasing prospect of futurity, to animate the exertions of the philosopher and the philanthropist. And this view of the subject seems consonant to the ideas which appear implanted in every well-regulated mind, of the justice and benevolence of the Deity. I shall here bring forward a few facts which appear favorable to it.

In the first place, it is fully established and sufficiently well known, that tribes of diseases, which are fatal to vast multitudes of persons, are fixed to, and, as it were, domiciliated in certain

situations and certain soils, and are the direct product of matter generated in them, or of miasmas emanating from them. In all countries that are low and flat, overspread with lakes and ponds of stagnant water, and with large marshes, pestiferous exhalations excite malignant fevers of the remittent or intermittent kind, fluxes, and their attendant evils. The immediate agent of these diseases are heat and moisture acting upon dead animal and vegetable matter, producing in them a state of decomposition; in a word, certain forms of common elementary matter. In some cases, these are so active as to produce instantaneous death; at other times, they act more slowly, exciting diseases of the above-mentioned form, fatal to many, while others with difficulty escape.

Examples of diseases of this kind are abundant in the writings both of medical authors and of travelers. The works of Pringle, Cleghorn, Lind, and others, will readily furnish them. The districts in which they have been most commonly observed to be epidemical, are between the tropics upon the coast of Guinea; Hungary, which, from the same cause, is the most unhealthy country of Europe; the environs of Venice; the Pontine marshes; the island of St. Thomas; Guiana; Porto-Rico; Carthagena. In the western hemisphere it has been commonly called Yellow Fever. But as the immediate agents of these effects, viz., dead animal and vegetable matter, acted upon by heat and moisture, are diffused over the whole surface of the earth, situations such as those which have been enumerated are remarkable only as abounding in these agents, in the highest degree of force and concentration. The same effects are produced wherever the same causes exist. Matter of the same kind, generated in sufficient quantity and in a due degree of concentration, will generate fevers of these kinds in any situation whatever. Accordingly we find that there are seasons when such fevers are much diffused over countries in which they are not endemical. Agues are said to have arisen sometimes in London, excited perhaps by the filth of the streets or the putrefaction of the markets. Dr. Trotter remarks that they have been observed to take place on shipboard. His words are: "Wood improperly seasoned will, on certain occasions, produce a sickly crew. After a cruise of rainy and even foggy weather we often meet with fevers in a ship, attended with all the essential symptoms and forms of the remittent kind, occasioned by marshy effluvia. It is probable that the cause of these fevers is the same in a ship as on land."

Nor are diseases of this form the only consequences of the

pestiferous miasmas, and other morbific causes, which are accumulated in those situations. The continued action of these causes changes and modifies the system, imprints upon it a peculiar character, and engenders habitual disease, or an habitual predisposition to disease in those who escape the more violent and fatal attacks of malignant fevers. Obstinate hypochondriacal affections, elephantiasis, and obstinate leprous diseases, and premature old age, are said to be habitual to the unfortunate inhabitants of these ill-fated spots. They carry, imprinted in their form and features, the marks of the insalubrity of their residence; and thus verify the ancient remark of Hippocrates, "that the constitutions of men are conformable to the soil which they inhabit."

In illustration of this fact I may cite the statement of Bruce. "At Waldubba," he says, "in Abyssinia, violent fevers perpetually reign. The inhabitants are all the color of a corpse." At Gondar, the capital of this country, the same is said to be the case. An account of Captain Turner is still more remarkable, and deserves, I think, to be transcribed. It is in the following terms: "At the foot of the Bootan Mountains, a plain extends for about thirty miles in breadth, choked rather than clothed with the most luxuriant vegetation. The exhalations necessarily arising from the multitude of springs which the vicinity of the mountains produces, are collected and confined by these almost impervious woods, and generate an atmosphere through which no traveler ever passed with impunity. The effects were fatal to Captain Jones, and to a great part of the troops that served under him in 1772; and Colonel Sir John Cuming, one of the few that escaped with life, still feels its injurious consequences. Yet even this spot is not without inhabitants; although its influence has wholly debased in them the form, the size, and the strength of human creatures."

We may conclude from these facts (it is indeed the reason of my producing them), that these diseases which have swept away, and are daily sweeping away, large portions of the human race, are not occasioned by any debility or defect in the human constitution, but by the operation of extraneous and foreign causes. They are not therefore essential to the nature of man, but are accidental, and produced by the situations in which he is placed. And in this particular case the immediate agents are the common elements of nature, the matter which enters into the composition of organic beings in general, whether animals or vegetables, but, with its properties, changed by spontaneous decomposition. By this decomposition they are ren-

dered destructive and poisonous.* They are perhaps the most striking examples that can be produced of the suddenly deleterious effects of these agents, with the exception only of those vapors which produce instant death, or the poisonous winds of the African deserts.

The suddenness of the effect, when a person is placed in the situation in which the causes of these diseases are present, shows them to be produced by pestiferous exhalations, and not to be immediately connected with the insalubrity of the water. The exposure of a few hours is frequently enough to engender a fatal attack of disease. It is said that to sleep in the country adjoining the Tacazze, in Abyssinia, is death. However, at no remote period the occasional cause of these fevers was not understood; the observations of physicians and surgeons employed in the naval and military services have principally disclosed it. Linnæus ascribed them to the insalubrity of marshy water; and supported his hypothesis by much plausible reasoning. It is needless to examine the arguments he has employed. I mention the fact only to show the suspicions entertained by the most eminent observers with regard to the salubrity of water. It is indeed highly probable that it is a powerful concurrent agent in forming the unhealthy state of constitution of persons residing in these situations.

The consideration of contagious diseases leads to the same conclusions as the remittent and intermittent fever. This is a large class of diseases, and they cut off constantly numerous victims from society. Plague, putrid and nervous fevers (under the common denomination of typhus), small-pox, measles, hooping-cough, scarlatina (including the putrid sore throat), syphilis, and chicken-pox, are the principal examples of the most severe diseases of this tribe.† They are all of them produced by matter or exhalations from the human body. As there are societies of men in which they are unknown, and as, for the most part, they appear to have arisen at no very remote period,

* If an arsenical oxide be composed of common elementary matter, so loosely united as to be capable of decomposition, it may be easily conceived that during the decomposition of animal and vegetable matter, in which their elements unite into new forms, and in an infinite variety of proportions, some may form an arsenical oxide itself. Again, if this most deleterious poison be composed of the common elements, it is very conceivable that other deleterious matter, not exactly the same in kind, but as destructive, may be formed out of the same elements.

† Hydrophobia, the most terrible of the contagious diseases, is uniformly fatal; but is, fortunately, so rare as not to deserve mention as one of the diseases affecting the bulk of society.

there can be no doubt that these diseases are all of them artificial and factitious, the product of society, and not an essential condition annexed to the existence of man. The multitudes, therefore, who have perished by these diseases may be truly said to have been the victims, not of nature—not of any defect in the organization or powers of the human frame—but of the artificial modes of life, or of some other accidents and misfortunes incident to society.

Scurvy is another disease which has cut off vast multitudes of men. It has been satisfactorily traced to an improper system of dieting, and particularly to the want of a due supply of fresh vegetable matter. It is, therefore, wholly an artificial disease.

The most familiar and well-known example of disease being produced by locality is that of Bronchocele or Goitre. It receives its name even from the districts which it infests: being called with us the Derbyshire Throat, and even the Coventry Throat. These are the enormous scrofulous tumors, which Hoffman says are caused by the use of hard and rough waters in mountainous districts. The valleys of mountainous countries are its favorite residence, though it is by no means confined to such spots. The valleys where the disorder is most frequent, are those surrounded by very high mountains, sheltered from the currents of air, and exposed to the direct, and, still more, to the vertical rays of the sun. Even under a tropical sun, the same concurrence of causes produces similar effects. In Savoy and Switzerland, among the Pyrenean mountains, in the island of Sumatra, and in certain parts of Tartary, the bronchocele is endemical, and there are many corresponding features of resemblance in the situation where it is found. M. Saussure asserts, that in the Alpine countries he never observed goitre in any places which are elevated more than 500 or 600 toises (3200 and 3840 English feet) above the level of the sea; he noticed them in those valleys where the heat is concentrated, and the air stagnates; and observed that they usually cease where the valley terminates and the country expands into a large plain.

In situations favorable to the production of this disease, it affects animals as well as the human species. Even dogs are said to be subject to it. It is asserted also, apparently upon good authority, that it affects both sheep and horned cattle.

This is the disease which has, with the greatest confidence, been ascribed to the operation of unwholesome water, and it requires, indeed, a wonderful degree of skepticism to doubt that this is, if not the sole, at least a powerful antecedent and con-

curring cause. Popular opinion attributes it to this every where: in Europe, in North and in South America; and many respectable writers have thought this opinion well founded. Hoffman says that a particular well, in the village of Flach (*ditionis Tigurinæ*), is called by a term answering to *fons strumarum*, from its producing these swellings of the neck. Mr. De Luc, and Mr. Coxe, who have made many observations on this disease, have espoused this notion; and the much more weighty authority of the elder Heberden is on the same side. He says, "I think that the cause of the bronchocele is to be sought for in the water, a chemical investigation of which is therefore a great desideratum!" Those who have opposed it, appear not to have done so for sufficient reasons. It is confessed by Dr. Barton, who is not favorable to this opinion, "that the water in that part of the state of New York in which I have observed the goitre to prevail, besides holding in solution and diffusion a portion of calcareous earth, appeared to be otherwise very impure, and was certainly unpleasant to the taste." In other districts the same thing was noticed still more strongly. Others, who speak slightingly of this opinion, content themselves with asserting that the water was pellucid and well tasted. Such is the objection of Dr. Reeves; an objection certainly of very little weight, when unsupported by more particular examinations.

Mr. Coxe was informed by a surgeon practicing in Switzerland, that his principal method of preventing goitre consisted in removing the patients from the places where the springs deposit a copious calcareous sediment, which is called by the inhabitants *Tuf;* and if that could not be effected, by forbidding the use of water that was not purified. This surgeon even practiced distillation for the purpose of purifying the water.

On this subject I can speak a little from my own experience. In the parish of Horne, in the county of Surrey (a village six or seven miles to the south of Ryegate), is the house of a laboring man whose family consisted of five daughters. Of these, four, while girls, become affected with bronchocele. In all, the disease was formed on this spot; but it continued, and even increased after they had left it, going out to service. I saw one of them, a woman perhaps of twenty-four, married in the neighborhood; in her the gland continued swelled; but she said it was much diminished. The domestic water of this spot was a soft water mingling readily with soap; it had a peculiar and not agreeable taste; it deposited a small sediment by boiling, and showed (by oxalate of ammonia) a slight calcareous impregnation, but no more, probably, than is common to all the domes-

tic waters of this country. I used the process described in another place, by which I determined that it was much impregnated with putrescent matter, which I believe to be much more noxious than the calcareous impregnation; and I doubt not, therefore, that this water had an active share in forming the diseased constitutions of these females.

Without speaking positively on the antecedent causes of this disease, I think the most tenable hypothesis seems to be that which attributes it to the continued operation, with an inferior degree of force, of the causes which excite the intermittent and remittent fever. The village of Horne is low and damp, near the banks of the Mole; and formerly agues were common there. The heat and confined moisture of the places where it is endemical, point strongly to causes of this nature. Mr. Marsden says that in the valleys of the mountains of Sumatra, where this disease is common, there is a dense fog every morning which is hardly dissipated by the rays of the sun till the afternoon. It is also affirmed that where this disease is common, the bulk of the inhabitants are indolent in their disposition; and, in consequence, filthy, and having made little progress in civilization; they are said to be extremely wan and livid, and much subject to intermitting fevers. But whatever are the antecedent causes of bronchocele, it is certain that they must be applied for some years before they produce their full effect, and that the effect will remain for a very considerable time, after removing from the situation in which the disease was generated.

Whatever, too, are these causes there can be no doubt that they are local causes, and some modifications of common elementary matter. Other examples of diseases, whose antecedent causes are local, might readily be adduced; but I have said enough for my immediate object. From the facts brought forward, therefore, I shall make, in this place, one or two conclusions, which, though very obvious and conformable to many other facts in the history of disease, are little considered in speculation, and still less acted upon in the conduct of life.

Where bronchocele is common, a species of idiotcy of the worst kind, under the name of Cretinism, is also prevalent, and is obviously the effect of the same local circumstances. These miserable objects are radically defective in their organization: they are bereaved of all the powers, faculties, and privileges of humanity, and hardly preserve the form of human beings. We may therefore conclude, that there is no degree of morbid deviation from the healthy powers and structure of the body

which cannot be produced by the continued operation of local causes.*

But under the very circumstances in which these monstrous deviations from nature are produced, many are equal to all the common offices of life, and enjoy apparent good health. In the human body itself there is a certain degree of resisting power; in some stronger; in others more feeble; the most susceptible are those which most suffer. This adds to the difficulties of the inquiry. Men cannot easily apprehend that the things with which they support themselves, with little or no evident uneasiness, can be the cause of disease or of death in others; and from hence arise contention, caviling, and misplaced ridicule. But to those who consider the wonderful and infinite variety in the human constitution, a corresponding variety in the agencies of the same substances on different constitutions can offer no difficulty; nor is any fact in the history of human nature more firmly established by evidence.

* "The body of these poor creatures is stunted, their height not exceeding four feet. There is a total want of due proportion between it and the other parts, the height of the head with reference to the body being from one fourth to one fifth, instead of one eighth, the natural proportion; the neck is strong, and bent downward; the upper limbs reach below the knees, and the arm is shorter than the fore-arm; the chest narrow, the abdomen hemispherical, and of a length not exceeding the height of the head; the thighs, with the haunches, of greater width than the shoulders, and shorter than the legs, the calves of which are wanting; the feet and toes distorted. In the head, the masticating organs, the lower jaw, and the nose, preponderate considerably over the organs of sense and intelligence; the skull is depressed, and forms a lengthened and angular ellipsis; the receding forehead presents internally large frontal sinuses, to which the brain has yielded part of its place; the top of the head is flattened, instead of being vaulted; the occiput projects but slightly, and runs almost even with the nape of the neck, as in ruminating animals. The face is neither oval nor round, but spread out in width; the eyes are far apart, slightly diverging, small, and deep-seated in their orbits; the pupil contracted, and not very sensitive to light; the eyelids, except when morbidly swollen, are flaccid and pendent. Their look is an unmeaning stare, and turns with indifference from every thing that is not eatable. The elongated form of the lower jaw, the thick and padded lips, give them a greater resemblance to ruminating creatures than to man. The tongue is rather cylindrical than flat, and the saliva is constantly running from the angles of their mouth. Enlargement of the thyroid glands generally prevails, sometimes to an enormous extent. Indeed, this appearance is commonly considered as a distinguishing sign of cretinism. The other glands of the throat are also obstructed. Many of these poor wretches are both deaf and dumb; yet do they appear unconscious of their miserable existence. Stretched out or gathered up under the solar rays, their head drooping in idiotic apathy, they are only roused from their torpor when food is presented to them."—*D'. Millingen's Curiosities of Medical Experience.*—S.

The diseases to which we have now particularly adverted, or at least the contagions, and those obviously originating in locality, form no inconsiderable portion of the whole number which infest society, and occasion such an immense mortality. The small-pox alone has often been the occasion of one fourth part of the annual mortality; and it is not improbable that, now that it has been in a great degree suppressed by vaccination, the other contagions and the diseases which seem to arise spontaneously in the system will, in a great measure, supply its place. Now I would not dwell too strongly upon an argument merely analogical; nor say that because this large class of diseases is evidently artificial, all others must be so likewise. Analogy is but a fallacious guide; nor ought it ever to be confided in when it is possible to arrive at direct evidence. But so much may be said with perfect fairness. As a large portion of the diseases which cut men off in civil society are proved to be artificial, and there is reason to suspect the same thing of others in which so direct a proof cannot be obtained, there can be nothing extravagant or absurd in the supposition that they all are artificial, and to be traced to some morbific causes either of circumstances or manners. And should this hypothesis, after due investigation, prove correct, there can be nothing absurd, extravagant, or enthusiastic in the hope that, finally, successful methods may be discovered, either of treating them when formed, or, at least, of preventing their formation.

CHAPTER IV.

Mortality subject to fixed laws.—Erroneous opinions on this subject.—The artificial nature and identity of constitutional disease.

If these facts render it highly probable that locality, and other accidents of life, foreign to the body itself, are the circumstances which chiefly influence the health, the same truth is placed beyond controversy by the observations that have been made, in the mass, upon the human species. Bills of mortality, surveys, or parochial registers, have afforded the materials of these observations. To illustrate this position, I shall make use of the statements and inferences contained in the essays which form a part of Dr. Price's "*Observations on Reversionary Payments*," etc. I cannot follow a safer guide.

From these it appears, that in every particular place there is an invariable law which governs the waste of human life. In single years, owing to the seasons, to the absence or prevalence of epidemics, or other accidental circumstances, the quantity of disease may vary, and the number of deaths be less or greater. But taking the average of a series of years together, the same total numbers have been found to die in the same situations, in the equal successive periods of time. These facts are established by observations taken from the bills of London, of Northampton, of Norwich, in England, and of many other places in various parts of Europe. In situations moderately healthy, as in moderate-sized towns, the rates of decrease have been found to coincide very nearly with the hypothesis of Mr. de Moivre, who, assuming 86 years to be the utmost extent of life, supposed an equal decrement of life through all its stages, till it was finally extinguished. For example, of 56 persons alive at 30 years of age, one will die every year till, in 56 years, they will be all dead. The same will happen to 46 persons at 40, in 46 years, and so on, for all other ages. At most ages between 30 and 70 or 75, the results of this hypothesis are very nearly conformable to actual observations. But both in the earlier and in the later stages of life, the law of decrease is very different. In London also, and in large cities, in general the current of life flows with greater rapidity. In the country, on the other hand, communities are more healthy, and, in consequence, life is expended more slowly.

As life at all ages wastes according to invariable laws, so likewise does it at a given age. In consequence, the *expectation* of life either at birth, or at any given age, that is to say, the mean continuance of any given, single, joint, or surviving lives, may, from tables properly constructed, be calculated with mathematical certainty.

The proportions between the whole numbers living at any age and upward, and the whole number of the community, is a fixed proportion. This fact is established by observation, and is indeed a consequence of the invariable laws according to which human life is expended.

From these documents the havoc made in human life, by collecting multitudes of men together in great cities, is fully demonstrated. There is no stage of life in which this pernicious influence is not evident, but it is most remarkable in the earliest stages. In London, according to the most moderate computation, half the number born die under three years of age; in Vienna and Stockholm, under two. And other things

being equal, the insalubrity of towns appears to be in proportion to their size.

The proportion of persons who die annually in great towns, is found to be one nineteenth or one twentieth of the whole population. In moderate towns, it is from one twenty-third to one twenty-eighth. In the country, the proportion has been found to be from one thirty-fifth or one fortieth to one fiftieth or one sixtieth. In London, the number of years which a child at birth has been found, upon an average, to reach, is rather less than twenty. In Norwich, half die under five years; in Northampton, under ten. In the parish of Holy Cross, near Salop, the expectation of a child at birth is thirty-three years: one half the inhabitants live to thirty years of age. At Ackworth, in Yorkshire, half the inhabitants live to the age of forty-six. In the town of Manchester, one twenty-eighth part of the inhabitants die annually; in the country, in its immediate vicinity, the number is not more than one fifty-sixth part.

Large cities are as unfavorable to longevity as they are destructive of infant life, and unfriendly to health at every period. In country places it is the reverse. At Holy Cross, one in eleven and a half of the whole population die at upward of eighty years of age. At Ackworth, one fourteenth of the inhabitants reach the same age. At Northampton, the proportion is one twenty-second part; at Norwich, one twenty-seventh. But in London only one in forty arrives at this age; whereas, if other things were equal, the proportion in London ought to be greater than in other places, since at least one fourth of its inhabitants are persons who come into London from the country, in the most robust period of life, at which the probability of living to old age is the greatest. Of the natives of London, not more than one in sixty attains the age of four-score.

Though villages and country places are more healthy than towns, and that in a degree to excite astonishment in those who are imperfectly acquainted with the facts, yet there is a great diversity in the healthiness of different villages and country places. This demonstrates and exemplifies the important influence of locality in the production of disease, and on the length of human life. Marshy situations, conformably to what has been already said of their general insalubrity, are the most unfavorable to the health, insomuch that they are as destructive of life as large cities. Dr. Price has, in the following paragraph, strikingly contrasted the different salubrity of different parishes in the small district of Vaud, in the county of Berne.

"One half of all born in the mountains live to the age of 47. In the marshy parish, one half live only to the age of 25. In the hills, 1 in 20 of all that are born live to 80. In the marshy parish, only 1 in 52 reaches this age. In the hills, a person aged 40 has a chance of 80 to 1 for living a year. In the marshy parish, his chance of living a year is not 30 to 1. In the hills, persons aged 20, 30, and 40, have an even chance for living 41, 33, and 25 years, respectively. In the fenny parish, persons at those ages have an even chance of living only 30, 23, and 15 years."

The average mortality of England and Wales is calculated, in the year 1810, to be 1 in 49. In the parts subject to the ague, Kent, Essex, Cambridgeshire, and the East Riding of Yorkshire, the mortality is above this average. At Boston, in the fens of Lincolnshire, the mortality is 1 in 27. At Stamford, which is in the dry and upland division of the same county, it is only 1 in 50.

The duration of human life, then, is regulated by fixed and invariable laws. Nor does it at all affect the general deductions drawn from these facts, though the observations on which they are founded should not be correctly applicable to the present state of things. It is thought, and probably with reason, that the healthiness both of this empire and of the metropolis is improved since the time when Dr. Price published his observations. Dr. Heberden, the younger, estimates the present rate of mortality in London to be 1 in 30 nearly; a prodigious improvement if it be just! But it has been always found that the external circumstances of society remaining unchanged, the rate of mortality is uniform; and when this rate has been found to undergo any considerable and permanent alteration, it may be traced to some corresponding change in these circumstances. The extension of agriculture; draining and enclosure of wastes; cleansing of towns; ventilation of private houses; improvements in diet and clothing; such, in general, are the sources of improved health and prolonged life. I suspect myself that the increased cultivation of the potato, and its very general use among the laboring classes of London, has, more than any other single cause, contributed to the improved health of the metropolis.*

A fact related by Mr. Malthus, with regard to the town of Geneva, proves how great a change has really taken place in

* I have heard it suggested, not perhaps without reason, that the substitution of cotton for woolen clothing has been the cause of the disappearance in so great a degree, of late years, of the low contagious or typhus fever.

the same spot, and at no very distant period of time. In this town, in the sixteenth century, the probability of life, or the age to which half the born lived, was only 4.883—rather less than four years and nine tenths; and the mean life 18.511—about eighteen years and a half. In the seventeenth century the probability of life was 11.607—above eleven years and a half; the mean life 23.358. In the eighteenth century the probability of life had increased to 27.183—twenty-seven years and nearly a fifth; and the mean life to thirty-two years and a fifth.

The conclusions which forced themselves upon the mind of the enlightened and respectable writer who has principally furnished me with these materials, I cannot refrain from giving in his own language: "Death," says Mr. Price, "is an evil to which the order of Providence has subjected every inhabitant of this earth; but to men it has been rendered unspeakably more an evil than it was designed to be. The greatest part of that black catalogue of diseases which ravage human life, is the offspring of the tenderness, the luxury, and the corruptions introduced by the vices and false refinements of civil society. That delicacy which is injured by every breath of air, and that rottenness of constitution which is the effect of indolence, intemperance, and debauchery, was never intended by the Author of nature; and it is impossible that they should not lay the foundation of numberless sufferings, and terminate in premature and miserable deaths." To the same purpose, says another writer who is very competent to form a correct opinion, when his judgment is not warped by a favorite hypothesis: "Diseases have been generally considered as the inevitable inflictions of Providence; but perhaps the greater part of them may more justly be considered as indications that we have offended against some of the laws of nature." When persons of enlarged minds, and who are unfettered by professional prejudices, arrive at the same conclusions, it affords no weak presumption that they are justly formed.

These intelligent writers, then, have concluded that our diseases are, for the most part, artificial. But we must not confine ourselves to vague and barren generalities. It is essential to view the subject still more closely, and attend more exactly to the consequences which flow irresistibly from the data which have been established. This is the more necessary as there are, I think, many incorrect notions afloat on these subjects, and many who are acquainted with the facts do not appear impressed with their proper consequences.

We may say for certain, that it is not the fact that it is an established law of nature that a large portion of the human race must perish in infancy, or in very early youth. And yet this is both asserted, and appears to be believed, by some of our best medical writers. To this purpose Dr. Woolcombe, influenced evidently by the principles of Mr. Malthus, says (I quote at second hand from Dr. Watt's Treatise on Hooping Cough), "Since disease is one of the appointed checks to excessive population, and the plan of Providence in the creation of human life requires the termination of the existence of one third of its creatures before they have attained the age of two years, it may be doubted whether the annihilation of so efficient an instrument as small-pox can be admitted without the substitution of some equally destructive malady." If the premises were true, the conclusion would be inevitable. But they are in direct opposition to matter of fact. In this kingdom, in country villages and parishes, the major part live to mature age, and even to marry. In one place one half have been observed to live to 30 years of age, in another to 46 years (see p. 43), and in a particular village in the Alps, called Leyzin, one half of the inhabitants reach the extraordinary age of 61 years. What proportion, in these cases, die before two years of age, we are not informed, but probably not a tenth part of those born.* But the just conclusion from the facts is, that as there is this amazing difference in mortality, according to local circumstances and local habits—for both the one and the other should be always taken into the account—it does not seem essentially necessary, or "the plan of Providence in the creation of human life," that any who are produced healthy and perfect

* I have before me the Annual Report of the City Inspector of the number of deaths and interments in the city of New York during the years 1847 and 1848, in which I find that in the first of these years there were 15,788 deaths, and of these 7373 were of children under *five* years of age; nearly one half the whole mortality!

In 1848 the whole number of deaths in New York was 15,919: of adults, according to the Inspector's Report, 7020; of children, 8899.

According to the Report of the Health of Towns' Association, showing the comparative mortality and disease in the extreme districts of each county in England and Wales, compiled from the returns of the Registrar-General for 1841, the proportion of deaths under *five* years of age, to the total number of all dying (in the county of Lancaster, districts of Ulverstone and Liverpool), was 47.4. True, Lancaster was found the most unhealthy of all the counties of these two countries; yet wherever observations have been made in large towns or cities, the world over, we find an alarming amount of mortality among children, and such as no one in his sober reason can for a moment attribute to a Divine dispensation.—S.

into the world should perish in infancy. On the contrary, it is certain from these facts, that the greater part of the fatal diseases of infancy are under the control of situation and habits of life; and that, by a mere change of these external circumstances, they may be, if not wholly, yet for the greater part, annihilated. There is nothing, therefore, either contrary to analogy, or revolting to common sense, in the supposition that by a more exact attention to these circumstances, or by a discovery of the agents, which are more immediately destructive of human life, the whole of this tribe of diseases might be really extinguished.

Again, it appears that in certain places the expectation of life, or the number of years which, upon an average, a child at birth arrives at, is, in some places at least, double of what it is in others. For example, London and the island of Madeira are, or at least were, so circumstanced. In London, the expectation of a child at birth is estimated by Dr. Price to be little more than nineteen years; while in the island of Madeira, from the account of Dr. T. Heberden, it has been found that the same expectation is about thirty-nine years. If a child, therefore, born at London, living in London, and according to the habits of London, possesses strength of constitution sufficient to carry him to this middle term exactly, or nineteen years, it might be expected that if the same child had been removed at its birth to Madeira, and resided there, according to the habits of the place, he would still have reached the average period of this place, or thirty-nine years. Life then would have been doubled; and whatever may be supposed the disease which would have cut him off at nineteen, this disease would not have taken place till he had arrived almost at forty years of age. Thus it is rendered almost certain, that all the fatal diseases of early life are under the control of climate, situations, and habits of life.

Let us suppose that a person, born, bred, and residing in London, dies at forty. Had such a one been transplanted to Madeira at birth, though his life would not have been doubled, he might be expected to have gained a great many years. But at forty there are none of our chronic diseases to which a person may not be supposed to fall a victim. It may be cancer, or asthma, or dropsy, or any of the acute and fatal inflammations. It becomes, therefore, highly probable, that this whole tribe of diseases is under the control of climate, situation, and habits of life.

I would not be understood as advancing this argument as a rigorous demonstration, including every possible case. Some contagions, perhaps, are fatal to persons in full health, who

would otherwise live many years. The depopulation caused in many regions by the small-pox, shows this to be the fact, I think, of that poison. It is, therefore, not improbable that the same may be true of others; and the salubrity of some places may be owing, in some measure, to the absence of these contagions. Accidents, too, as extreme fatigue or extreme cold, may extinguish life, independent of all constitutional disease. These circumstances may make the bases of an arithmetical calculation uncertain, and cause a greater apparent disparity in the salubrity of different places, as far as depends upon locality and habits of life, than in fact exists. But after making all allowance for these grounds of uncertainty, it is still indisputable that there is a very great, and, indeed, an enormous difference in the length of life in different places, independent of what may be called accidental terminations of life, and such as fully justifies the general deductions which I have made.

I may be allowed cursorily to add, that though diseases are, in fact, a check to population, and thereby the demand for food is made equal to the supply at any given period, yet it does not appear that a deficient supply of food is commonly the efficient antecedent cause of disease, as the hypothesis of Mr. Malthus appears to imply. They are connected, not as cause and effect, but as it were accidentally, by the intermedium of the passions and interests of a certain portion of the community —the cultivators. In common times, a very small portion, indeed, of the reigning diseases can be ascribed, with any probability, to a deficient nutriment. All the contagions and all the effects of locality—I may add all the effects of drunkenness—act as powerfully upon the rich as upon the poor; and these comprehend the great body of the reigning diseases. Nor has it ever been proved that, upon the whole, persons in easy circumstances live longer or raise larger families than the lower orders. Whatever may be the imaginary mischiefs of an excessive population, they neither are, nor does it appear that they ever have been in action. Hitherto an increased demand for food, like a demand for all other commodities, has occasioned an increased supply, and that in proportion to the demand. This is true, at least, in civilized communities, versed in the arts of agriculture.

The different healthiness of different places is popularly ascribed merely to a purer state of the atmosphere; nor would I deny the debilitating influence of an impure atmosphere. But we should consider that the diseases of large towns, and the diseases of the country, are, upon the whole, the same dis-

eases; only in the towns they appear and prove fatal at an earlier stage of life. We cannot, therefore, directly trace the specific influence of an impure atmosphere; we can only suppose it to accelerate the access of disease from other causes, or to render it more fatal. But the phenomena are essentially the same, whether they happen in great cities or in country villages; in neither the one nor the other of these situations do we meet with diseases that are absolutely peculiar, and exclusively confined to the spot on which they appear. We cannot, therefore, acknowledge distinct causes as generative of disease, in large cities, from which the country is wholly free. We can only suppose that in cities the causes, be they what they may, are more active and concentrated.

There are those who appear to think that the essential difference of climate consists merely in a difference of temperature. They propose, by artificial methods, to correct the evils which they attribute to the coldness of our atmosphere; and they hope, by what they call a *regulated temperature*, to arrest the progress of, and even to cure, the most frequent and most fatal of our diseases. But it should be considered that though temperature has very considerable influence over the symptoms of disease, it has little or none over its general results and final termination.

In different climates disease assumes different forms, and fixes its seat upon different organs. In the East Indies, practitioners hardly see the greater part of our European diseases; rheumatism, catarrh, pleurisy, peripneumony, headaches, and toothaches are wholly unknown. But instead of these almost universal European diseases, another class, which are hardly heard of with us, except perhaps for a month or two toward the close of the summer, are habitual and universal. They occupy the liver, intestines, and mesentery, occasioning redundancy of bile, hepatic congestion, fluxes, and other disorders indicative of increased mobility and irritability of all the parts of the system, comprehended within the extent of the cœliacal and portal circle. These differences may, probably, be justly ascribed to permanent differences of temperature, though we are wholly ignorant of the mode in which they operate. But in point of general salubrity, the warm climates do not appear to have any advantage over the temperate; and, therefore, though the symptoms of some particular cases of disease may be alleviated by the mere avoiding of cold, yet it is highly improbable that such a precaution alone can avert or much retard the fatality of any fixed diseases.

To the proposal for the use of a *regulated temperature* in consumption or other diseases, there lies a fundamental objection, independent of the weakness of the proofs by which it is supported; this is, that it is applicable only to persons in easy circumstances. If there is any law in the government of the universe more steady than another, it is that nothing, which is truly useful, is not useful to all. Neither food, nor clothing, nor medicines, nor a covering from the atmosphere, nor knowledge sufficient for the guidance of life, are confined to any rank of society. Every plan of acquiring, whether it be health or happiness, which is not communicable to all, will assuredly prove abortive.

Though temperature alone will not counteract powerful morbific causes, whether of diet or of locality, it cannot be doubted, I think, that warmth is, within certain limits, favorable to the human constitution. But a change of climate includes commonly a great change of other circumstances besides temperature, and it illustrates most forcibly the effects of locality. These effects, though men have very indistinct notions as to their immediate causes, are universally acknowledged and acted upon. Upon it is founded the advice given in most obstinate diseases, to try what is called change of air. When we reflect upon the astonishing difference in the salubrity of different places, we see clearly upon what foundation this advice rests; and can feel no surprise at the great benefit which has been often experienced in obstinate diseases from a change of residence. Complaints, which have resisted the most judicious treatment, often quickly subside, as it were spontaneously, by quitting the situations in which they were formed. How many gain health instantly by going out of London? This is a point on which the voice of all ages has been unanimous. "In young persons afflicted with epilepsy," says Hippocrates, "changes effect the solution of the disease, principally of age, and place, and manner of life." The daily experience of every individual corroborates, in some degree, these remarks. There hardly exists a person of some experience in life who has not found, with a change of residence, some corresponding change either in feelings or health.

Upon these principles, if a person is suffering under an habitual disease, which resists medical treatment and threatens to shorten life, a more reasonable proposal could not be made than for him to remove to a situation where the bulk of the inhabitants had been observed to enjoy the best health, and to attain the greatest longevity. The ancients, as we are informed

by Vitruvius, inspected the livers of the animals of a country in order to judge of the salubrity of its soil and productions. They did not act without reason. But our authentic registers of mortality afford a still surer guide; and I can hardly avoid wishing that they had been more frequently consulted for this purpose. Such a measure would surely be more rational than sending the sick all promiscuously to the sea, or, as Dr. Gregory has somewhere said, from one foolish watering place to another foolish watering place. In these things, however, fashion has been more powerful than principle; and so it may be expected to continue.

It is obvious, from many considerations, that the quantity of mortality is quite inconsiderable when compared to the general quantity of sickness; though this is a subject on which it is impossible to form a calculation. Men are not always short-lived because they are unhealthy, nor is great and apparently very dangerous illness, in different stages of life, incompatible with arriving finally at old age.* Little dependence, therefore, can be placed upon solitary observations with regard to the effect of particular habits, or modes of treatment. Few are duly qualified to form a just estimate of such things. I am apt to think that, in this respect, even the sage Cornaro deceived himself. It becomes then of the first consequence to view mankind as much as possible in the mass, and to obtain, as far as it is in our power, general results.

If, in fact, it is established by such observations that our diseases are the offspring of our habits, and of the circumstances in which we are placed, it must follow that of those who are placed in the same circumstances, however various are the forms and external appearances of disease, there must be an absolute identity in its essence. This must, I think, be correctly true of all those diseases which arise, as it were, spontaneously in the habit, independently of accidental circumstances. Nor can I exclude from this class the acute inflammations which are commonly regarded as a species of accident, produced by some foreign circumstance recently applied, as severe cold. The inflammations require a peculiar state of the constitution for

* A remarkable example of this may be found in the Commentaries of the elder Heberden. "That very eminent physician, Sir Edward Wilmot, before he had completed his twentieth year, labored so severely under a consumptive disorder, that, as he himself told me, not only his relations but the most skillful physicians despaired of his recovery; he lived, notwithstanding, and enjoyed good health beyond his ninetieth year."—*Heberden Commentarii, p.* 324.

their production, as well as an immediate external cause; and they have their seat in various organs, according to the different time of life in which they occur. It is highly probable that when the acute inflammations prove fatal, the vitality of the system is destroyed, as it were, before the attack. Such persons should be considered, therefore, to be as completely worn out as if they had died of a lingering disease: of dropsy, or of consumption.

In a system like that of the human body, consisting of a congeries of different organs, each independent, and endued with peculiar powers and actions, but each likewise connected with the whole, and conspiring to a common end, there can be no difficulty in comprehending how the same agents should, upon different individuals, produce dissimilar effects. Nature, or the supreme wisdom which has formed, sustains, and animates the universe, seems to delight, if we may venture so to speak, in conjoining the most admirable simplicity with the most astonishing variety. From a few elements, and which our ignorance probably makes more numerous than they are in fact, we see living beings, whether vegetables or animals, so diversified that human life is too short to permit us to become acquainted with their various forms and properties. Is it then improbable that a few agents should produce various effects upon the bodies of men—a race of beings no two of whom are alike, and of whom not one individual preserves an absolute identity for two successive days, or even for two successive moments? A familiar example may render this truth more evident. How variously does wine affect different individuals? One can bear two or three bottles, another is giddy with half a glass-full; one becomes jocund, another splenetic; one wakeful and sprightly, another heavy and sleepy; one good-humored, another is driven to madness. What we see in the effects of wine, we can readily suppose of other agents.

If this were a simple matter of speculation it would be of little moment. But I have dwelt upon it on account of the practical inferences to which it obviously tends. If we can show that the antecedent causes of various diseases are the same, though the immediate symptoms may demand various remedies, yet the radical treatment may and ought to be the same, however opposite the apparent forms of the disease may be. This evidently is to remove the antecedent causes as much as it is possible. Then, if the radical and inherent powers of the system have not been destroyed, it may be expected, if not wholly to recover, at least to show a constant tendency to

recovery. In what degree this can take place it is in vain to speculate, independent of experiment. Each case will have something distinct and peculiar. The bow which has been long bent will, when the string is cut, tend to regain its straightness; but it may ever retain some marks of the force impressed upon it. Suppose this bow to be the branch of a living tree, the result may be still the same; but the cases will be more parallel.

When we say that the phenomena resulting from the action of the same causes must be deemed to be essentially identical, we must limit ourselves to the strict terms of the proposition, and by no means conclude that no morbid appearance can arise in the body which may not be distinctly traced to such causes. It must be considered that an animal body is a machine endued with internal and inherent self-moving powers, which it preserves, and which are in action as long as life continues. Changes take place from the operation of these inherent powers, which, if they are attended with pain, and a derangement of the ordinary functions, are considered as diseases. The teething of children is an instance of this. In like manner acute diseases may frequently be suspected to be natural processes, taking place, perhaps, in morbid bodies. In the present state of our knowledge, and the great obscurity in which these subjects are involved, as it would be the height of presumption to affect to explain all the phenomena of life, so would it be captious and uncandid to object every accidental and unforeseen occurrence. We must content ourselves with approximating to what appears, upon the whole, to be the truth. Anomalies and difficulties must be expected to arise which, perhaps, we may never be able to elucidate; and the explication of which must be left to time and the industry of future inquirers.

These few remarks, which appear naturally to follow from the facts established with regard to the laws of human mortality, may be sufficient to render probable the general principle, that the efficient causes of constitutional diseases and premature death are to be sought for in the action of the substances which are applied to and affect the body. But to gain useful information we must enter into a more particular examination of what these really are.

Now any substance whatever which produces a change either in the composition, in the sensations, or in the motions of the body; in a word, which affects it as a living system, may be justly called an agent, and as such must conspire toward the general result either of healthy or diseased action. As such,

the effect of all such matters, of every kind, ought to be taken into the account, and their action distinctly considered. But this is a task, the proper accomplishment of which cannot at present be hoped for. Man, in the wantonness of power, or under the caprices of appetite, makes almost every thing he can lay his hands on subservient to his real or artificial wants. We must therefore of necessity confine ourselves to those agents which are most universally applied, and which appear to be the most effective.

With regard to the generation of constitutional diseases, we may, I think, safely confine ourselves to four principal agents. These are, 1st, impure air; 2d, impure water; 3d, improper aliment; and, 4th, fermented liquors. These are the things which appear really and effectively to produce the great bulk of the reigning diseases, or at least to form the morbid constitution out of which these diseases spring. I always except those which are produced from contagions. Each of these agents is of itself, perhaps, under certain circumstances, powerful enough to produce disease, and even death; and very commonly men are exposed to them simultaneously. In a systematic treatise each ought to be separately considered. But as my own immediate object is principally to confirm the propriety of the treatment I myself proposed in constitutional disease, I must confine myself to what I deem more directly connected with this end. On air I have nothing to say. On water I have nothing further to add to what I have already laid before the public. Some observations on the utility of vegetable regimen, the mischiefs of the regimen in common use, and a few remarks on fermented liquors, is all that I propose to add to the introductory part of my present undertaking.

CHAPTER V.

The power of Habit.—Diseases exasperated by a full diet.—Illustrations of the beneficial effects of abstemiousness.—Dr. Barwick.—Francis Pechi.—Wood, the miller of Billericay.—Apologie du Jeune.—Estimate of the powers of Vegetable Regimen.

However pernicious any substance or application may be, we find that use in a certain degree reconciles us to it; that which was at first offensive may become at length agreeable; and what was at first manifestly injurious may become apparently

indifferent, or even salutary. Such is the influence of habit, by which the constitution is rendered insensible of constant irritations, if they possess only a moderate degree of force; and a craving or appetite is formed for things hurtful in themselves and most foreign from our proper nature. But this habit, if considered in the body itself, must consist of a series of motions and actions, the seat of which is the sensorium; which motions must have an opposite direction to, and so counteract the effect of the irritating cause. In this way only, according to the known properties of the nervous system, is the power of habit conceivable. But however it be, the body must be under the constant influence of a foreign and external force; this force must subvert the natural actions of the system, and warp them from their proper objects, which must ultimately produce effects proportionable to the magnitude and duration of the irritations applied.

We deceive ourselves, then, if we think that any thing which is wrong in itself can be made right by habit, or that what is hurtful, if done seldom, will become innocent by being constantly repeated. By this repetition we may become insensible to the momentary irritation, but only to suffer with the more severity ultimately.*

The use of animal food is one of these habitual irritations to which most persons, who have it in their power, voluntarily subject themselves. Nothing need be said to show that this custom produces a great change in the system in its ordinary state of health. This is a change which, as long as health continues, is commonly thought to be for the better. But omitting wholly that consideration, it seems certain that it predisposes to disease, and even of those kinds the immediate origin of which may be traced to other causes.

It has been observed that the laboring negroes of the West Indian islands are almost wholly exempt from the scourge of the yellow fever, which has cut off such numbers of the other classes of the residents. Upon this observation it was proposed, when the same disease invaded Philadelphia, and was

* It may be observed, that when by habit we have conquered any dislike or formed any appetite for any substance, however unnatural, the dislike does not appear to return by relinquishing the habit. Tobacco is at first abominable; but let a man once become fond of it, the relish will continue for life. He may cease to smoke or to take snuff, because he thinks it wrong or hurtful; but the original disgust never returns. So it is of olives, fermented liquors, and other things. This shows the impropriety of giving children wine, or any thing else which it would be better that they should never like.

thought contagious, to employ negroes to attend the sick. But here it was found that negroes were some of those who were the most subject to the disease. The principal cause of this difference is said, by the physician on whose authority I relate the fact, to be, that in Philadelphia the manner of living of negroes was as plentiful as that of white people in the West Indies; the reverse of which is known to be the fact in the islands.

For the same reason, of living much more upon vegetables, and being more sparing of fermented liquors, the French are known to have suffered much less from the ravages of yellow fever than the English, who use the same diet to which they had been accustomed in northern regions. Something of the same kind has been observed with regard to the plague at Constantinople. Timoni, in his account of this disease, asserts that the Armenians, who live chiefly on vegetable food, were far less disposed to the disease than other people.*

I have little doubt, from what I have observed during the course of my own practice, that the common contagious, or, as it is called, the typhus fever of this country is greatly exasperated by full living. This fever rarely attacks persons in the better lines of life, obviously because they are little exposed to the exciting causes of it. But when they suffer it is very apt to be fatal. Several medical students have been cut off (I speak of what happened some years ago), both in London and Edinburgh, under the care of the best physicians of the country. But among paupers, and in the workhouses, the danger is, commonly speaking, very little, and they recover readily in circumstances under which it is probable that those who are called their betters would have sunk.†

* The Greeks in Smyrna, during Lent, Howard tells us in his work on Lazarettos, page 41, edition of 1792, at which time they ate only vegetables, were very seldom attacked with the plague, while among those who ate flesh the contagion made great havoc.—S.

† "If Scotland," says Moore, "is less subject to *pestilence*, it is more exposed to *famine*, than England."

It is stated by Dr. Rush, that during a desolating fever at Leghorn, "Of the *beggars* who had scarcely any thing to eat, and who slept half naked every night upon hard pavements, *not one died*."

"It is a full rather than an empty stomach," says Dr. Paine, "that aids in breeding pestilence. And we may affirm, upon the broad ground of experience," this author further remarks, "that he will enjoy the best chances of escape who renounces a stimulant diet while his system may be only in a state of morbid predisposition. It was upon this ground that the beggars in Italy escaped; why Audubon and his party enjoyed the fullness of health in the jungles of Florida."—S.

It seems, moreover, highly probable that the power inherent in the living body, of restoring itself under accidents or wounds, is strongest in those who use most a vegetable regimen, and who are very sparing in the use of fermented liquors. This has been observed among the eastern nations. Sir George Staunton says on this subject: "It is, however, to be remarked that the Chinese recover from all kind of accidents more rapidly, and with fewer symptoms of any kind of danger, than most people in Europe. The constant and quick recovery from considerable and alarming wounds has been observed likewise to take place among the natives of Hindostan. The European surgeons have been surprised at the easy cure of sepoys in the English service, from accidents accounted extremely formidable." This felicity the relator attributes to the causes which I have mentioned. I have received the same account from other quarters.

These facts are enough to induce a suspicion that our diseases are much exasperated by our manner of living, and the full diet of animal food, to which we are habituated. They may serve to show to what may be ascribed in some degree the great difference between the mortality which prevails in great towns and in the country. In all situations the mass of this mortality must be composed of the laboring classes. These classes are allured to the cities by the temptation of high wages, which are expended, partly in direct riot and excess, but even by the most sober-minded in procuring for their families a more luxurious mode of life than could be afforded by the customary rate of wages in the country. A daily meal of meat becomes to be thought necessary by persons who, in the country, must have been contented with a scanty portion once a week. To be able to procure this becomes a distinction in society which the people are taught to look up to as the reward of industry; while to be confined to what is called a *poor* diet, that is to say, to the diet of the poor, is reckoned low and disgraceful. Besides, the crowding together a number of persons in confined and ill-ventilated habitations favors the generation or the diffusion of a number of contagions. But these contagions act with greater virulence upon bodies pampered by a full diet of animal food. Thus do these places become a species of hot-beds, in which the seeds of mortality are thickly scattered in the soil most favorable to their growth and propagation. The bodies of men are most corrupted; the powers of life most enfeebled by destructive and enervating habits; moreover, putridity of all kinds, both of animal and vegetable matters, and

contagions of all kinds, are in such situations collected and accumulated. In a word, in great cities all the causes of mortality are concentred.

One would be apt to imagine, from the common practice of most of our physicians, and still more of our medico-chirurgeons, that excess and intemperance were the regular methods of curing diseases. They have been laboring, during almost the whole of my medical life, to prove to the public that the doctrines of abstemiousness, inculcated by several of our predecessors, are a mere prejudice and error. In almost all chronic diseases, to forbid the use of vegetables is a part of the established routine. If there be a little heart-burn or flatulency, all vegetables are instantly proscribed. Infants, even, are loaded with made dishes, and their breaths smell of wine and strong liquors. Nay, to such an extent are these abominations carried, that, when their stomachs revolt against these unnatural compounds, with instinctive horror, and the importunities of nature cannot be wholly resisted, a little fruit is held out to them as a sort of premium, and as a reward for forcing down the nauseous farrago which they loath.

Notwithstanding the prevalence of these abuses and absurdities, and the pertinacity with which they are defended, no truth is better established than the fact, that multitudes of valetudinarians have been restored to health by methods directly the reverse of those recommended by these practitioners. Many have been the examples of persons who, having been reduced from affluence to poverty, and forced to subsist upon hard fare, and to gain their livelihood by daily labor, have exchanged for their useless riches the inestimable treasure of health. Nor have instances been wanting, in which the constrained abstinence of a prison has proved a remedy for some obstinate disease.

Dr. Cheyne has given us a history of this sort. "Dr. Barwick tells us," says he, "in the life of his brother, who, in the late civil wars, had for many years been confined in a low room in the Tower, during the usurpation, that, at the time of his going in, he was under a phthisis, atrophy, and dyscasy, and lived on bread and water only several years there, and yet came out at the restoration, sleek, plump, and gay."

Ramazzini has recorded the history of a man who lived in prison for nineteen years upon bread and water only, and lived afterward healthy and free from the gout, from which he had before been a great sufferer.

In Schenk's collection, the following amusing story of the

same description is found: "The noble Francis Pechi—when he had mounted his mule, to dispatch some commissions of our illustrious duke—a man of fifty, gouty, and much oppressed with the continual torments of this disease, was secretly thrown into prison by a certain marquis, his wife, only son, and other people thinking him dead. In the year 1556, after a lapse of twenty years, he was found by the French, who took the citadel, and to the astonishment of all the inhabitants of Vercelli, preserved like Lazarus from the tomb, he walked through the city, with his sword by his side, without stiffness of his joints, without the aid of a stick. He thus escaped all the misery of the gout by means of a slender diet, imposed on him by his jailers; and finding his wife and son dead, he began to claim his houses, farms, and other property, which had been sold, and were of great value. In diet, therefore, is the medicine."

Cures, which appear almost miraculous, have been at all times related concerning the most intractable diseases, with a confidence that should awaken our attention, if it do not overcome our incredulity. The elephantiasis was the disease which the ancients held in the greatest horror: the miserable victims were deserted by their nearest friends, and banished to the wilderness, there to perish in solitude. Aretœus has recorded that some of these sufferers were reported to have been restored, nature renewing the parts which had been destroyed by the disease and thrown out of the system. On these cases it is well remarked by Cocchi, that "we should not believe that their cure proceeded from their having eaten vipers, as the account relates, but rather from their total abstinence from animal food, and a continual use of herbs, as more powerful philosophical reasons induce us to believe."

The former prevalence of leprous diseases throughout Europe, which occasioned the institution of lazar houses for the reception of the loathsome objects afflicted by them, may make us suspect that such accounts are not wholly fabulous. The leprosy is nearly extinct, and the lazar houses have fallen to decay, owing, no doubt, to the improvements of agriculture. We have a remarkable instance of the effects of diet on the diseases of a nation, in the inhabitants of the isles of Ferro. Since fishing has declined among them, and the inhabitants have cultivated corn, and live upon other food, instead of whales' flesh and bacon, the elephantiasis has ceased among them. Galen ascribes the prevalence of elephantiasis, among the poor inhabitants of Alexandria, to similar causes, namely, the habitual

use of salted meats. The species of animal was little regarded; among others, they did not disdain the flesh of the ass.

Need I cite the well-known history of Mr. Wood, the miller of Billericay? This man, from a long course of gluttony, eating voraciously animal food three times a day, with large quantities of butter and cheese, and drinking strong ale, became very fat in his fortieth year; and, in three or four more years, his health failed; he had a constant thirst, great lowness of spirits, violent rheumatism, and frequent attacks of gout. He had two fits, which were called epileptic, and had often a sense of suffocation, particularly after his meals. By altering his regimen, and pursuing a strict course of abstemiousness, he re-established his health, and continued to enjoy good health for many years. He left off animal food and fermented liquors. His solid food was either sea biscuit, or flour made into a pudding, being mixed either with skimmed milk or with water, and boiled. He abstained from all fluids, except what entered into the composition of his pudding. Under this course of abstinence, he lost his corpulence, and became a middle-sized man, healthy and active, and his strength increased instead of diminishing. This man died in his sixty-fourth year. No one that reads his history can doubt that he prolonged his life many years; and, probably, had his diet been regulated upon still more correct principles, he would have lived several years longer.

That longevity is promoted by vegetable regimen is established by the concurrence of numerous and authentic observations. Ulloa testifies that of the South American Indians both sexes afford many instances of remarkable longevity. "I myself," says he, "have known several who, at the age of a hundred, were still very robust and active, which unquestionably must, in some measure, be attributed to the constant sameness and simplicity of their food." Humboldt's testimony, as to their longevity at the present day, is to the same purpose, except that many cut themselves off by the use of spirituous liquors. He says, "While I was at Lima, the Indian Hilario Pari died at the village of Chiagata, four leagues distant from the town of Arequiga, at the age of 143."

It is the mountainous and barren districts, where frugality and simplicity of manners are the necessary habits of the bulk of the community, that have ever been the favorite abode of health and longevity. "Upon the general and particular surveys already made," says Sir William Temple, "it may seem that the mountainous barren countries are equally the scenes

of health and long life; that they have been rather in the hills of Palestine and Arcadia, than in the plains of Babylon or of Thessaly; and among us in England, rather upon the Peak of Derbyshire and the heaths of Staffordshire, than in the fertile soils of other counties that abound more in people and in riches." Examples of great and extraordinary longevity have been chiefly confined to peasants of the lowest order of society; to philosophers, who have thought that the truest wisdom consists in the regulation of the passions and the appetites; or hermits and anchorites, who practiced great abstemiousness as a religious duty.

That the members of those monastic orders, who abstained from the flesh of animals by the rules of their institution, enjoyed a longer mean term of life in consequence, has been proved by the result of an actual examination. This fact is well established by the author of an interesting tract, published at Geneva, in 1789, entitled *Apologie du Jeune.* As this tract appears to furnish some important and instructive matter, I am sorry that my own knowledge of its contents is derived from the scanty details of a medical journal. From this source, however, I have obtained the calculation which seems sufficient to justify the conclusions of the author.

This writer extracted from Baillot the length of the lives of 152 monks (*solitaires*), or of bishops, who used the same austere mode of life. He took them promiscuously, as they were presented, in all times, and in all sorts of climates. They produced a total of 11,589 years; and consequently they gave an average of seventy-six years and a little more than three months, which may be expected from a regimen confined principally to fruits, herbs, roots, etc. He took, in like manner, 152 academicians, half members of the academy of sciences, and half of that of Belles Lettres. They gave only 10,511 years, affording an average of sixty-nine years and a little more than two months. The ancient austerity, therefore, so far from abridging life, lengthens it rather more, upon an average, than seven years; and the long life of the anchorites was the effect of the frugality of their regimen.

The difference between the ages of the seventy-six members of the two academies was only nineteen years; but in every stage of life the advantage was on the side of the monks; there were fewer deaths, more numerous survivors, and an old age more prolonged, as appeared by noting the number of deaths in every successive ten years.

The author of this account concludes with making what I

deem a very just remark. "It is not," he says, "the apparent disease which is the real cause of death; but men die because the body is worn out; the tone of the fibres is destroyed; and the principle of motion fails. The obvious disease is the mask under which this condition is concealed."

Nothing is indeed more true, than that previous to the attack of fatal diseases there may be commonly observed evident marks of an exhausted vitality. The signs of it are frequently sufficiently marked in the countenance; or it may be observed in some feebleness of the vital functions: a change in the force of the circulation; a failure of the breath, or some diminution of muscular power. Habitual diseases, which, for their production, require a certain energy of action, and strength of constitution, as gout, cutaneous eruptions, etc., disappear, and people vainly congratulate themselves, perhaps, that they enjoy improved health. The attack may be sudden and violent, but the predisposing state of the system has been formed slowly, and almost imperceptibly. So truly is it said by Hippocrates, "that diseases do not fall upon men instantaneously, but being collected by slow degrees, they explode with accumulated force."

Observations similar to those which this writer has made the subject of calculation have occurred at all times, and in almost every climate. It is perfectly well known to those who have resided in Hindostan, that the Bramins, who abstain most scrupulously from the flesh of animals, attain to the greatest longevity.

From the calculation which has been given, we may, I apprehend, reason with tolerable correctness as to the effects that may be expected to result from a vegetable diet in incurable diseases, supposing no other change to be adopted. According to the evidence produced, the system wears faster under a mixed regimen than under a vegetable regimen; and at such a rate that those who would die under the former regimen at seventy, would, under the latter, reach to seventy-seven nearly; that it is to say life is prolonged about one tenth.

I am apt to think that this estimation cannot be very wide of the truth. For there are circumstances, on each side of the scale, which the author of the report would hardly take into the account. In the first place, men who live very abstemiously are, probably, as scrupulous in what they drink as in what they eat. It is likely then that these monks and religious men were, for the most part, water drinkers; whereas the academicians living in the world would, for the most part, comply with

the common customs of the world. Hence, then, the monks would have an advantage in addition to their vegetable regimen. On the other hand, these *solitaires* did not, probably, adopt their strict regimen till they had reached the period of manhood; moreover, it is probable, that a perfect strictness in the vegetable regimen was not observed; it hardly excluding the occasional use of fish, milk, and eggs, and other things, which, being deviations from natural diet, must, I conceive, abbreviate the term of life.* But, to assume the utmost latitude in favor of the vegetable system, we will suppose that persons who use the common diet might have their lives prolonged one sixth by confining themselves to vegetables alone. This will, I doubt not, be generally thought to be giving it advantage more than enough; though, under peculiar circumstances, it may be really too little. In persons living very grossly, eating largely of animal food two or three times a day, the abbreviation of life will be proportionably greater; such persons, perhaps, cutting off one fourth, one third, or even, perhaps, one half their days by their excesses. However, under common circumstances, the above-mentioned allowance of one sixth is, probably, abundant.

Now, as the action is constant and uniform, this prolongation will belong equally to every portion of life; and the same proportion may be applied to what we may call the *complement* of life, or that part of it which still remains unexpended. By an abstinence from flesh, then, we may expect to protract the periods of disease, though not to avert their fatal issue, and that in about the proportion stated above. If, for example, a person who is consumptive might be expected to live a twelvemonth, he might reasonably hope, by a vegetable regimen, to prolong his life about two more months or to live fourteen months. Such would, probably, under the vegetable regimen alone, have been the event of the case which I have described in my "Reports on Cancer," in which Mr. Abernethy gave his opinion that a twelvemonth was the utmost extent of life that he could hope for, but in which life was really extended to three years and five months; and that under a treatment which was for some months essentially defective. A cancerous tumor is, under common diet, invariably fatal; and the term of life,

* Thus Mr. Pennant—"The *Romish* church permits the use of it (the otter) on maigre days. In the kitchen of the *Carthusian* convent near *Dijon*, we saw one preparing for the dinner of the religious of that rigid order who, by their rules, are prohibited during their whole lives to eat flesh —*Pennant's British Zoology, p.* 119.

which remains to a person who has a tumor of this kind, may be conjectured with a tolerable degree of precision. Let us suppose such a person under common regimen would survive three years; under a strict vegetable regimen, the same person may expect, from these data, to live about three years and a half.

From this view of the subject, I think it is easily explained how the vegetable regimen has fallen into a species of disrepute; and how impossible it is to obtain from it, when the system is hastening toward dissolution, even a temporary respite from suffering. Let us make an assumption which is certainly quite extravagant; but let us suppose that, other things remaining the same, life would be doubled by vegetable regimen. In the beginning or middle of life this would be a momentous consideration; but how would it be toward its close? A man, we will say, is consumptive, and has but half a year to live. By the vegetable regimen, then, he would, by the supposition, live a whole year. But he would still during the whole period be a dying man; the symptoms might be less severe, but they would persist. And how much more evidently must this be the case if, what would doubtless be the real fact, life was not prolonged a month? In these circumstances it can hardly be conceived that the patient should, as far as he could judge from his feelings, be sensible of any benefit whatever. And as no practitioner will pretend to so correct a judgment as to be able to fix, in these circumstances, and foretell death within three or four weeks, the advantage gained, though real, would elude the observation of the medical attendants quite as much as that of the patient.

It is no wonder, then, that while vegetable regimen has been confined to cases of this kind, persons should be insensible of its advantages. The most strenuous advocates for a vegetable regimen have been some solitary individuals in common life, living commonly in a confined circle, and acting either from a regard to health or from a principle of conscience. The errors of such persons have in them something respectable. But the medical profession have, in general, held a different and even an opposite language. The reason clearly is the much more extensive observation which their profession affords them. This experience has presented to them diseases of all sorts, invading persons whom necessity confines to such a regimen; and death taking place in all its forms. They must therefore have a full conviction that all the flattering prospects of avoiding diseases, held out by the enthusiasts of a vegetable regimen,

are wholly fallacious. And as men are apt to fall into extremes, it is no wonder that a large portion of this body of men are insensible to its real advantages, and inclined to attribute mischiefs to it of which it is really guiltless.

Under the influence of prejudices, grounded, I dare say, upon observations such as I have mentioned, a surgeon, who, from the extent of his practice and his standing in the profession, is justly called, I believe, the first of this metropolis, being told how little animal food was given to the children at Edinburgh, answered, "Yes; but I find animal food is necessary to our London children;" as if what was right in one place was wrong in another, and that there is a real difference in the human constitution at London and at Edinburgh. When the first men of the profession use such vague language, and have such indistinct ideas, can we wonder at the ignorance and prejudices of the bulk of the people?

Though there is no reason to question the fidelity of the writers who have given the histories which I have recited in this chapter, yet it is to be considered that they are rare occurrences, and as such ought not to be allowed undue weight. General conclusions must rest upon a firmer foundation; facts should be both numerous and concurring. In individual cases circumstances may easily be omitted which would lead to different conclusions had they been related; and this may happen from error or precipitation without any intention to mislead.

Gout is the disease in which abstinence from animal food has been the most frequently recommended, and with the greatest, but not with uniform success. It is generally acknowledged that the practice alleviates the symptoms of the disease. Many single cases, of the good done by such a regimen, have been related. A treatise by Dolœus, on the cure of gout by milk diet, contains several cases in which the severity of the disease was by this method much alleviated. In Dr. Starke's works is the following passage to the same purpose.

"Mr. Slingsby has lived many years on bread and milk and vegetables, without animal food or wine; he has excellent spirits, is very vigorous, and has been free from the gout ever since he began this regimen.

"Dr. Knight has lived also many years on a diet strictly vegetable, excepting eggs in puddings, milk with his tea and chocolate, and butter. He finds wine necessary to him. Since he lived in this manner he has been free from the gout."

But it has also appeared that a great degree of atony and

muscular debility has often succeeded to the more violent paroxysms of the disease. This is the evidence of Dr. Mead, which, I doubt not, is correct. "In persons advanced in life, in whom the disease has been used to recur for a course of years, if it does not invade them at all, instead of the limbs, the internal parts are infected; and, moreover, the limbs being deprived of their strength, they pass the remainder of their lives in a miserable state, which I have seen more than once in those who, contenting themselves with milk and vegetables, have abstained from all other food."

I question not these facts. It is no reproach to the vegetable regimen that it cannot effect impossibilities; that it cannot restore a constitution worn out with age and disease. Nor are the evils described to be attributed to the diet, though vulgar prejudice might reason so; and the representation of the writer seems to favor it, this series of symptoms being the customary course of the disease under every regimen. It is equally true, that in London, and perhaps every where else, many children will become diseased, and die, who are confined to vegetable food, other causes of disease being in action. But let observations be made on a scale sufficiently large, and let an average be fairly taken, and there can be no doubt that the balance will be in favor of the abstemious in length of life, in diminution of suffering, and in actual enjoyment.

Excess of all kinds is followed by an instantaneous exacerbation of constitutional disease, as persons subject to gouty pains almost always experience. And where the very contrary effect is experienced, as may sometimes happen, it may be suspected to be owing to a degree of torpor introduced into the nervous system rather than to healthy action.

Abstinence, on the contrary, without curing constitutional disease, assuages its violence; it both protracts life and renders it more comfortable.

A gentleman of about thirty years of age, while this chapter was in the press, informed me that he had formerly used animal food two or three times a day. He had for some time suffered most severe pains of the head, so much as to confine him, during the paroxysms, to his bed; and they gave him the greatest dread of their approach, which he could commonly foretell for two or three days. Moreover, he had a bleeding from the hemorrhoidal vessels, from which he had hardly any respite. In consequence of the inquiries originating with me, he determined to confine himself wholly to vegetable food, which he has now done, I believe between two and three years. For half a

year the disease continued with unabating severity. But from that time it became much milder, and now it never confines him, and he hardly regards it. The hemorrhage also is greatly diminished. The whole time it now occupies is not equal to what the intervals were formerly. He has perceived no loss of strength, and has determined, in consequence of the benefit he has received, to pursue in every respect the regimen I have recommended in chronic disease.

I have before me some papers written by a gentleman of Birmingham, of the name of Luckcock, which he liberally communicated for publication. But though the matter is creditable both to the benevolence and good sense of the writer, it is not such as I deem suitable to my object. I doubt not, therefore, that he will excuse me if I use only those facts which I think more directly conducive to that end.

This gentleman had, in May, 1813, used a vegetable regimen for rather more than four years, prompted more by a principle of humanity, and a conscientious feeling, than a mere regard to health. He says that he never found the smallest inconvenience from the change, but that, on the contrary, he has rather increased in weight, and sensibly improved in health. On this subject he declares: "I confidently believe that I am taking the best means to enjoy life as long as it may continue. In this respect I do affirm that the last four years have been equal to any period between twenty and the present time, and certainly better than the four years preceding the innovation." Mr. Luckcock's age was at this time fifty-three.

It further appears that the writer, like most men of his time of life, was not entirely free from constitutional disease. His words on this subject are: "About fifteen years ago a slight hemorrhage made its appearance with me, and has gradually increased to a degree which, under less favorable circumstances, might well excite considerable alarm, and it may eventually be fatal." From this statement I conclude that the change of regimen has made no marked alteration in this disease.

I repeat, then, that abstemiousness does not cure constitutional disease; but it palliates, where to cure is obviously impossible. Even in aneurisms of the aorta, or dilatations of the cavities of the heart, whatever good is possible must be looked for in a treatment founded upon analogous principles. Such was the practice proposed by Valsalva in these hopeless diseases. He enjoined repeated bleedings, and a spare diet rigorously persevered in; and we are assured by Albertini, in a

paper inserted in the memoirs of the academy of Bologna, "that young persons treated in this way have, in some instances, been cured, and in others remarkably relieved; and that old persons, and those in whom the complaint was already far advanced, had at least found in this plan a more or less powerful obstacle to its progress, and a prolongation of life." Some examples of the utility of the practice are given in the work from which this extract is made.

I do not think that an impartial examination of facts will allow us to attribute effects more favorable than those I have described, to the use of a vegetable instead of the mixed diet of common life, aided even by avoiding fermented liquors. They are, as I have said, prolonging life to a certain degree, and rendering disease more mild. But no instances have been given of the eradication of deep constitutional disease, where the symptoms were well marked and unequivocal. On the contrary, such symptoms have been known to arise under a strict regimen of this kind, of which, in the sequel, I shall cite some examples.

I know that very different opinions on these subjects are held both by practitioners and by the people. Persons who have for years used the common diet without inconvenience, say, that at some former period of their lives they labored under severe and dangerous illness, for which they were enjoined to practice a rigid abstemiousness; and to this practice they ascribe their recovery. But I would ask, if the diet caused their former illness, how happen they to bear a recurrence to it without a recurrence of the symptoms? It is clear, then, that they do not think their disease was caused by the mixed diet, but that there was some peculiar medicinal power in a temporary abstemiousness. And that British practitioners in general entertain similar ideas, is clear from the rigid abstinence they enjoin in acute diseases, under the name of the *antiphlogistic regimen*. In this respect, the English are said to be more strict than other nations. And it is thought that life itself is preserved by this strictness.

Without at all disputing the propriety of this strictness—for I think it perfectly proper—I must doubt greatly its efficacy, at least as far as it claims to preserve life. For having seen severe attacks of inflammatory disease, where a regimen of this kind had been followed for months, and even for years; having even suffered in my own person an exceedingly severe inflammatory sore throat, when it had been followed very nearly two years, I cannot but ask what effect can it be supposed to have

on the issue of such a disease, when resorted to only on the spur of the occasion, and continued for a few days, or it may be for a few weeks? I question not, then, that their issue depends infinitely more upon the antecedent habits, than upon any effect of regimen during their invasion. And if this be true, it would seem that those foreigners who are much more sparing of animal food in their daily habits, but much less rigid than the English under illness, do not appear, in these respects, to be less enlightened than our countrymen.

Under the influence of opinions, common to all British practitioners, of the great importance of the antiphlogistic regimen in inflammatory diseases, I myself proposed in a former work (Inquiry into the Origin, Symptoms, and Cure of Constitutional Diseases, p. 50). to render it more perfect, and, as I thought, more efficacious, by attending to the fluid, as much as to the solid matter used. and substituting pure instead of common water. And I still think that I reasoned right, supposing the common opinion to be just. But being now fully assured that the operation of regimen of all kinds is, as far as it regards the safety of the patient, exceedingly slow; that the effect of the *ingesta* (of any kind whatever), upon the issue of these diseases can, during the course of the disease, be hardly calculated; and that a strict attention to the antiphlogistic regimen itself may tend to the comfort of the patient, but possess little or no influence on the event; being, I say, assured of these facts, I think any more minute attention than what is commonly paid, would be frivolous and unnecessary.

I can therefore pay little attention to the relations of the extraordinary benefits of vegetable diet, in persons who have afterward used, for a length of time, the customary diet of the country, without perceptible injury. If, in fact, disease be caused by diet, if not the immediate symptoms, still the diseased state of the constitution is really attributable to this source, the constitution should improve by a change of diet, and either the same symptons, or at least the same diseased state of constitution, should recur upon relapsing into the former habits. Such only can be allowed to be a legitimate proof. In other cases, such as I have alluded to, the abstinence enjoined may have been beneficial, but the restoration to health must be conceived to have been due to other causes.

CHAPTER VI.

The objections to vegetable food: paleness and loss of flesh; that the feeble require nourishing diet; differences of constitution; uneasiness from vegetables; that eating flesh injures only by excess; that it is not unfavorable to intellect; that it has been found useful in disease.—How far liking justifies the practice.—Fish, milk.—The cookery of vegetables.

In questions which must ultimately be decided by experience, I know not whether it is necessary or useful to employ much time in argument. Perhaps to lay a simple statement of the facts before the public is the most proper and the most powerful argument that can be employed. If, therefore, I consider shortly some of the objections which I have heard made to the use of a vegetable regimen, it is because I have thought some respect was due to the quarters from which they have proceeded; and still more to popular opinion, which, it is unfortunately too true, is vehemently adverse to it.

The pallidness and shrinking of the features and of the whole body, which sometimes succeed the disuse of animal food, is apt to excite an alarm, and a fear of essential and irretrievable injury to the constitution. Let us consider how impossible it is that this should be otherwise, and therefore how little is to be apprehended from it.

Animal food commonly gives a more succulent habit, a greater fullness, and, at the same time, a higher color to the face. It may be suspected that all the fibres become softer; that the force of aggregation of the molecules which compose them is diminished. In the healthy, the high color of the face is not unpleasing, though coarse. In the lads in the service of butchers it may be observed the most distinctly. In others of feebler stamina it is an habitual flush.

This color it is which most imposes upon superficial observers. To see a pallid child or young person become more ruddy, from what is called better living, is a pleasure which it is difficult to resist; and to observe the color fade from an opposite treatment, without alarm, requires a thorough confidence in the justness of principles, which the ignorant and the timid can hardly be supposed to possess. It ought, therefore, to be considered what it really indicates.

In fact, what can it indicate but an excitation of all the small

vessels of the face? This excitation cannot be supposed to be confined to the surface of the cheeks, but must extend to all the contiguous parts; to the internal as well as the external; to the parts within the cranium as well as the integuments; in a word, to the organ which regulates and connects all the other organs of the body—to the brain itself. If, therefore, the use of animal food be an unnatural custom, its primary operation is to give an unnatural excitation to the brain; and all its consequences of improved color, increased strength, and even of apparently improved health, must be reckoned consequences of this excitation.*

A further consequence is, that life is, in all its stages, hurried on with an unnatural and unhealthy rapidity. We arrive at puberty too soon; the passions are developed too early:† in the male they acquire an impetuosity approaching to madness; the females breed too quick; processes which ought to be distinct and successive are blended together and confounded; women who ought to be nurses become pregnant, even with the child at the breast;‡ finally, the system becomes prematurely exhausted and destroyed: we become diseased and old when we ought to be in the middle of life.

After all that has been said, I can hardly be so misunderstood as if I asserted all this to be, in fact, the operation of ani-

* Professor Sweetzer, of this city, in his interesting work on consumption, remarks: "That if diet is superabundant and exciting, a plethoric and inflammatory state of the system will be induced, highly incompatible with the equable and healthful play of the different functions, and tending indirectly to waste the energies of life. How often is it that fat, plethoric, flesh-eating children, their faces looking as if the blood were just ready to ooze out, are with the greatest complacency exhibited by their parents as patterns of health! But let it be ever remembered, that condition of the system popularly called rude or full health, and the result of high feeding, is too often closely bordering on a state of disease." The good sense of these remarks must be apparent to every one who thinks.—S.

† In all the cases of precocious menstruation—and I have known a number—such as in whom this function has appeared at the age of twelve or thirteen years, there has been very free use of and a great desire for flesh meat. I have been particular in noticing this fact.

I will admit that a very free use of milk, eggs, butter, salt, and other stimulants, might easily cause precocious puberty, without the use of flesh, especially in the hot-bed and unnatural life of cities.—S.

‡ I have known more cases than one in the city of New York of flesh-eating mothers, of very feeble health, who yet have become pregnant, time after time, on an average of nearly every year, and each and every time after the first, while the child was yet at the breast. The undue stimulus of animal food has evidently a strong influence in these cases of premature pregnancy.—S.

mal food alone. All the habitual irritations appear to have similar effects on the body; they stimulate to excessive action, which is followed by premature exhaustion. But I cannot doubt that such would be the operation of animal food alone, if every other cause of disease were removed. An experiment which, as I have heard, has often been made upon chickens, illustrates its general action on animal bodies.* They feed hens upon flesh, to make them lay eggs faster. Every thing, therefore, that has been said in favor of animal diet; of its strengthening, and invigorating, and fattening, and so forth,† may be perfectly true; and still the consequences drawn from these appearances may be false, and its use may be, notwithstanding, radically improper.

Now, if a body be, to the senses, modified by the action of animal food; if it be enlarged, and bloated, and reddened, it must necessarily happen that by its abstraction these effects must cease, and appearances the very opposite of these may be expected to take place, that is to say, the body may be expected to diminish, and to condense, and to become paler. If the face be highly colored or flushed, it may be expected to lose in a measure this appearance. A load of fat, which is but an incumbrance to its bearer, may perhaps vanish, and so the clothes may hang about the body. But if neither this color nor this fatness be health, nor indicative of health, what is there to fear from the loss of them? If, on the contrary, these appearances are wholly morbid, we surely ought rather to be pleased than mortified that we have got rid of them.‡

* I need hardly say, of animals not by nature carnivorous. Chicken are probably, in some degree, omnivorous. Though seeds is their favorite food, they would, I suppose, pick up insects, worms, slugs, etc.

† Mr. Malthus was, I have little doubt, deceived from not making this distinction. He says, "Even in Norway, notwithstanding the disadvantage of a severe and uncertain climate, from the little I saw in a few weeks' residence in the country, and the information I could collect from others, I am inclined to think that the poor were, on the average, better off than in England. Their houses and clothing were superior, and though they had no white bread, they had much more meat, fish, and milk than our laborers; and I particularly remarked that the farmers' boys were much stouter and healthier-looking lads than those of the same description in England." If such a diet gave a more healthy race of people than one that was principally farinaceous, all that I have said must be wrong. But the tables of mortality prove the contrary; and, therefore, these appearances of stoutness and good looks, in the younger part of the community, are not indicative of superior health.

‡ That the mere loss of flesh, and, to some degree, strength—circumstances which must sometimes, though by no means always, occur—on commencing vegetable diet, are not necessarily unfavorable, is abundantly

I cannot doubt that, as a general rule, it may be safely asserted that the florid are less healthy than those who have little color. An increase of color has been ever judged to be a sign of impending illness. "If a man becomes fuller," says one of the ancients, "and better looking, and with more color than usual, he ought to consider these blessings as suspicious." Our own vulgar, at this day, if told that they look much better than usual, regard it as a sign of approaching disease. How many, with what is thought the glow of health on their cheeks, are inwardly tabid? How many on the verge of the grave, about to be cut off by an acute illness? Every day gives such painful examples of these truths, that I should be ashamed to urge them, had I not heard even experienced medical practitioners refer to the fine color of the cheek as a proof of good health. The young lady who last gave occasion to this remark, has since, I believe, died of consumption.

It seems very evident that our general manner of life tends to load the head, and give an unnatural fullness to the face. This has given us ideas both of beauty and proportion, which are far from just, as not coinciding with the most perfect specimens of the human form. It has corrupted even the taste of our painters. I have heard from an eminent artist, that the custom of painting children with the cheeks enormously swollen is confined to the modern school; that it was not practiced by the ancient sculptors or painters. Though a well colored and full face cannot be otherwise than pleasing, yet it may be often observed in union with a narrow chest, shrunk limbs, and a tumid belly. Many an anxious mother says of her child, that its face is the only part about it which looks well. Now if, in such a case, by any course of dieting—for medicine is wholly out of the question—we can strengthen the limbs, cause the chest to expand, and the abdomen to shrink, we should hail these changes as signs of highly improved health. If then it should happen, at the same time, that the face becomes less full, and the color less florid, we ought certainly to reckon this fullness and color to be morbid, and as such be happy at the loss of it.

It affords no trifling grounds of suspicion against the use of animal food, that it so obviously inclines to corpulency. On

proved by the success of the *hunger cure*, which I have seen practiced in Germany. If a person is losing bad flesh, which, under a properly regulated vegetable diet, must often be the case, he is certain of growing stronger again as he gets better muscle. Flesh is absolutely no criterion of health, nor is a temporary loss of strength any evidence that an individual is growing worse.—S.

this subject the reasoning of Dr. Arbuthnot is unanswerable. "You may see an army of forty thousand foot-soldiers without a fat man, and I dare affirm that by plenty and rest twenty of the forty shall grow fat." Corpulency is of itself a species of disease, and a still surer harbinger of other diseases. It is so even in animals. When a sheep has become fat, the butcher knows it must be killed or it will rot and decline. It is rare indeed for the corpulent to be long-lived. They are at the same time sleepy, lethargic, and short-breathed. Thus Hippocrates says, "those who are uncommonly fat die more quickly than the lean." The monstrous and bloated form which the human body occasionally assumes, is a more pointed satire upon the customs which engender it, than any which can be conveyed by words. He that runs may read.*

* This paragraph of Dr. Lambe's brings to mind a most barbarous practice with which I became acquainted in Europe, a knowledge of which may be gained from the following extracts from my note book, written while in the old country:

"I presume most persons have heard something of the process of fattening geese for the purpose of enlarging their livers, which are considered by the eating and drinking gentry in the old country a great rarity. This business, revolting as it is both to the feelings and taste of a person of undepraved appetite, is made a regular occupation in certain parts. Men and women both follow the art of thus fattening geese as their only means of getting a worldly subsistence. It is carried on principally in Belgium. The mode is as follows: Geese of a suitable size are nailed with their feet upon a board, a T-headed nail and a piece of leather being used for each foot. (I do not know whether women engage in this part of the operation.) The animals thus fastened are set before a fire. This is done to cause a feverishness in their systems, through which they became very thirsty. Pots of milk are then set by them, of which they drink freely to quench the thirst. After this they are fed with a dough of Indian meal as long as they will eat. More is then forced into their throats, and pressed down their neck into the stomach. This is a practice that requires tact, otherwise the animals would become choked. After this 'stuffing,' as it is called, they are put away in a dark place to sleep. Three times in the forenoon, and the same in the afternoon, the geese are thus placed before the fire and fed. At the end of three weeks they have become so fat and stupid they are nearly on the point of dying. They are then killed to save them, their bodies being almost an entire mass of fat, with livers also fat and most enormously enlarged. With these are made the famous '*fat goose liver pies.*'

"The best and most costly of these articles are made in Strasburg, to which city the livers are taken from Belgium. One liver, with a portion of fat pork, the whole being surrounded with very rich pastry, is sufficient for two pies, each of which are sold in London and Paris at one pound sterling. The pie is transported in a circular box, about the size of a three-quart measure. We see many of these in the windows of the higher victualing shops and pastry establishments of Paris, and sometimes in London. They are considered by many as being a great rarity. The poor and laboring part of the community cannot of course indulge in so de-

I would not have it supposed, however (as ignorance is apt to imagine), that great paleness, or great leanness, is a necessary consequence of a vegetable regimen. Many who are lean upon animal food thrive upon vegetables, and improve in color. I could cite numerous examples of persons perfectly well nourished, and not only enjoying, but having every external sign of perfect health, on a strict vegetable regimen. Mr. Luckcock gained a few pounds in weight by relinquishing animal food. He says that a young boy, a son of his own, upon the same diet enjoys excellent health. Mr. Lawrence, assistant-surgeon of St. Bartholomew's Hospital, in a twelvemonth increased in weight nine pounds, upon a vegetable regimen. Dr. A. P. Buchan, physician to the Westminster Hospital, told me that, when a young man, he lived three years upon vegetables, and was never in better health. And I hear that there are four hundred persons at Manchester, who at this time abstain from animal food, influenced by religious principles, and that they enjoy at least as good if not better health than their fellow-townsmen. More particularly I have not been informed. All the notions of vegetable diet affording only a deficient nutriment, notions which are countenanced by the language of Cullen and other great physicians, are wholly groundless. They have been founded upon observations of its effects on great invalids. Such subjects may possibly shrink and become pale. It is enough, surely, if such persons can prolong their lives, though it may be at the expense of their looks. To exchange a pale face for a premature shroud appears to me but a sorry bargain.

I hear much gabble about giving people proper support, and am told that the feeble require what they call nourishing things. I do not think it worth while to insist upon perfect strictness, where the ultimate advantage is not likely to be great; nor is it very politic in a practitioner to recommend with earnestness what it is probable will never be attended to. But we are here discussing principles. I would fain ask, then, whether it does not appear that these feeble and debilitated persons have not, for the most part, passed a day without laying in a plentiful store of these nourishing things; and whether having been nourished into their present state of debility, it is likely that they can, by pursuing the same methods, be nourished out of it? I would ask the more reflecting and better informed, whether the Hip-

sirable a luxury. I have thought the pork pie—a common thing in the eating-houses of New York—disgusting enough, but it will be conceded, I think, that in comparison with the fat goose liver pie it is quite a proper dish."—S.

pocratic maxim is not founded in truth, which declares: "In bodies that are not pure, the more you nourish them, the more you injure them?"

It is said that there are great varieties of constitution, which produce corresponding varieties of diseases, and that it is impossible that the same regimen can be adapted to them all. The vulgar proverb is quoted, and, if I am rightly informed, by a gentleman who was an eye-witness of some of the facts contained in my "Reports on Cancer," that what is one man's meat is another man's poison; and many exclaim, A vegetable regimen may do very well with some, but I am sure it would not suit me; my own feelings tell me so, and what better guide can we possibly follow?

I shall consider these objections in their order.

I have already said, that however various constitutions may be, diseases, with different and even opposite symptoms, may be in their essence identical. The variety of constitution is displayed in the various and ever varying forms of disease, and in the irregular times at which they take place from infancy to extreme old age. The identity then is not in the forms and external signs of disease. It must consist in some circumstance which is common to them all. This circumstance is a decay and final destruction of the vital powers. Perhaps there is no single and infallible criterion by which to judge of this decay. It may exist, though the organization of the body is perfect. It is not incompatible with great apparent strength and energy of action. The principle of life is not an object of sense, and we infer both its existence and its modifications from the phenomena of living bodies. Whether in its decay, the loss of power be confined to the organ principally affected, or whether it extend primarily to the whole body, it is not easy to determine. But that it is general and uniform throughout the whole system, seems to me, from many circumstances which I have observed, to be by far the most probable opinion. Its total destruction is the death of the body.

If the gentleman who tells me that one man's meat is another man's poison, and who is so much better versed in the anatomy of the human body than I pretend to be, will show me in what I have mistaken when I have asserted that man is herbivorous in his structure; if he can show that there is any radical difference in this respect among the individuals of the human species, I shall then subscribe to the doctrine that there is a radical divinity in human constitutions beyond what I have acknowledged. But till this is done, I must agree with a

sprightly friend of my own, who says that the proverb justly interpreted means no more than that what is meat for the patient may, perchance, be poison to the doctor.

The question of feeling may deserve a little more consideration, since it is apt to deceive persons of good judgment. The impulse or feeling of the moment is that which is naturally the immediate motive for action. What gives pleasure we naturally seek; and we avoid what occasions uneasiness. And this seems so just and reasonable a ground of action that I can hardly doubt that, in a truly sound and healthy state of the system, we might safely trust to our sensations; that what is most agreeable would be most healthy, and what gives uneasiness would be also injurious.

But it is obvious that we cannot safely argue so in a diseased system. In this case agents may neither produce their natural and appropriate sensations; nor sensations inform us justly of the qualities of bodies. The same habit which has reconciled us to many unnatural and noxious substances has likewise given us a disrelish for those which are natural and salutary. Gassendi tells us of a lamb which, having been bred up on shipboard, refused to eat grass. We surely then cannot wonder that, having accustomed our stomachs to every thing which earth, sea, or air affords, we have obliterated our relish for simple vegetable food.

It may very well be, therefore, that by habit animal food may cause no uneasiness on the stomach; and vegetable food may have the very opposite effect. I can only say it is a great misfortune to have the feelings of the stomach so completely perverted. It may be that leaving off animal food may cause suffering and uneasy feeling. This a greater misfortune still, if the health require it. But it betrays a profound ignorance of the elementary principles of human nature to mention such things as serious objections to a vegetable regimen.

The case of spirituous liquors, in which every child knows how to reason properly, is exactly parallel. I should be ashamed to dwell upon it if I did not know that, in fact, such objections have been strongly and effectually urged. I would ask, then, would any one listen a moment to a gin drinker who should tell us how warm and comfortable his morning dram is to his stomach, and how low and cold and flatulent he is without it? In like manner, no doubt, the subduction of animal food is withdrawing an accustomed irritation; a strong, but an unnatural appetite remains unsatisfied; a craving takes place which it may require a determined effort to subdue; and it may

take some time before the old habits and old desires are completely eradicated; and before the stomach feels as well satisfied with vegetable food as it did with the former fare. An additional misfortune is that these depraved feelings and appetites are the strongest in the most diseased persons. By resolution, however, they may be conquered; and gradually animal food, so far from being an object of appetite, will cease to be thought of. The very remembrance of it will be effaced. I must assert that, except uneasy feeling such as I have described, I have observed no ill consequences from the relinquishment of animal food. The apprehended danger of the change, with which many scare themselves and their neighbors, is a mere phantom of the imagination; the danger, in truth, lies wholly on the other side.

But besides the uneasiness from the change of habits, there may be consequent uneasiness affecting any part of the body. This may have various sources. If other causes of disease continue to operate, such as putrescent water, or fermented liquors, which have power sufficient ultimately to destroy life, the source of this uneasiness is manifest. Moreover, diseased action continues long after the antecedent causes have been removed.

Parts imperfect in their primary organization, or rendered unsound artificially, may perish and be renewed. Newly-formed parts commonly possess feeble powers of life, in consequence of which they may again perish and be again renewed; and this may take place repeatedly. In these processes we see many sources of uneasiness; of suffering; even of acute pain, however cautious men may be in their manner of living and attentive to the rules laid down for them. They may cause inflammations, ulcerations, suppurations, sloughings, and, by consequence, every sort of pain which is attendant upon these processes.

Some of the uneasiness consequent upon the use of vegetable food is due, as I have explained in another place, to the improvement of the senses, which follows the disuse of animal food, and the restoration of the natural sensibility of the nervous system. This improvement is not confined to the organs of sense, but pervades every organ and influences every function of every part of the system. The torpor, therefore, introduced by the animal food must be equally diffused over the whole system; all the secreting organs, all the membranes, probably the whole of the vascular, glandular, and absorbent systems suffer under it, as well as the nervous system. Whether each suffers independently, or the whole, in consequence

of the union of every organ through the medium of the nervous system, it is not worth while perhaps to inquire. But observation shows that there is no organ of the body which, under the use of vegetable food, does not receive an increase of sensibility, or of that power which is thought to be imparted to it by the nervous system. The observation of this it is which has made me think it most probable that the decay and final destruction of the powers of life, in the diseases terminating in death, pervades the whole body, though the principal apparent disease may be confined to a single organ. The same consideration shows that palsy is a condition of the system not confined to the muscles, or the organs of sense. There is no fibre in the body which may not be paralytic.

Morever, there are many pains which persons suffer in the early or middle parts of life which disappear as they advance to old age. On this account there are those who are an exception to the more common rule of old age being the season of infirmity and suffering; on the contrary, they enjoy in age a uniform degree of ease and comfort to which they were strangers in the former part of their lives. Upon such observations must have been founded the maxim of Hippocrates, that "old men for the most part have less sickness than the young." I see not what reasonable explication can be given of these phenomena, except by attributing them to the different degrees of sensibility which the body is endued with during the different stages of its existence. From this cause the young suffer from impressions which the apathy and torpor of the old shield them against. I think it must be in the memory of every person in the middle of life, that when they were children the coldness of a frosty morning was infinitely more piercing than when they had arrived at manhood.

Now this diminution of sensibility may be natural; the necessary consequence of increasing years. As far as this is the case it cannot be deemed morbid; and it would be absurd to expect to prevent or remedy it. But as far as we accelerate old age by depraved customs, or diminish our natural portion of sensibility by the use of deleterious substances, so far we may hope to recover it, in a measure, by adopting more salubrious habits. It is possible, then, that under these circumstances pain may arise in the system which may indicate the recovery of a portion of sensibility that was lost. Such pain ought to be deemed salutary. No one can question that to feel pain must be better than to be stupefied. Some illustrations and examples of this will be given in the sequel.

These considerations show sufficiently how pain may be produced in the system independent of the *ingesta*. They evince further that the production of pain or uneasiness may form no solid objection against the propriety of the regimen recommended in chronic disease; on the contrary, it may be an evidence of its beneficial influence.

I have heard it said that the only advantage of vegetable diet is, that by it excess is avoided, and that it is excess which is alone injurious; and excess of animal food is acknowledged to be more so than of vegetable. I answer, that the different effects of excess, according to the kind of matter employed, show an essential difference in the operation of these matters upon the body. Excess of vegetable matter produces only simple distension; excess of animal matter, an insuperable loathing and disgust; sometimes horrible nausea and serious illness. These matters then are essentially different, when first applied to the body. They are different, also, in their operation upon all the functions. But of this enough has been said already.

I cannot but think that the ancients, whether physicians or philosophers, who certainly understood much less of drugs than the moderns, had, to balance it, a far more correct knowledge of the influence of food upon the health, the morals, and the intellect. Socrates, Plato, Zeno, Epicurus, and others of the masters of ancient wisdom, adhered to the Pythagorean diet, and are known to have arrived at old age with the enjoyment of uninterrupted health. Celsus asserts, that "the bodies which are filled in the manner of the *athletæ* (that is, with much animal food), become the most quickly old and diseased." To the same purpose the poet writes—

"Immodicis brevis est ætas et rara senectus."—*Martial.*

The doctrine of Galen is, that "food which affords the most nutriment to the body, taken in excess, generates cold diseases." It was proverbial, that the ancient *athletæ* were the most stupid of men. The cynic Diogenes, being asked what was the cause of this stupidity, is reported to have answered, "because they are wholly formed of the flesh of swine and oxen." Theophrastus says, that "abstinence restores the use of reason; because eating much, and feeding upon flesh destroys it, and makes the mind more dull, and drives it to the very extremity of madness." In these passages, we find the general doctrine very clearly indicated, that animal food diminishes the

sensibility of the system, predisposes to diseases, and abridges life."

If the sensibility of the nervous system is impaired, it must follow that every function which depends upon the protection and integrity of this system, must be impaired or deranged likewise. It is impossible, therefore, to suppose that the intellectual functions, depending immediately upon the brain, can be performed with proper freedom and clearness by persons habitually using a gross diet. In conformity to which, it has been always remarked that the southern nations, who live mostly upon light food, are more lively and spiritual than the northern, whose habits are opposite. We may observe this even in countries nearly under the same latitude, but where the habits of life are considerably different; as when we compare the English with the French, or even with the Irish.

The instruments of the will are subject to the same influence. When the nervous power is perfect, the muscular power will be perfect likewise; when it is oppressed and benumbed, we may expect diminished muscular power, less agility, slower movements. Sir George Mackenzie observed this strongly characterized in the natives of Iceland, to whom the supply of vegetable food is more scanty than in any other European country, Lapland, perhaps, excepted. His account is in these words: "Our servants professed to be well acquainted with the country we wished to examine, and being young and stout, we flattered ourselves we should have little occasion to reproach them with laziness; but we soon found that, like all other countrymen, they were systematically slow in their movements; and that every attempt, either in the way of entreaty or of threat, to make them alert, was quite fruitless. Every one who undertakes to travel in Iceland, must resolve to submit with patience to the tardiness of his attendants."

When it is said that the use of animal food "drives the mind to the very extremity of madness," it must be understood with the same limitations as must be applied to all other constitutional diseases, that it does this in those predisposed to the disease. This predisposition is an original peculiarity of constitution; its essence escapes the senses, but its existence is matter of daily experience. It is equally matter of experience that animal food aggravates the disease. I shall cite in proof of this the testimony of Dr. Hallaran, whose opportunities of observation have been ample, he having been physician to the Lunatic Asylum of Cork, from the year 1789. It contains important information on more points than one. He says:

"It may be necessary to premise, that the unfortunate persons I allude to are, with very few exceptions, composed of the indigent and friendless idiots and insane of the county and city of Cork. It therefore has been wisely resolved that their common diet shall consist of the farinaceous fare to which, from former habits, they have been more accustomed.

"It has been on many occasions a source of satisfaction to me, and to the governors at large, to find, in compliance with the necessary economy inseparable with the existence of so large an institution, that this simple fare has not only been proved fully competent to the comfortable maintenance of the great majority of persons confined there, but also on a dietetic principle more immediately suited to the prevention of those inconveniences for which aperient medicines must otherwise be in more frequent demand. There are some, it is true, whose previous habits of living render a diet of this description rather unpalatable, and among those may be ranked the incorrigible drunkard, whose excesses so often reduce him to this level, and to the necessity of accepting as the only indulgence the beverage of all others the most likely to correct his depraved appetites, and to restore him to an inclination for the natural food of man. Daily observation shows that these unhappy people, after having forced Nature from her fastnesses, will still, by being obliged to submit to a strict observance of this *opposite* mode of living, regain their former cheerful aspect, and even from its salutary consequence gave evident proofs of returning intellect.

"There are certain seasons of the year," he proceeds, "when the humanity of the governors disposes them to extend to the poor people at the asylum a participation in the general festivity, and from the prevalence of established custom, I allow of it, as freely as circumstances do prudently admit, so far as a few generous meals of animal food. The consequences on those occasions have been uniformly the same, and so correctly anticipated are they, that the strictest precautions are invariably adopted to provide against the scene of uproar which is sure to follow. The sudden and unusual stimulus of animal food may, therefore, very fully account for this disposition to riot; it might be inferred that, had the indulgence been more frequently permitted, such an effect would not have been so very very remarkable. This may in part apply; but the fact is a sufficient evidence that animal food tends strongly to the aggravation of insanity. It also affords an additional argument in favor of a farinaceous diet, in preference to the admittance of

animal matter, so long as there remains a prevalence of those appearances which denote the insane orgasm. It also can be ascertained that, on the first establishment of the institution, when the number within its walls was far inferior to the present, and when of course the funds were more competent, and the regular allowance of animal food stood for once a week, that then, in like manner, the effect among the insane was precisely what it now is known to be, when produced by a similar cause, at two or three festivals within the year."*

This evidence is highly important, whether considered either negatively or positively. We will examine it in each point of view.

First, it affords very decisive evidence (if it were wanting) that avoiding animal food and fermented liquors will neither prevent nor cure insanity. Such was the customary diet of the great body of these patients; and though the abuse of distilled spirits is assigned as having an active share in the increased frequency of insanity, it is neither pretended, nor is it all likely, that this abuse was universal. Pinel has related the case of a young man, "an inflexible disciple of Pythagoras in his system of diet," who became subject, first to deep hypochondriacism, and, finally, to total insanity. In no long time he died. On this point, then, there can be no doubt; and insanity must be reckoned among the diseases which cannot be avoided, much less cured, by the strictest adherence to the established rules of temperance and abstinence from animal food.

But it is equally clear, on the other hand, that both the use of animal food, and still more of fermented liquors, aggravates and exasperates the disease. On this point the evidence of Dr Hallaran is decisive; and it ought to be attended to in our English establishments, and a proper practice enforced by law. In all of them both the one and the other are allowed to a large extent, and in some with little or no restriction. I myself have seen a lunatic, a gross, fat man, in one of our largest private establishments, with boiled beef, porter, and a bottle of wine before him. It is high time that these abuses should be done away. Probably many might be restored to reason without

* Dr. William Saunders Hallaran, on Insanity, p. 93, etc. I have seen the facts related by Pinel on the deplorable consequences of a scanty and insufficient nutriment on the patients of the Bicetre, cited in opposition to Dr. Hallaran's testimony. (See Pinel on Insanity, p. 209.) But the mischiefs described by Pinel were not from farinaceous food, but from a deficient quantity of any kind. Indeed, he says expressly, that the reduction which took place, and which did so much mischief to the poor people, was in the daily allowance of bread.

any further measure than a strict enforcement of temperance and abstinence. All certainly can not.

There can be no doubt, then, that animal food is unfavorable to the intellectual powers. In some measure this effect is instantaneous, it being hardly possible to apply to any thing requiring thought after a full meal of meat; so that is has been not improperly said of the vegetable feeders, that with them it is morning all day long. But its effect is not confined to the immediate impression. As well as the senses, the memory, the understanding, and the imagination, have been observed to improve by a vegetable diet.

Notwithstanding those palpable and well-known observations, I see it is asked, in a tone of triumph, Whether it is possible that the species of food which has formed a Fox and a Pitt, can be unfavorable to the production of talent? Why did not the writer (see Dr. Rees's Encyclopedia, Article *Man*) who has used this argument carry it to its full extent, and prove that a plentiful use of the bottle does not injure the intellect? For it is well known that one of those illustrious men indulged very freely in his daily potations; nor was the other, I believe, remarkable for his temperance. But was it ever asserted that the use of animal food absolutely extinguished talent, and reduced all men to idiotcy? or that it affected all alike, so that no difference of talent can be observed among those who use it? Animal food, it is obvious, excites and stimulates for a time the whole nervous system; and as some under its influence are able to perform prodigious feats of strength, so others may, perhaps, be excited to intellectual exertions equally gigantic. But such phenomena do not prove that animal food promotes either healthy strength, or healthy intellect.*

I think it might be asked, with much more reason, how happens it that the families of the whole body of the British nobility could produce but one Fox and one Pitt to head the conflicting parties of our senate? how happens it that the same body has produced not one man, no, not one, who is the acknowledged inheritor of the talents of these illustrious statesmen? Not one; though the prize of successful exertion is the most splendid that can be proposed to honorable ambition—the offices, the dignities, and honors of the first empire of the world.

* The habits of Milton, it is said, were what would be ordinarily termed austere. He was abstemious in diet, chaste, an early riser, and industrious. He tells us that a lyrist may indulge in wine and a freer life, but that he who would write an epic to the nations must ***eat beans and drink water***.—S.

Surely, a stronger proof cannot be given of the baleful and depressing effects of luxury upon the human character; how much it benumbs the faculties and stifles the embryo genius; how much it emasculates the spirit, and paralyzes the best energies of body and mind.

I do not doubt that the great ornament of our island, our immortal Shakspeare, ate flesh daily. Nor do I see what this proves but that among all the flesh eaters the genius of Shakspeare was the most transcendent. But he, who understood human nature the best perhaps of all the sons of men, was not ignorant that luxury debased the intellect: for he said

> "Fat paunches have lean pates; and dainty bits
> Make rich the ribs, but banker out the wits."
> *Love's Labors Lost.*

No one is ignorant that an increased portion of animal food is often prescribed in disease, as is asserted, with great success. I have already remarked upon what I deem this great abuse, and the fallacy by which it is commonly supported. I shall defer what I have to say of its alleged use in scrofula to another part of these papers; and shall here content myself with some observations on its supposed utility in diabetes, and one or two other cursory observations.

The treatment of this disease by a rigid abstinence from vegetables is said to have been first suggested by Dr. Home; but the practice was introduced by Dr. Rollo, with the assistance of Mr. Cruikshank, at Greenwich Hospital, about the year 1796. Dr. Rollo professed to have cured one case by this method, but in a second of longer standing he failed. However, the practice was for a time universally imitated, and various examples of its efficacy have been given. Many examples of its failure have also occurred. The method of treatment has been extolled by some as a most important discovery. One of Dr. Rollo's friends pronounced it to be "another triumph to the pneumatic physicians, which blends with it relief to human misery hitherto incurable." Dr. Latham has also spoken of it in his treatise on diabetes, in language equally warm.

It must be observed, however, that various examples of this disease being cured or subsiding spontaneously have been related by medical writers; and the methods employed have been occasionally the very opposite to this used by Dr. Rollo. Willis, who was the first that observed the sweetness of the urine in this disease, relates the case of the nobleman who recovered from it two or three times by a milk diet, and the use of some

simple remedies. And as the disease has occasionally disappeared under different modes of treatment, several different remedies have had the credit of making cures. Very lately, Dr. Warren has used opium in pretty large doses and with seeming success. Hence it is clear that no judgment can be formed of the real efficacy of the practice, of the number of patients really cured, from solitary examples of success.

So little are the minds of medical practitioners made up with regard to the general utility of this practice, that Dr. Watt has still more recently proposed to treat this disease by a method exactly opposite to Dr. Rollo's, upon the alleged ground of experience, and has gained much celebrity by the work he published. His practice too has been imitated in some of the London hospitals; I cannot say with what success. But that it has been imitated is proof enough of the unsettled state of opinion with regard to the best mode of treating this disease. It has been asserted (I cannot say at present by whom), that in several cases in which apparent cures have been made, the patients died soon afterward of inflammatory diseases; a result which I think highly probable.

Those patients who have perfectly recovered have afterward resumed the use of vegetable food without injury. Hence it must ever remain doubtful what share the temporary, and for the most part imperfect relinquishment of vegetables for a month or two (I believe more than this has been rarely done) had in the cure.*

Many afflicted with diabetes are at the same time deeply consumptive. The second patient treated by Dr. Warren was so, and, shortly after the apparent cure of the diabetes, died consumptive. Now it will not be disputed that for the consumptive symptoms a vegetable diet, or, at least, a vegetable and milk diet, is the most proper. Here, then, we are arrived at a practical *reductio ad absurdum;* we ought to give the meat for the diabetes, and to forbid it for the consumption. Principles which lead to such incongruities can, I suspect, be never founded in nature.

Still I think it must be conceded to Dr. Rollo and his imitators, that as far as diminishing the flow of urine and destroy-

* In the Medical and Physical Journal for August, 1814, is a case of diabetes mellitus cured by animal diet, which was said to have been adhered to nine months. But the patient was not under the eye of the medical attendants, and therefore it is at least doubtful whether it was really observed as strictly as they imagined. It is very difficult to confine patients to vegetables; but it appears to be still more so to restrain them from them altogether.

ing the formation of sugar goes, the practice recommended is very, if not completely, successful. From these experiments it appears to follow, that the pabulum of these symptoms of the disease is furnished exclusively by the vegetable matter taken into the stomach, and that the use of animal matter checks the flow of urine, and gives it alkalescent qualities. But though these facts are conceded, it does not follow that the effecting these changes is doing more than conquering symptoms, whether to the benefit or to the detriment of the constitution is undecided.

The different effects of vegetable and of animal food upon the urine are facts of great importance, and the consequences ought to be duly weighed. In confirmation of the conclusions of Dr. Rollo, I must assert, that, upon vegetable food, I have observed the urine to become at least double in quantity to what it had been upon a mixed diet; and this happened continuously for two or three years, or more, in a subject in whom there was no thirst, and whose daily consumption of liquids was less than half a pint. I have in many others made corresponding observations. From hence I have been instructed, that it is the vegetable matter used, which principally supplies the urine; that the urine will be abundant, with a copious use of vegetables; and that there is no necessary proportion between the quantity of urine and the liquid *ingesta*. If, therefore, we wish to check the flow of urine, the most effectual means would be to imitate the practice of Dr. Rollo, to prohibit vegetable matter of every kind, and confine the patient wholly to animal food.

Now this is the practice, which, in dropsical cases, is, in a certain degree, universally followed. We say that dropsy is a disease of weakness, and requires animal food, in order, God willing, to support the strength. But in general dropsy the urine is likewise scanty, which we commonly in vain attempt to remedy by diuretic medicines. Here, then, we have a second *reductio ad absurdum*. Vegetable food is requisite to increase the urine, and animal food to support the strength; into such strange inconsistencies and absurdities do our practices and opinions lead us!

Vegetable food in many dyspeptic persons gives pain of the stomach. On this account it is customary to restrict or forbid its use to such persons. It may be well for those, who recommend this practice, to consider the following facts, related by a writer who thought it reasonable and proper. This writer says:

"I knew a lady so miserably afflicted with these painful affec-

tions of the stomach, that she was often under the necessity of giving up every kind of vegetable food; even the best fermented bread became uneasy; so much so that her diet has been for weeks solely of an animal nature. I saw her once under these circumstances, when she had many symptoms of the scurvy, such as spongy gums, livid spots on her arms and legs, etc. At this time she lost one or two of her teeth; but the indigestion wore off, and she ate pot herbs for some time without any inconvenience."—*Potter, on Scurvy, p.* 36.

We see, then, that though this lady suffered less pain of the stomach from animal food, the abstaining from vegetables still injured the system, and produced deep scorbutic symptoms. It is, therefore, highly probable, that this lady lost more than she gained by the plan she pursued; and that it would have been better for her to have suffered the pain, than to have purchased ease in the manner she did.

It has been said, that the great fondness that men have for animal food is proof enough that nature intended them to eat it; as if men were not fond of wine, ardent spirits, and other things, which cut short their days; as if the Russians were not fond of tallow; the Esquimaux of train oil; and savages (I might say, perhaps, some of our own vulgar) of blood, entrails, and all sorts of garbage, the thoughts of which sicken a civilized man. The raw and almost putrid flesh of the seal is the delight of the Pesserais of the Tierra del Fuego; and of this the rank fat is to their taste the most delicious part.

But those who think that a simple declaration of their liking a thing is a sufficient apology for the use of it, I would beg to consider whether it is not an argument that proves a great deal too much. A savage has been seen to gnaw a bone of a human body with just as much relish as we suck a bone of mutton. Forster says, "In the province of Matto-grosso, in Brazil, a woman told his excellency, Chevalier Pinto, who was then governor, that human flesh was extremely palatable, especially if taken from a young person. And during the last dearth in Germany, a shepherd killed first a young person, to satisfy the cravings of hunger with his flesh, and afterward several more, in order to please his luxurious palate." Man's flesh, then, is as good as the flesh of the ox or the hog; and the assertion of Swift, on which he has grounded his "Modest proposal for preventing the children of poor people in Ireland from being a burden to their parents or country," is not only groundless, viz., "that a young healthy child, well nursed, is at a year old a most delicious, nourishing, and wholesome food, whether

stewed, roasted, baked, or boiled." Some animals devour their own offspring; and if we do not the same, it is not because their flesh would be disgustful to the palate.

Whether, therefore, the taste of animal food be naturally pleasing to the organs of man, or not, is what I am wholly ignorant of. But it is certain that our having contracted a liking for it is no proof of the affirmative; no, not if there are infants who like it, as soon as they see the light. Infants bring with them into the world the morbid constitutions and morbid appetites of their parents. The flexibility of our organs, by which we contract a fondness for things indifferent and offensive is, however, a quality highly useful, and, indeed, the source of much of our happiness. Men, in consequence, become attached to what is within their reach, and to that to which they are habituated; but not so much but that they have the power to change, if the circumstances of life render it necessary. But this blessing, like every other, may, by its abuse, be converted into a curse.

Wretched are they who are so much enslaved to habit that they find it impossible to change. But there are an abundance of these wretched beings who would rather renounce their lives than forego a momentary gratification. Nothing is more common in this very article of eating. And yet so artificial is the relish we have contracted for our food, that even in European countries we may find those who cannot bear what Englishmen are the most fond of. Mr. Hooker has related a curious instance of this strength of habit. In his journey through Iceland, a beggar accompanied him on his way. Observing the miserable condition of this poor creature, he offered him some food. But he says, "I was extremely surprised and mortified to find that this wretched being, who could scarcely crawl along, but who kept company with us some way on one of our relay horses, was not able to eat a morsel of the ship bread and meat which I gave him, so accustomed had he been to a milk and fish diet, and such a stranger was he to any kind of food essentially different both in flavor and hardness."

Eamus quo ducit gula, was the answer of a very worthy friend of my own, whom I in vain exhorted to change his regimen. And it led him where he was evidently tending, but not very fast, when the advice was given—to the grave.

My reason for objecting to every species of matter to be used as food, except the direct produce of the earth, is founded—as may be seen in my last publication—on the broad ground that no other matter is suited to the organs of man, as indicated by

his structure. This applies then with the same force to eggs, milk, cheese, and fish, as to flesh meat. The different salubrity of each article ought to be estimated by the different degrees of longevity enjoyed by persons, as far as it is influenced by diet. But to obtain any thing approaching to correct calculation on such subjects is obviously impracticable. As far, however, as I can form a judgment from a few facts picked up in the course of desultory reading, fish is the sort of food which, if made the principal article of sustenance, is the most unfavorable to health and longevity.

Fish is a kind of diet which the bulk of the people, who have been accustomed to other food, never use voluntarily as a chief article of sustenance. Servants, where fish is cheap, bargain that they shall not be forced to eat it more than once or twice a week. But it is for the most part with us scarce and dear, hence it is a favorite with the rich, who like whatever is of high price. But even with them it is the cookery which gives it its principal relish.

Dr. Cheyne says of fish, "'Tis always observable that those who live much on fish are affected with scurvy, cutaneous eruptions, and the other diseases of a foul blood. And every body finds himself more thirsty and heavy than usual after a full meal of fish, let them be ever so fresh, and is forced to have recourse to spirits and distilled liquors to carry them off. So that it is become a proverb among those that live much upon them, that brandy is Latin for fish. Besides that, after a full meal of fish, even at noon, one never sleeps so sound the ensuing evening, as is certain from constant observation."

These are not random and unfounded remarks, but are conformable to many authentic observations. Fish does not impart the strength of animal food, but it is as oppressive to the stomach as flesh, and it is more putrescent, as may be concluded from the nauseous and hepatic eructations of the stomach after it has been eaten.

I have already noticed (p. 59) the disappearance of incurable cutaneous diseases, in the isle of Ferro, by the substitution of agriculture to fishing. In Iceland the same diseases have taken deep root, doubtless from the same cause, fish being a principal part of the sustenance of the inhabitants. The following is an extract from Van Troil's letters, illustrative of this point:

"You may ask, sir, how this disease (the elephantiasis) came to be so firmly rooted in Iceland, as it has so decreased in the south, that it has almost disappeared there? I believe that this is not so much owing to the climate as to the manner of

life and diet. People, whose continual occupation is fishing, are night and day exposed to wet and cold, frequently feed upon corrupted rotten fish, fish livers and roes, fat and train of whales, and sea dogs, as likewise congealed and sour milk. They commonly wear wet clothes, and are exposed to all the hardships of poverty. The greater number of these are therefore to be met with in the lower class; on the contrary, where less fish and sour whey are eaten, and more Icelandic moss (Lichen Islandicus), and other vegetables, this disease is not so prevalent, according to an observation made by Mr. Paterson in the above-mentioned transactions." — *Transactions of the Royal Swedish Academy of Sciences.*

The recent testimony of Mr. Hooker is to the same effect. He says, "The Icelanders in general do not attain to an advanced period of life, though many live to the age of seventy, and enjoy a good state of health; but this is among the higher class of people. Scurvy, leprosy, and elephantiasis are no where perhaps more prevalent; and they are likewise, according to Van Troil, peculiarly afflicted with St. Anthony's Fire, the jaundice, pleurisy, and lowness of spirits." In another passage he testifies "that the elephantiasis is cured by the use of antiscorbutic vegetables."

A vulgar notion has been prevalent, that a fish diet is favorable to the powers of generation, and that persons living on it are more than commonly prolific. But this opinion appears to be wholly erroneous. On the contrary, among such persons the increase of the race is very small. Forster says, "In Greenland and among the Esquimaux, where the natives live chiefly upon fish, seals, and oily animal substances, the women seldom bear children oftener than three or four times; five or six births are reckoned a very extraordinary instance. The Pesserais, whom we saw, had not above two or three children belonging to each family, though their common food consisted of muscles, fish, and seal flesh. The New Zealanders absolutely feed on fish,* and yet no more than three or four children were found in the most prolific families; which seems strongly to indicate that feeding on fish by no means contributes to the increase of numbers in a nation."

Our knowledge of the average length of life, to which the fish-eating tribes of mankind arrive, is necessarily scanty, they not being numerous, and of a very low degree of civilization.

* The writer must mean that it is the only animal food (if I may so speak) they use. We know that they eat the roots of ferns, and are not wholly ignorant of agriculture.

But as far as our information reaches, it tends to show that this period is very short. I shall bring forward two distinct evidences for this conclusion, of which the coincidence of the testimony is very remarkable.

The first is that of Captain Cook, who informs us that at Onalashka (an island on the north-west coast of America), fish forms a principal part of the food of the inhabitants. They dry large quantities of it in summer, which they store in small huts for their winter stock. Of these people this very sagacious observer remarks: "They do not seem to be long-lived. I nowhere saw a person, man or woman, whom I could suppose to be sixty years of age, and but very few who appeared to be above fifty."

An account given by Bruce of the length of life of the inhabitants of the largest island of the Red Sea entirely corresponds with this. He says, "At Dalahac, the sustenance of the poorer sort is entirely shell and other fish" (they have also a good deal of goats' milk, and some millet, but no bread). "I could not observe a man among them that seemed to be sixty years old."

These observations are the more worthy of notice, as being made in very different latitudes; and as there are few places indeed so unhappily circumstanced, as not to possess a few with constitutions strong enough to carry them to four-score. They are, in general, conformable to a remark of Friar Bacon, who says, "Bread yields a moisture safer from destruction than flesh, and flesh produces a moisture more removed from corruption than fish." Facts such as these should be well weighed by those who institute and support societies for supplying the poor with fish, and those who are so anxious to promote the fisheries at the expense of agriculture. For it is to be observed that they cannot both prosper in the same places; the occupation of fishing being most lucrative and secure at the season when the husbandman ought to be most busy.

Of all the other substances which enter largely into human diet, the milk of herbivorous animals is, probably, that which approaches most nearly in salubrity to pure vegetable matter. Being secreted almost immediately after taking in food (as nurses constantly experience), it partakes the most of the properties of the food. Accordingly, we find that milk is impregnated with a saccharine substance, and that it is susceptible of the vinous and acetous fermentations. Hence milk is in part vegetable food; and as such, is used by all pastoral nations, and serves in a measure as a substitute for it. The Brit-

ish aborigines of our own island were in this condition, living, as Cæsar has informed us, upon milk and flesh.

Many have been sustained by milk alone, even for a series of years; and have avoided some of the sufferings which they had experienced when eating flesh. I cannot doubt, therefore, that to those who can submit to such a course, it would prove more salubrious than a diet of animal food, and, probably, such persons would lengthen their lives by this practice.

But independent of the irksomeness and disgust which have been commonly experienced from milk, when used abundantly, it seems to me highly unphilosophical to suppose that there can be any substitute ever discovered for natural diet. There are some gases which approach very nearly in their constituent principles to atmospheric air. But we do not find it possible to use any gas as a substitute for common air, consistently with health. We cannot even add to or diminish from the constituents of common air, without rendering it less fitted for respiration. Why then should we fancy that we may yield to any caprice or fancy with regard to our food; and that any substance whatever, which the juices of the stomach can dissolve, is equally wholesome; or that, because the milk of a cow affords the best possible nourishment to a calf, it is therefore the substance of all others the best suited to a child?

For milk, besides its saccharine and fermentable principles, contains a coagulable matter, the curd or cheese, which is more perfectly animalized, and which is very nearly allied to the albuminous matter of animal bodies. Hence the operation of milk upon the system is in part the same as that of animal food, though it is less powerful in degree. It at first fattens and heightens the color. It therefore possesses a degree of the stimulating power of animal food, and must eventually have similar results. But milk, moreover, in many habits excites headache, thirst, weight, and oppression at the stomach; and in those who have tried to make it the principal part of their sustenance, the attempt has commonly caused an almost insuperable disgust. This, I have little doubt, is the true reason why such an experiment is now so rarely made. It affords sufficient ground for thinking that milk ought to be excluded, as much as possible, from the diet of persons to whom a strict adherence to regimen is necessary.

We give it indeed to our children, and this is so customary that I have heard it exclaimed against as a perfect act of inhumanity to deny it them. But I cannot find that children from whom it is withheld at all regret or suffer from the want of

it. The whole immense population of China is brought up; and the use of milk is hardly known throughout this vast empire.

If we consider pure nature, we must acknowledge that our food ought to be of such a kind as to require mastication, at least as soon as we are furnished with teeth. This consideration alone is enough to make us suspect that milk cannot be strictly proper nor perfectly suitable to the human constitution. We are always complaining of the trouble our teeth give us. But from our practices we appear to regard them as useless and superfluous.

Some, from whom I expected more correct reasoning, have argued from this custom of giving milk to children, and even to infants, without apparent detriment, that it therefore must be perfectly innoxious But in this whole discourse we are inquiring, not what the healthy may do with impunity, but what is most proper for the diseased, in order to restore their health or palliate their sufferings. Now I see no reason why milk should be reckoned perfectly innocent, because we give it to children, or why a healthy child may not bear deviation from the most natural and proper food with as much, or even with greater, safety than a healthy adult. In such a child, though the bodily strength is feeble, the vital powers are strong, and indeed they must frequently be much stronger in the child than in the full-grown man. It cannot be but a child, which may have four-score years of life remaining to it, must be vitally stronger than an adult who may have nearly finished his race of life; it may be expected to bear injuries better, and in fact it commonly does so. But with regard to the question before us, it is very common for children to die whose principal substance has been milk. From the custom of feeding children with it, then, we can infer nothing with regard to its salubrity.

Milk eating and flesh eating are but branches of a common system, and they must stand or fall together. If there were no demand for the flesh of the animal, the milk would not even be produced. The real question, taken in the widest extent, is, whether the agricultural system ought not wholly to supersede the pastoral system, as in countries increasing in population it is constantly doing in some degree. Nature herself, that is to say, the productive power of the soil, has confined the possibility of maintaining the domestic animals within such strait limits, that an abundant population cannot be supplied, from its own soil,* with a daily moderate portion either of flesh or of

* The country Laplanders (for there are fishing tribes of the same race) present us with the most perfect example of pastoral manners. They

milk; much less can it feed them upon these substances. It is said to have been the wish of the fourth Henry, that every peasant of France should have his *poulet dans le pot.* But this was a dream of benevolence, to the realization of which nature has placed an insuperable barrier. Search the world through, and an example cannot be found of a large society living upon flesh, the produce of its own soil. The same may also be said of milk. Both the one and the other are monopolized, as it were, by those members of the community who possess some superfluous property. But this order of men will ever struggle in vain to draw a line of demarkation between themselves, and their fellow-men, and to raise themselves, as it were, above the common lot of humanity. Nature disdains our artificial distinctions, and views all her offspring with the same parental eye. Can, indeed, any notion be so irrational, so monstrous, as to suppose that a Creator has formed myriads of human beings, perfect in strength and intellect, and at the same time has made it impossible for them to provide what is necessary to the preservation of animal life? We may safely conclude then, that what is not necessary cannot be natural; it is easy to go one step further, and say, what is not natural cannot be useful.

I shall in this place introduce a few words on the question of how far artificial preparation of all our vegetable food is necessary or useful. That many sorts are really improved by cookery admits of no question; but it may be doubted whether by indiscriminately macerating every thing as we do, we do not often injure the substance we operate upon, instead of improving it. With us, a parent will correct his child for eating a raw turnip, as if it were poisonous. But the Russians, from the lowest peasant to the highest nobleman, are, accord-

have small quantities of meal, supplied by commerce, and eat such vegetable matter as their country spontaneously produces, particularly the angelica, which is their great delight. But the far greater part of their sustenance is from the flesh and milk of the rein-deer. The wealth of the Laplander is estimated by the number of rein-deer which he possesses. Of the number of these animals necessary to a family we have from a late traveler the following account: "We had yet seen no herd under 300. With this number a family is said to be in moderate prosperity. It can be maintained. They can afford to kill as many rein-deer as are necessary for food and clothing, shoes and boots, and to sell besides a few rein-deer skins, hides, and horns to the merchant for meal, or brandy, or woolen stuffs. On the other hand, a family lives very miserably on a hundred of these animals, and can hardly keep from starving." (Von Buch's Travels through Norway and Lapland, p. 322.) We see, then what a space of ground each Lapland family must occupy, and how impossible it is that a country upon such a system can become populous.

ing to Clarke, eating raw turnips all day long. We may be certain then, that there is no harm in the practice.

But further, there is every reason to believe, particularly from the observations of the navigators in the Pacific Ocean, that those races of men who admit into their nutriment a large proportion of fruit, and recent vegetable matter, unchanged by culinary art, have a form of body, the largest, of the most perfect proportion, and the greatest beauty, that they have the greatest strength and activity, and probably that they enjoy the best health.

This fact alone is enough to refute the vulgar error (for it deserves no other name) that animal food is necessary to support the strength. It may be necessary to those whom the injustice or the artificial wants of society have doomed to the labor of dray-horses. Even this is doubtful. But we see that almost the whole agricultural labor of the country is performed without it. It cannot, therefore, be necessary to this species of labor, nor to any other which a man ought to undergo. The same fact may still prompt us further to inquire, whether there is any just foundation for the prejudices which are very prevalent against the use of fruit, as if there were something in it pernicious or dangerous, and to examine from whence these prejudices have arisen.

This notion of fruit being unwholesome has descended to us, even from the days of Galen. He has said, that "All fruits are of a bad composition, and useful only to persons who have been exposed to great heat, or harassed by a long journey."

But this same Galen has soon after acknowledged that fruits afford a perfect nourishment; in proof of which he observed, that the persons who are set over the vineyards, and who live for a couple of months upon nothing but figs and grapes (with the addition, perhaps, of a little bread) become fat. Dr. Cleghorn says that this observation of Galen is annually confirmed at Minorca, it being remarkable that the persons appointed for the same purpose there commonly continue in good health, though in that season tertians usually rage with the greatest violence. Similar observations have been made upon negroes in the West Indies, who live on the recently expressed juice of the sugar cane; and Sir George Staunton says, "As in the West Indies, so in China, the people employed in the fields during this season" (the time of pressing the sugar canes) "are observed to get fat and sleek; and many of the Chinese slaves and idle persons are frequently missing about the time that the canes become ripe, hiding themselves, and living altogether in the plantations.

The prejudices then entertained against fruit and recent unchanged vegetable matter cannot be founded in any just observations, proving that they are truly insalubrious, and unfit for human nutriment. Yet it cannot be doubted that matter of this kind excites, in many, great inconvenience and uneasiness. There are those to whom a raw apple is an object of terror almost as great as a pistol shot. Numbers of people cannot bear a morsel of fruit. Dean Swift, in several of his letters, complains that he could not eat a bit of fruit without suffering, and declares how much he envied persons whom he saw munching peaches, while he durst not touch a morsel. Wood, the miller of Billericay, who set up for a sort of a doctor, warned people strongly against the use of fruit, guided, no doubt, by a similar feeling of uneasiness.

But we see children glut themselves, almost to bursting, with fruits, and suffering nothing from them but a little temporary uneasiness from distention. We see, as I have said, tribes of people principally supported by them. And from the great pleasure which children and young persons, whose stomachs are the most healthy, receive from them, it seems probable that fruit, and the produce of trees in general, instead of being unwholesome, is the sort of matter the most suited to the organs of man. Such was the opinion of the great naturalist Linnæus. "This species of food," he says, "is that which is most suitable to man; which is evinced by the series of quadrupeds, analogy, wild men, apes, the structure of the mouth, of the stomach, and the hands."

We have, indeed, annual accounts of persons killing themselves by eating nuts or cherries; but such relations probably come from persons who are little capable of determining the causes of death or disease. Upon a sudden seizure, particularly of fatal illness, the last thing eaten commonly bears the blame. There may be found in the Philosophical Transactions a grave account, by one of the most eminent members of the Royal Society, of a boy killed by eating apple dumpling. I have never trembled on this account when I have had a good plateful of apple pudding before me.

That fruit and recent vegetable matter, in general, is not merely innoxious, but much more congenial to the constitution than the same matter which has been changed by culinary preparation, may be further deduced from its superior efficacy in the cure of scurvy. The fact of the facility with which this disease, which has proved fatal to thousands of seamen and others, may be cured, is so fully established that it is needless

to cite any proofs of it. Suffice it to say, that if the patient is not consumptive, nor laboring under any other chronic disease, it will yield in the course of a few days to the use of fruit, lemon juice, antiscorbutic herbs, or, in short, of any vegetable matter that is wholesome and fresh. Even raw potatoes have effected a cure. And so speedy is the effect upon the system, that the color of a scorbutic ulcer becomes improved and reddened in twelve hours after the use of lemons. It is not perhaps so well known that vegetables which have been submitted to the fire are far less efficacious against this disease. But this fact seems perfectly established. On this point a physician of the first authority on such subjects has these observations:

"It is certain that the medical effects of the native sweet juices are, in other respects, very different from what they are in their refined state; for manna, wort, and the native juice of the sugar cane are purgative, whereas sugar itself is not at all so. This affords a presumption that they may be also different in their antiscorbutic quality; and there is reason to think, from experience, that the more natural the state in which any vegetable is, the greater is its antiscorbutic quality. Vegetables in the form of salads are more powerful than when prepared by fire; and I know for certain, that the rob of lemons and oranges is not to be compared to the fresh fruit. Raw potatoes have been used with advantage in the fleet, particularly by Mr. Smith of the Triton, who made the scorbutic men eat them sliced with vinegar, with great benefit. This accords also with what Dr. Mertens, of Vienna, has lately communicated to the Royal Society of London."

It has been observed by some other writers, that it adds much to the suffering of the scorbutic seaman when, from the rotten state of his teeth, he is unable to eat the sour krout without boiling, for that the boiling very much impairs its antiscorbutic powers.

But this is not all. There have been examples of a deep scurvy appearing among persons whose diet was entirely vegetable. Dr. Trotter has related an instance of this in a cargo of unfortunate negroes in a slave ship, who were fed upon beans, rice, and Indian corn. It is proper, however, to add, that these poor wretches were most diabolically treated, being stowed *spoonways*, according to the technical phrase; and some were actually suffocated for want of fresh air.

These facts are enough to show that there is an essential difference between fresh vegetable matter and the same matter changed by cookery; and they make it in a manner certain,

that in the latter state it is less congenial to the human frame. If, therefore, in this state it creates uneasiness in the stomach, it must proceed, not from any noxious quality of the vegetable, but from some vice of the stomach itself. And it illustrates most forcibly how much we may be deceived, by inferring any thing concerning the good and ill qualities of a substance from its primary operation on a morbid body; how little, having depraved our stomachs by the stimulation of an artificial system of diet, we can confide in the feelings conveyed.

The internal coat of this organ possesses an exquisite sensibility, if not to all impressions, to those which are peculiarly fitted to it. This sensibility appears to be a species of taste, very nearly like that of the tongue or palate; and our likings and aversions may be suspected to be caused by the relation between this membrane and the substances applied to it. Now under the common habits of life we find a slow but constant change taking place with regard to the objects of liking, so that gradually all the substances which were most the objects of desire, and afforded the highest pleasure in our early days, when it must be supposed that the organs were the most healthy, become indifferent, if not disagreeable. All the effective agents which are applied to the system may contribute to this result. But probably the stimulating part of our diet—the animal food and fermented liquors—is that which has the most active share in its production.

In consequence of these habits, the stomach becomes more and more agreeably affected, and, as it were, in unison with whatever is stimulating, and which is really warm or excites the feelings of warmth; and, on the other hand, what is cool or what excites the feeling of coldness is disagreeable and uneasy. In this respect the internal parts of the body, and especially this very sensible membrane, is similar to the external, which may be made so tender by large fires, close rooms, and indulgence, as not to bear without pain the common temperature of the atmosphere. A gouty stomach, constantly under the influence of wine, spirits, rich sauces, and made dishes, finds it necessary for comfortable feeling to have the stimulus gradually heightened; weak wines are deficient in power; it requires the strongest, or even ardent spirits, to make it comfortable; and every thing solid must likewise be highly seasoned. Many persons, too, have the stomach in this condition who are not subject to gout.

Now these are the persons to whom vegetables of all kinds are the most distasteful and insipid, and, as they think, from the

flatulence they excite, indigestible. But fruit, and all vegetable matter unchanged by cookery, are still more opposite to this condition of the stomach, for they excite a sense of coldness in the organ to which nothing is agreeable but what is stimulant and fiery; as they dissolve with more slowness than any other species of matter, they are esteemed the most difficult of digestion, and the impression which they make is more permanent than that of any other matter which is used as food.

These are the circumstances which appear to me to make fruit and recent vegetables so offensive to a number of persons, and to have raised such strong prejudices against them as if they were really pernicious. That in a multitude of persons they excite uneasy feeling, and therefore appear to disagree, is certain; and those who argue immediately from their feeling can hardly form any other conclusion. But those who look a little below the surface of things will be less hasty in their determinations. They will inquire how these uneasy feelings are generated, and what they indicate. They must see that they may arise from a diseased condition of the stomach, as well as from any thing noxious in the matter applied to it; and if the account I have given be just, such must be the truth. This will lead them a step further, and they will inquire whether by breaking in upon the old habits, it is not possible to alter the sensations, and to get rid of the pains or uneasiness by amending the state of the stomach itself?

Considerable experience has convinced me that this is very possible. I have seen persons who have followed the regimen I advise in chronic diseases regain their relish for fruit, and indulge in it without any detriment or inconvenience. This they could not do under their former mixed regimen; and it abundantly compensated for the deprivations they sustained in other articles. A gentleman told me that under this regimen he can eat cherries in any quantity with impunity, which formerly were used to give him considerable uneasiness.

If I am right in my account of the source of the uneasiness which many persons suffer from fruits and recent vegetables, it must follow that it is a gross absurdity to deny them to children, young persons, or invalids, who have a desire for them and in whom they produce no uneasiness. And yet this absurdity is committed daily. Children are forbidden fruit who have the greatest longing for it. If any desire can be truly be said to be natural and instinctive, it is this. As such it should always be moderately indulged. To act otherwise is equally irrational and cruel.

I hope not to be so far misunderstood (even that has happened) as if I blamed all culinary preparation of vegetables. But I think that the practice is carried to excess. It appears to be the general opinion that almost all vegetable matter, if not previously submitted to the action of heat, is absolutely indigestible and noxious. But the fact is that almost all our common garden vegetables may be used without any such preparation; and it is highly probable that in this natural condition they would be more nutritive, more strengthening, and certainly far more antiscorbutic than when they have been changed by the fire. On this account it is that I think it highly advisable that some portion either of fruit or of fresh vegetable matter should be used daily. Children, too, should be encouraged in the use of such things instead of being forbid them, as is the common practice. If the stomach be so much diseased that nothing of this kind can be borne, soups made with a large quantity of recent vegetables may be substituted. They seem to be far preferable to vegetables much boiled; the soup and the vegetables may be eaten together, and are very agreeable to the palate.

I have been asked repeatedly, as I recommend to the invalid distilled in place of common water, whether I think it necessary to use the same kind for boiling vegetables. I take this opportunity, therefore, to say that I regard such nicety as needless. If the matter to be boiled absorbs a large quantity of water, as rice, this attention may be right. In making bread the same attention should, if possible, be paid. But the quantity absorbed by common culinary vegetables is probably too small to deserve notice. Those who wish to be extremely exact may dress their vegetables by steam.*

There may be other parts of our dietetic habits which it would not be improper to examine. The use of tea and coffee, for example, is by many suspected, and, perhaps, not without

* One of the principal marks of distinction between the face of a negro or the savage man, and the European, is in the form of the face. The negro has the mouth and chin very prominent, so that a perpendicular line let fall from the forehead cuts off a much larger portion of the lower part of the face in the negro than in the European. Now it seems very clear that this form of the face is generated by the use of food requiring more mastication, consequently greater force of the masticating organs. In consequence, the temporal, massiter, diagastric, and the other muscles of mastication become habitually stronger, the surface of attachment enlarged and elongated, and the whole form of the head and face changed and modified from these circumstances. If this position be just, the form of the head and face, which distinguishes civilized nations, is produced in a great measure by the cookery of their food.

reason. But I abstain from subjects on which I am conscious that I have nothing of value to offer. I shall, therefore, conclude with making a single inquiry with regard to bread, which I shall leave to the determination of those who are competent to pronounce on such questions, and who have proper opportunities of observations. What I would ask is this, Is the farina of wheat, or any other, improved or injured—is it made more or less wholesome by fermentation? or, in other words, which should be preferred, leavened or unleavened bread? The leaven or fermented bread sits lighter upon the stomach; but this is no proof that it is really more salubrious. We know very well that the coarsest black bread, which is as heavy almost as a lump of dough, gives much nourishment and strength. A sensible writer says, that he "has heard a seafaring man observe that he was always sensible of a diminution of muscular strength when he left off the use of biscuit and ate common bread." Hippocrates has given a corresponding testimony. His words are "Leavened or fermented bread is lighter in digestion, and passes easily through the body; but unfermented bread does not go off so easily, though it nourishes more where the stomach can bear it."

If these observations are correct, the fermenting of bread and the cookery of vegetables are practices adopted by mankind from the same motives; they accommodate the matters to which they are applied to the factitious delicacy of our digesting organs, which is effected, however, at some expense of their strengthening and nutritive powers.

CHAPTER VII.

Noxious habits of slow operation.—Erroneous statements.—Vegetable food necessary to a perfect organization.—It is produced in all climates habitable by man.—The natural progress of society.—The use of animal food a relic of barbarous manners.

In ascribing the diseases of mankind to their situation and habits of life, I have commonly said that these are to be considered not as their immediate, but as their remote and antecedent causes; a distinction which it is necessary carefully to attend to. For it is obvious that no habit whatever, whether it regard food or drink, or situation, can possibly have been

received and adopted by any society of men without its being apparently salubrious to the great majority of the society. Were it otherwise, the truth would become evident even to the rudest savages; and they would accordingly change their habits, or at least be disposed to do so. But the majority of the society enjoying a portion of health and comfort, with which they are contented, the operation of remote causes escapes observation, and men become exceedingly unwilling to connect their sufferings with the things which constitute a large portion of their enjoyments.

The example of persons arriving at what is deemed extreme old age still further confirms the delusion. How, it is asked, can that be pernicious which persons use, and enjoy good health, perhaps for four-score years and upward? It is, indeed, a wonderful instance of the varieties of the human constitution. But when we see that there are men who use daily large quantities of wine and ardent spirits without apparent detriment*—that they carry it even to the extent of daily intoxication with a long-continued impunity—we must confess that these facts prove nothing more than this astonishing variety. They show us that we are really ignorant of what is the natural duration of human life under the most favorable circumstances. The examples of extraordinary longevity, which some few individuals have been known to attain, show how much we are in the dark

* The late Dr. Holyoke, of Salem, Mass., lived to the age 100 years. He was in the habit of being temperate in all things. He was a man of a most remarkable character, never tempted to excess. He used to live without much care, without thinking whether he would do himself harm or not. He was very cheerful, and of a very benevolent heart and easy conscience, and patient of little injuries. He was in the habit of using intoxicating drinks in small quantities. He had a preparation, which consisted of one table-spoonful of Jamaica rum and one table-spoonful of cider, diluted with water, which he used after dinner, while smoking his pipe. I would mention, in connection with this habit, that he did not die of old age. I examined the body myself, with very great care and attention. The heart and organs which are apt to be diseased in aged persons, and to become hardened like stone, were as soft as an infant's, and for aught that appeared, might have gone on another 100 years. And so of the other organs. The liver and brain were in a healthy state. He died of the disease which is most commonly produced by the use of ardent spirits and tobacco—an *internal cancer*. There was a band three or four inches broad around the stomach, which was schirrous or thickened. I am far from wishing to say any thing to the discredit of the late Dr. Holyoke, who was my personal friend. But if his great age is to be made an argument for the moderate use of spirits, I desire that his schirrous, cancerous stomach should be put alongside of it.—*Dr. Pierson's testimony before the Legislature of Mass. See Temperance Journal*, 1839, *p.* 67.—S.

on these subjects. Men have arrived at double, and more than double, what is the greatest common extent of human life. The real wonder, therefore, is that such multitudes perish prematurely.

The effects, therefore, of animal food and other noxious matter, of inducing and accelerating fatal disease, are not immediate but ultimate effects. The immediate effect is to engender a diseased habit or state of constitution, not enough to impede the ordinary occupations of life, but in many to render life itself a long-continued sickness, and to make the great mass of society morbidly susceptible of many passing impressions, which would have no injurious influence upon healthy systems. Even in the early stages of life, the agency of these habits is often sufficiently obvious. It appears in the change of complexion, the falling off of the hair, the decay of the teeth, the impaired power of the senses, as of the hearing and the eyesight, defœdations of the skin, and many other marks of disease, which are as various as the infinitely various constitutions of different individuals. As life proceeds, the resisting powers of the body diminish, and, in consequence, the derangement of the system, produced by the slow but incessant action of morbific causes, becomes more evident. In some, the springs of life are secretly undermined, with little evident derangement of the functions; and such persons are cut off suddenly by acute illness, while enjoying apparent good health. In others, chronic diseases take place, perhaps not immediately affecting life, but which, for the most part, increase in severity as years advance. Others, again, suffer lingering diseases, which gradually, but inevitably, terminate in the dissolution of the body.

Such diseases as these, then, must be regarded as the ultimate result of the noxious powers which habitually act upon the body. In all of them, the vitality of the body, or the powers which are essential to the due performance of the functions of life, are radically impaired. The variety of symptoms can be esteemed to be nothing more than the different forms of death, as some organs suffer more than others.

It is much to be regretted that so little can be found in medical writers on the subject of the connection of the diseases with the food, circumstances, and occupations of different nations or classes of society; and still more, that the greater part of what has been said on these subjects is probably erroneous. Some assertions, made apparently on good authority, are so directly contradictory to the doctrine I have attempted to establish, that I cannot pass them wholly unnoticed.

The Laplanders have been often asserted to be an example of a people living wholly upon animal food, and enjoying under this diet perfect health, and arriving commonly at an extraordinary degree of longevity. The authority of Linnæus is cited in proof of the correctness of these assertions. He has said of the Laplander: "*Tu ducis innocentissimos tuos annos ultra centenarium numerum cam facili senectute et summa sanitate. Te latent myriades morborum nobis Europæis communes.*"

With regard to longevity, no assertions can be depended upon, unless taken from authentic registers, of which, probably, none exist in Lapland. It seems hardly possible that many individuals among this illiterate people could be really acquainted with their own age. And with regard both to health and longevity, the accounts of modern travelers give us no reason to think that this people is peculiarly favored. Acerbi, in his travels, mentions incidentally one young widow, and another paralytic person; and as, in transiently passing through such a country, the opportunities of observation must have been very few, we may fairly conclude that there is, at least, the usual proportion of sick among them.

Still less favorable is the general picture of their habits and manners. The above-mentioned writer describes them as "feeble, awkward, and helpless beings." He says, that "the unsettled and wandering Laplanders are remarkable for sloth and dirt;" that "stupidity, laziness, and beastliness were prominent in all they did, and in all that appertained to them." And of these tribes it appears that those who subsist by fishing are the most miserable. The account recently published by Von Buch is, if possible, less advantageous than that of Acerbi.

Nor is it true that the Laplanders do not use some vegetable matter in their diet, even daily. They exchange, at the fair of Kantokeino, the skins of their animals for meal among other articles; and Acerbi asserts that "the corn they obtain is converted into flour for their own use, which, through long habit, is become so necessary an article of their subsistence that they are miserable if they have it not all the year round."

Moreover, the herds of rein-deer are milked daily, and therefore much of their subsistence must be drawn from this source. It appears that the milk, by being frozen, is kept perfectly sweet and fit for use during all the winter months. This it is which serves as a substitute for vegetable food. After all, however, it must be allowed that the supply of vegetable food to this people, from their ignorance of agriculture, is very scanty; and

I cannot doubt that they suffer from this cause exceedingly. If, as Linnæus asserts, they are exempt from many European diseases, they are, probably, those proceeding from contagions, which can hardly be kept up in a country so thinly inhabited.

If the doctrine I have maintained be well founded, we ought certainly to expect to find that the inhabitants of those countries which, from their peculiar circumstances, are the most scantily supplied with vegetable food, are the most short-lived. Of these Lapland is the strongest example in Europe; but I know not that there are many registers of the mortality of this people. Next to Lapland, the supply of Iceland is perhaps the most scanty, the country being poor, with little or no agriculture, and receiving all its corn by importation. Accordingly, flesh, fish, and milk (particularly the two latter) are the principal articles of sustenance of the inhabitants, I should, therefore, have confidently expected that in Iceland the duration of life would be relatively small.

But I find it asserted by Dr. Holland, a gentleman who accompanied Sir George Mackenzie in his tour through Iceland, that "a comparison of facts would probably prove that the longevity of the Icelanders rather exceeds than falls short of the average obtained from the continental nations of Europe." This assertion, coming from a member of the profession, and an enlightened man, deserves some consideration.

Fortunately the work from which it is taken furnishes the materials for its refutation, and it shows how little dependence can be placed on hasty and cursory observations, made on subjects with which the writers are perhaps but imperfectly acquainted. Dr. Holland himself has supplied us with a document, an examination of which leads to a conclusion the very reverse of that which the doctor has drawn. From this document it appears that in 1810, Iceland contained 47,207 inhabitants. Of this number there were 1698 between 71 and 80 years of age, inclusive; and the number of persons living, who were still older, was 484. If to this latter number we add a tenth part of the former, for the number who, having passed the age of 79, would be reckoned to have reached 80 (a number which must, in fact, be considerably too large), we shall have a total of 653 persons of 80 years and upward. From this it appears that in Iceland 1 in 70 lives to be 80 years of age. But, according to Dr. Price (see p. 43), even in London 1 in 40 arrives at that age; and in country places in England, a fourteenth, or even less than a twelfth part of the inhabitants have been known to reach this age. We see, therefore, that

Iceland, instead of exceeding other European countries in longevity, falls very short even of the metropolis of England; and we may safely conclude that a diet consisting principally of fish and milk is unfavorable to long life.

I cannot avoid noticing in this place the remarkable fact, recorded in this same work, that at Heimaey, the only one of the Westmann Islands which is inhabited, scarcely a single instance has been known during the last twenty years of a child surviving the period of infancy. In consequence, the population, which does not exceed 200 souls, is entirely kept up by emigration from the main-land of Iceland. The food of these people consists principally of sea-birds—fulmers and puffins (*procel laria glacialis* and *alce arctica* of Linnæus). The fulmers they procure in vast abundance, and they use the eggs and flesh of the birds, and salt the latter for their winter food. There are a few cows and sheep on the island, but the inhabitants are said to have no vegetable food.

The disease which principally cuts off the infants is that species of tetanus which has been called *trismus infantum*. The writer of this account says that the same sea-fowl "is the principal aliment of the people of St. Kilda, the most remote of the western islands of Scotland, which I visited in 1800; a peculiar and fatal disease, which attacks children, is common to both places, and may probably be occasioned by the mode of living."

Norway is a country in the same situation as Iceland. It is said that the greatest part of the soil is incapable of bearing corn; and in consequence the principal dependence for that essential article is on importation. Pasturage affords a large proportion of the subsistence of the people. The *housemen*, or married laborers, all possess cattle; the poorest have two or three cows; and stores of cheese, salt butter, salt fish, and bacon are laid up for winter provisions. Such kinds of matter therefore form a very considerable proportion of the daily food of the mass of the inhabitants. From these facts, for which I am indebted to Mr. Malthus, we may conclude that the Norwegians, as a community, use a less proportion of vegetable food than is common in this country; and I should therefore infer from it a more rapid relative mortality. But the account of Mr. Malthus is apparently in contradiction to this inference, for he says of this country, "in common years the mortality is less than in any other country in Europe. The proportion of the annual deaths to the whole population, on an average throughout the whole country, is only as one to forty-eight."

Notwithstanding this apparent contradiction, a more narrow

inquiry must convince us that it is favorable to my principles. It appears in the first place that the climate of Norway is very healthy, and it is allowed that it is remarkably free from epidemic sickness. This exemption is principally due to the scantiness of its population, scattered over an immense surface. The Norwegians are still very much in a pastoral state, depending for their support upon their cattle, and this forms an additional proof that this state is unfavorable to the increase of a people.

But, secondly, Norway is without any large manufacturing towns; what there are, are few and inconsiderable; the largest of them, such as Christiana and Drontheim, do not possess a market. Hence we see that Norway ought to be esteemed to be almost a country place; and to estimate the consequences of its habits, we should compare its mortality, not with that of the countries crowded with large and populous cities, but rather with that of the villages and country places of the same countries. The inhabitants of Norway are, upon the whole, much more dispersed than these. But the mortality of Norway is somewhat greater than that of Great Britain, including its immense metropolis, and its numerous and crowded cities—this being, according to the last returns, only one in forty-nine of the whole population. Much greater is it than the average mortality of the country places and villages of Great Britain. In the vicinity of Manchester it has been shown that this mortality was only one in fifty-six; at Ackworth only one in sixty. In these places contagious fevers of various kinds must add to the destruction of life. From all these considerations I cannot consider the example of Norway as affording any proof of the salubrity of the diet of the inhabitants.

In the Statistical Reports of Sir John Sinclair, copied by Dr. Beddoes, in his Essay on Consumption, I find the following paragraph: "RAYNE, *Aberdeenshire.* Stockings knit by all the women, some old men, and boys. Hysterics very common, and cutaneous disorders. Yearly deaths, seventeen in a population of 1173; of the seventeen, seven or eight are from consumption; living, wretched."

What the writer of this account understood by *wretched living* does not appear. I conjecture, however, that it means principally oatmeal and potatoes. Whatever it be, it would be well if this *wretched living* were more generally adopted; for it appears that the annual mortality of this place is no more than one in sixty-nine; a smaller proportion than any recorded in England.

It is evident from these examples that no weight can be

attached to vague assertions, even of respectable observers, on these subjects, unless they are supported by documents which evince their accuracy.

From the high state of cultivation of almost all European countries, the supply of vegetable food is abundant throughout this part of the world. From its comparative cheapness, the laboring classes are in many situations from necessity confined to it; and of those in easy circumstances, most persons make it the principal part of the diet of children; and, for the most part, all use a moderate portion of vegetable food two or three times a day. The greater part of these communities are well grown and well formed. This is so much the ordinary condition of the bulk of the people, that it is looked upon as the common course of nature; and deviations from the proper proportions of the body, or other organic defects, are considered as diseases peculiar to the individual, arising out of some defect of the constitution, and in no manner connected with the mode of living.

But if we examine the uncivilized races of mankind, we shall, perhaps, be led to form different conclusions. These whole tribes of men we consider as barbarians, and with reason, if we consider the knowledge of letters as the test of civilization. But many of them, being acquainted with agriculture and other useful arts, are so far as little barbarous as the mass of the population of Europe. Other tribes again are very imperfectly versed in that or any other of the most necessary arts; and some are wholly ignorant of it, and of almost all other useful knowledge.

This diversity of mental cultivation has produced a corresponding diversity in their general modes of life, and particularly in their food. It is easy to see that those who practice agriculture, not only escape from the misery of a precarious subsistence, but acquire a bodily organization infinitely superior to that of tribes who are ignorant of this useful art. On the other hand, among these latter tribes a defective organization is so common that it can be accounted for only by errors in the mode of life. This will lead us to the conclusion, which I am convinced is perfectly correct, that an abundant supply of vegetable food is necessary to the complete and perfect organization of the human body.

I shall cite a few facts in proof of the justness of this doctrine.

The inhabitants of the Andaman Islands (situated in the Indian Ocean) are described as the most uncivilized of the

human race. They have the characteristic features of the negro. Though lying within the tropics, the cocoa-nut-tree, which is so great a blessing to almost all the islands of the Indian and Pacific oceans, is denied to these; and the natives practice no sort of agriculture. They inhabit therefore the coasts; their only vegetable food is the scanty produce of the woods; but their principal subsistence is drawn from fish, shell-fish, and the animals they catch in the woods. There is a race of hogs on the island, one of which affords them an occasional banquet; but they eat likewise lizards, guanos, rats, snakes, and whatever else they can lay their hands upon. This wretched people in stature seldom exceed five feet; their limbs are disproportionally slender and ill formed, with high shoulders and large heads; their aspect is uncouth, and their countenances exhibit the extreme of wretchedness, displaying a horrid mixture of famine and ferocity.

This is under a tropical sun. But in a northern region the effects of similar causes are very similar. The Ostiaks are the Tartar tribes inhabiting the regions watered by the Obi. They subsist very much by fishing, though a portion of their food is the produce of the chase. Of their frame of body Pallas says, "of the greater number the height is moderate, rather below the middle stature. They are not strong; the leg is particularly thin and with little calf (*effilee*). Their figure is in general disagreeable; the complexion pale, without any characteristic trait."

Of the savages of Van Diemen's Land, it is said by Peron that they have all of them, though well made in other respects the leg and fore-arms thin and feeble, and the belly swelled. These savages have less strength than Europeans. Their chief sustenance is flesh and fish.

The same writer observes that this emaciation of the limbs of the savages of New Holland was observed by Labillardiere, Cook, and Collins. They have scarce any fruits; the kangaroo and one other species (I believe an oppossum) are the only animals of the country, and these are scarce; therefore they live much on fish, which from their emigration often fails. In consequence, in the interior, they feed on frogs, lizards, serpents, the larva of insects and caterpillars, and even (as at New Caledonia) upon ants.

A similar defect of conformation has been observed in the miserable tribes upon the coast of Tierra del Fuego. They fish much, and have a very scanty supply of vegetables, though they certainly do not go without them. "Their shoulders and

their chest," says Forster, "are large and bony; the rest of their body so thin and slender, that on looking at the different parts separately, we could not persuade ourselves that they belonged to the same individuals."*

The country which these wretched Pesserais inhabit is wholly uncultivated, and produces spontaneously very few esculent vegetables. Captain Cook observed some berry-bearing plants and scurvy grass. Perhaps the interior parts (of which nothing is known) may furnish more; but however that may be, the whole is doubtless extremely scanty. But of birds and animals which gain their food from the ocean, there is the greatest possible abundance. Some of the islands are absolutely covered by these animals, which may be killed in any numbers with the greatest ease.

Now it is indisputable that all animals, which find an abundant supply of food suited to their respective natures, increase in numbers. If, then, animals such as these were proper food for man, these islanders would be rioting in abundance and luxury, and we should find a great population. But instead of this they are very few in number, and, as Captain Cook says, "a little, ugly, half-starved, beardless race." We may safely conclude, then, that both the deformity and stupidity of this race is due to their miserable diet, and that the numbers of men are limited, not by the supply of animal, but by that of vegetable matter.

Let us now compare these miserable races with the natives of Otaheite—a people who, though they use both flesh and fish in moderate quantities, draw their principal subsistence from the soil—practicing agriculture in no mean degree of perfection, and that when they possessed no iron instrument, and without the aid of domesticated animals. Of all the food of these people, it has been said that at least four fifths was vegetable, and a large portion of that was unchanged by culinary preparation. Dr. Forster gives the following description of the bodily organization of the better sort of these islanders: "The features of

* Forster's Observations. The same writer says, "we found them to be a short, squat race with large heads; their color yellowish brown, the features harsh, the face broad, the cheek bones high and prominent, the nose flat, the nostrils and mouth large, and the whole countenance without meaning. All the upper part of the body is stout; the shoulders and chest broad; the belly strait, but not prominent. The feet are by no means proportioned to the other parts; for the thighs are lean, the legs bent, the knees large, and the toes turned inward. They seem to be good-natured, friendly, and harmless, but remarkably stupid. —*Forster*, *p.* 250.

the face are generally regular, soft, and beautiful; the nose something broad below; the chin is overspread and darkened by a fine beard. The women have an open, cheerful countenance, a full bright and sparkling eye; the face more round than oval; the features arranged with uncommon symmetry, and heightened and improved by a smile which beggars all description. The rest of the body above the waist is well proportioned, included in the most beautiful soft outline, and sometimes extremely feminine.

"The common people," he says, "are likewise in general well built and proportioned, but more active, and with limbs and joints delicately shaped. The arms, hands, and fingers of some are so exquisitely delicate and beautiful, that they would do honor to a Venus de Medicis."

The inhabitants of the Marquesas are acknowledged, by the concurrent testimony of all voyagers, to be a still more beautiful race. And it may be said in general of the inhabitants of the other Society Islands, the Friendly Islands, Tanna, New Caledonia, the Sandwich Islands, in all of which the natives subsist chiefly upon vegetables, that they have a bodily organization of the highest degree of perfection. The natives of some of the New Hebrides appear to be the strongest exceptions to the beauty of this race. The natives of Mallicollo are active and intelligent; but both Cook and Forster describe them as ugly, having faces like apes. Of their manners we know little. They practice agriculture. But they probably depend much upon their bow and arrows for subsistence, since every man had one, and they were very unwilling to part with one. Bougainville says that the natives of the Isle of Lepers (one of the New Hebrides) are short, ugly, and ill-proportioned. I know nothing of their habits. It may not be disagreeable to the reader, if I here introduce an extract from a still more recent voyager, though it only goes to confirm the observations already made.

"The Washington Islands do not appear to differ essentially in the natural productions of the country from the rest of the Marquesas, or from the Friendly and Society Islands. The bread-tree (arto carpus incisa), the fruit of which, according to what Forster says, is here larger and finer flavored than any where else, cocoa-nuts, bananas, Indiankole, arum esculentum, yams, dioscorea alata, and batatas, convolvulus batatas are the principal articles of food among the vegetable kingdom; sugar canes are also in abundance, but no attention is paid to cultivating them. The Otaheitan apple, spondias, which the above-named celebrated naturalist (Forster) did not find at the Mar-

quesas, I found at Nukahiwa, but it was somewhat scarce. Besides the above common objects of food, there are a number of other fruits and roots, which the inhabitants eat in times of scarcity.

"Judging from the accounts of all navigators who have visited the Friendly and Society Isles, I am inclined to think that the people of the Marquesas and Washington Islands excel in beauty and grandeur of form, in regularity of features and of color, all the other South-Sea islanders. The men are almost all tall, robust, and well made. Few were so fat and unwieldy as the Otaheitans, none so lean and meagre as the people of Easter Island. We did not see a single cripple or deformed person, but such general beauty and regularity of form that it greatly excited our astonishment. Many of them might very well have been placed by the side of the most celebrated chef-d'œuvres of antiquity, and they would have lost nothing by the comparison.

"A certain Mau-ka-u, or Mufau Taputakava, particularly attracted our attention from his extraordinary height, the vast strength of his body, and the admirable proportion of his limbs and muscles. He was now twenty years old, and was six feet two inches high, Paris measure;* and Counselor Tilesius, who unites the eye of a connoisseur and an artist, said he never saw any one so perfectly proportioned. He took the trouble of measuring every part of this man with the utmost exactness, and after our return to Europe imparted his observations to Counselor Blumenbach, of Gottingen, who has studied so assiduously the natural history of man. This latter compared the proportions with the Apollo of Belvidere, and found that those of that masterpiece of the finest ages of Grecian art, in which is combined every possible integer of manly beauty, corresponded exactly with our Mufau, an inhabitant of the island of Nukahiwa.

"I trust that this subject will be thought sufficiently interesting to excuse my giving the measurements of Mufau, as taken by Counselor Tilesius, and detailed in Voigt's Magazine of Natural History."† These proportions will be found in the note below.

* A French foot measures thirteen inches, English measure.

† Height, six feet two inches, Paris measure.
Breadth between the shoulders, nineteen inches two lines.
In the periphery, forty inches.
Breadth across the breast, fifteen inches.
Length of the arms from the point of the shoulder to the end of the longest finger, twenty-two inches four lines.

The truth of these inferences will be still more evident from comparing tribes living nearly in the same climate, and with no other difference of habit than a more abundant use of vegetables. We may select for this purpose the New Zealanders and New Hollanders. Both of these nations are destitute of domestic animals; both draw a large portion of their subsistence from the sea; and both live in a climate sufficiently mild, and nearly equally removed from the equator. But the New Zealander cultivates the soil, from which he draws perhaps one half of his subsistence. The New Hollander uses no vegetables except what he picks up accidentally, the spontaneous produce of the earth. "A few berries, the yam and fern root, the flowers of the different banksias, and at times some honey make up the whole vegetable catalogue."

The whole quantity is, of course, very small. The consequence is, the New Zealander enjoys a perfect organization; but the New Hollander is defective. "Their size," says Dr. Forster of the former, "is generally tall, their body strong and formed for fatigue, their limbs proportioned and well knit." Of the latter Collins testifies, that "in general, indeed almost universally, the limbs of these people were small; of most of them the arms, legs, and thighs were very thin."

Beauty of features appears to depend upon still nicer circumstances. Many races which are perfectly vigorous are very

Length of the head from the skull to the chin, ten inches.

Circumference of the head, measured round the forehead, and just above the ears, twenty-three inches and a half.

Circumference of the breast, forty-two inches.

Periphery of the lower belly about the spleen, thirty-two inches.

Periphery of the great bason, round the hips, forty-two inches.

Periphery of the upper part of the thigh, twenty-five inches.

Periphery of the calf of the leg, seventeen inches and a half.

Periphery of the ankle an inch above the foot, where it is smallest, ten inches.

Length of the foot, twelve inches and a half.

Greatest breadth of the foot, five inches and a half.

Circumference of the upper part of the arm, thirteen inches and a half.

Circumference of the arm above the elbow, thirteen inches and a quarter.

Circumference of the hand, eleven inches and a quarter.

Length of the hand, nine inches.

Circumference of the neck, sixteen inches.

Length from the skull to the navel, thirty-one inches and a half.

Length from the navel to the division of the thighs, ten inches and a half.

Length from the division of the thighs to the sole of the foot, thirty eight inches —*Langsdorf's Travels, p.* 106.

hard favored; but it can hardly be doubted that all are beautiful in their own estimation. But the form of features which accompanies the most perfect races of mankind must be reckoned the proper standard of beauty; and where great deviations from this standard are universal, we must suspect the agency of some general cause.

The Calmucks and the Circassians are not remote from each other, but wonderfully different in their form and physiognomy. The portrait of the former is thus drawn by Dr. Clarke: "Nothing is more hideous than a Calmuck. High, prominent, and broad cheek bones, very little eyes widely separated from each other, a flat and broad nose, coarse greasy jet black hair, scarcely any eyebrows, and enormous prominent ears compose no very inviting countenance." Of the women he says: "It was difficult to distinguish the sex, so horrible and inhuman was their appearance."

Of the Circassians we have from the pen of the same writer the following report: "The beauty of features and form for which the Circassians have been so long celebrated, is certainly prevalent among them. Their noses are aquiline, their eyebrows arched and regular, their mouths small, their teeth remarkably white, and their ears not so large nor so prominent as among the Tartars; although from wearing the head always shaven they appear to disadvantage, according to our European notions. They are well shaped and very active, being generally of the middle sizes, seldom exceeding five feet eight or nine inches. Their women are the most beautiful perhaps in the world, of enchanting perfection of countenance, and very delicate features. Those whom we saw, the accidental captives of war, were remarkably handsome. The most chosen works of the best painters, representing a Hector or a Helen, do not display greater beauty than we beheld even in the prison of Ekaterinadara, where wounded Circassians, male and female, loaded with fetters, and huddled together, were pining in sickness and sorrow."

Few will hesitate to pronounce that this ugliness of the Calmucks is the natural consequence of their diet. The horse is to the Calmuck what the rein-deer is to the Laplander, his slave in life, and his food after death. But besides horse flesh, which he often eats raw, the Calmuck devours indiscriminately every animal he can kill. "Near the entrance of the tent," says Dr. Clarke, "hung a quantity of horse flesh, with the limbs of dogs, cats, marmots, rats, etc., drying in the sun, and quite black." And of the grossness of their manners we have the following

picture: "Just before entering the town, a young Calmuck woman passed us astride on horseback, laden with raw horse flesh, hanging like carrion before her on each side. She was grinning archly at the treasure she had obtained; this we afterward found to be really carrion. A dead horse lying in the ditch surrounding the town on the land side had attracted about thirteen dogs, whom we found greedily devouring what remained, the Calmuck having contested the prize with them just before, and helped herself to as much of the mangled carcass as she could carry away."

Such are pastoral manners, naked and undisguised by the veil of artificial refinement; and such their consequences. Of the Circassians we know little, except that they subsist chiefly by agriculture. Traveling through their territory is thought to be so dangerous, that it has hardly been attempted. A slight view that Dr. Clarke obtained of a part of it showed "a country cultivated like a garden." Probably some other local circumstances are peculiarly favorable. It is said that the teeth are remarkably white; a circumstance which indicates great purity both of the solid and the fluid matter which enters into their diet.

On the banks of the Missouri are a tribe of Indians called Ricaras. They cultivate the earth; raise corn, maize, and other produce, in quantities sufficient both for their own consumption and for sale and exchange with their neighbors. This tribe is distinguished for the beauty of their persons; the men are tall and well proportioned, the women handsome and lively. The following trait of their character sufficiently marks their intellectual endowments: "On our side we were equally gratified at discovering that these Ricaras made use of no spirituous liquors of any kind, the example of the traders who bring it to them so far from tempting having in fact disgusted them. Supposing that it was as agreeable to them as to the other Indians, we had at first offered them whiskey, but they refused it with this sensible remark, that they were surprised that their father should present to them a liquor which would make them fools."

The Laplanders are of dwarfish stature. The Greenlanders are also very short, generally under five feet. It may be thought that this is the effect of the rigor of their polar cold. But we find interspersed among them, and inhabiting the very same country, numerous families of industrious Finns, who cultivate the earth, and subsist chiefly on its produce; and this race, though they remain for centuries in the same country, do not appear to be in the least smaller than the Swedes and Norwe-

gians. We must acknowledge, then, that the mode of life has infinitely more effect upon the human form than climate.

We need not, however, travel to the other side of the globe for proofs of the salubrity of vegetable food, or to show that the human body will upon no other support arrive at its full stature, attain its just proportion, and be marked by health, strength, and beauty. The great body of our English peasantry, and even vast multitudes of the inhabitants of the metropolis, subsist almost wholly on vegetables, and are perfectly well nourished. The peasantry of Lancashire and Cheshire, who live principally on potatoes and butter-milk, are celebrated as the handsomest race in England. Two or three millions of our fellow-subjects in Ireland are supported the same way. On this subject it is said by Dr. Adam Smith: "The chairmen, porters, and coal heavers in London, and those unfortunate women who live by prostitution, the strongest men, and the most beautiful women perhaps in the British dominions, are said to be, the greater part of them, from the lower rank of people in Ireland, who are generally fed with this root—the potatoe. No food can afford a more decisive proof of its nourishing quality, or of its being peculiarly suitable to the health of the human constitution."

A notion has been very prevalent, even among philosophical writers, that the food should vary with the climate. They observe that between the tropics the natives live principally upon fruits, seeds, and roots. Though animal food is not avoided, except among some particular classes, yet men are in these climates exceedingly sparing of its use. In the temperate climates the more general habit is to use a mixture of animal and vegetable food, which is held to be in these regions the most wholesome. In the high northern latitudes animals are produced in plenty, but vegetable productions, fit for the food of man, are scanty; and in these countries, therefore, men are confined principally to animal food. They go even so far as to say, that nature herself in these regions dictates the use of the flesh of animals, for that men must of necessity use this sort of food, or perish from hunger. If this plea be well founded it must be allowed to be unanswerable.

The above is certainly a faithful account of the present habits of mankind in general; but it appears to be the result rather of an imperfect state of civilization, than springing either from wisdom or necessity. In the tropical climates animals are, or might be produced more abundantly than in the polar regions, the earth being more fertile. But men attach themselves more

to agriculture, as in these countries the ill consequences of using much animal food are more evident, and therefore universally known and acknowledged. In the temperate climates the existing population could not be supported by pasturage alone, and therefore the body of the people of necessity used a mixed diet, wholly ignorant, for the most part, of its effects upon the body. In the high northern latitudes agriculture is hardly known, and a scanty population is supported by fishing, the chase, or pasturage, with a scanty supply of vegetable productions. But they live so, not because it is most suitable to their situations, but from their ignorance of more useful arts.

There was a time, probably, when in every part of the globe men lived nearly as they now live in these remote regions. I cannot, therefore, persuade myself that even in those climates it is necessary for man to support his own life by the destruction of other animated beings. We find no part of the globe habitable by man which is not stocked with herbivorous animals. The Pesserais of Cape Horn is clothed with the skin of the guanicoe (a species of deer). At the northern extremity of the same continent, the buffalo, the moose-deer (or elk), the musk ox, common deer, squirrels, hares, rabbits, mice, and other animals, which draw their nutriment from the earth, are found in abundance as high as the 71st degree of north latitude, besides a plentiful stock of bears, wolves, foxes, wolverines, and other carnivorous animals, which are sustained indirectly from the same source. Where the support of every species of animals is so abundant, it is inconceivable that the earth should deny to man alone a salubrious and innocent repast.

In these regions the transition from their long and gloomy winter and summer heat is immediate, and nature compensates for the short duration of the season of vegetation by its great rapidity and luxuriance. The heat is at this time as great as in our own climate at the same season. The country becomes covered with verdure, and teems with life. Near the North Cape, the *Ultima Thule* of Europe, rich pastures that want no cultivation, and beautiful natural meadows are to be seen. And even at the very extremity, which forms the cape itself, in the 71st degree of north latitude, were found growing some plants of angelica, a salubrious vegetable. The arctic regions are not even without their delicacies, unknown to other countries. The berry-bearing plants are particularly abundant. The *rubus chamæmorns*, a large kind of raspberry, is plentiful; and the *rubus arcticus*, a plant of the same genus, bears a fruit superior in fragrance and flavor to the strawberry and rasp-

berry, and to all other fruit of the same kind, even of the choicest productions of Italy. A small plateful of this fruit is the most exquisite of perfumes.

These considerations show sufficiently how futile is this plea of necessity. On the contrary, they render it sufficiently evident that, in whatever part of the habitable globe man can exist, there vegetable nutriment may either be found or be raised; that in no situation fit for the habitation of man is the earth devoid of prolific power sufficient to satisfy his wants, and even to gratify his palate.

This plea of necessity is contradicted even by experience; for, from the latest accounts which have been published, agriculture has at length penetrated these remote regions. The potato cultivation has been several years quite general at Lyngen, in Lapland, situated under the 70th degree of north latitude, and the same is called a *blessed corn country*. Agriculture is practiced likewise at Alten; this is the most northern agriculture of the world.

As men, even in the rudest state of society, display a higher degree of intellectual power than other animals, which is applied both to the gaining of food and every other object conducive to his well being, it is argued that this makes so essential a difference between men and other animals, that we cannot apply to man the reasoning that is acknowledged to be conclusive with regard to others. In animals guided by instinct, it is true that we see a very exact adaptation of their form and powers to the objects of their desires and appetites. We may, therefore, in these commonly infer from their conformation the mode of life to which they are fitted. But superior powers having been given to man by the medium of a higher order of intellect, we must give him a wider field of action, nor suppose that nothing can be suited to his nature which happens not to be within the reach of his unaided physical powers.

I would allow so much weight to this argument as never to permit theoretical reasoning to weigh for a moment against the results of experience. The intellect of man is as much a part of his proper nature as his bodily frame, given him surely to promote his well being. But I suspect that its power over the organization must necessarily be very limited. For a well-organized frame of body must be thought to be a possession anterior to all other improvements, and the instrument which the intellect itself makes use of to acquire the materials of all other improvements. In a certain degree it appears essential to the intellect itself, and connatural with it. It follows, then,

that a just bodily organization is neither the object nor the consequence of intellectual culture. It is rather the gift of nature, which is saying, nearly, that it results from natural habits. In fact, it has ever been more the effect of some happy combination of fortuitous circumstances than of design or wisdom.

On the place which man holds in the scale of animated beings, all naturalists are agreed. There are those, indeed, who deem it a sort of degradation to the human species to class mankind with monkeys, apes, and baboons, and to show the analogy of his structure with that of the orang-outang. But misplaced pride and an ignorant misapprehension cannot alter the nature of things. Our very language acknowledges the reality of the analogy between the races; *monkey* can mean nothing but *mannikin*, or little man. In insisting on this analogy we limit ourselves to physical facts which are undeniable. But granting it to be perfectly correct, it does not follow that man in consequence approaches more nearly to the nature of the monkey than he does to that of the otter, except in the single circumstance of the choice of food. The monkey is not in any respect superior to the otter, or the fox, or the beaver, or any other animal. In his nobler part, his rational soul, man is distinguished from the whole tribe of animals by a boundary which cannot be passed. It is only when man divests himself of his reason, and debases himself by brutal habits, that he renounces his just rank among created beings, and sinks himself below the level of the beasts.

If the question were proposed whether man were by nature intended to walk erect, or, like the animals, upon all-fours, from the mode in which the head is united to the spine, from the narrowness of the ischiadic bones, from the structure and position of the socket of the thigh, from the whole compages of the feet, I should conclude with confidence that the erect position was the most natural to the human species. Looking upon man merely as an animal, I should likewise conclude, from the structure of the hand, the form of the mouth, the articulation of the under jaw, the teeth, the stomach, the cæcum, the colon, and the length of the intestines; from all these circumstances, I say, I should conclude, that vegetable food is that which is most natural to man.* Many, indeed, assert that man

* I have argued at some length in my "Reports on Cancer," that man is in his structure herbivorous. This appears to me to be a question of extreme importance, and I have therefore thought it might be useful to give on this subject the sentiments of a writer who has made comparative anatomy a peculiar object of his study. The following quotation is from the article "Man," in Dr. Rees's Encyclopedia, written by Mr.

has a structure between that of the herbivorous and carnivorous tribes. Those who argue thus, acknowledge that we ought to

Lawrence, assistant-surgeon of St. Bartholemew's Hospital. "The present seems a very proper place for considering a question that is frequently agitated on this subject, whether man approaches most nearly to the carnivorous or herbivorous animals in his structure? We naturally expect to find in the figure and construction of the teeth a relation to the kind of food which an animal subsists on. The carnivorous have very long and pointed cuspidati or canine teeth, which are employed as weapons of offence and defence, and are very serviceable in seizing and lacerating their prey; these are three or four times as long as the other teeth in some animals, as the lion, tiger, etc., and constitute very formidable weapons. The grinding teeth have their bases elevated into pointed prominences, and those of the lower shut within those of the upper jaw. In the herbivorous animals these terrible canine teeth are not found, and the grinders have broad surfaces opposed in a vertical line to each other in the two jaws; enamel is generally intermixed with the bone of the tooth in the latter, and thus produces ridges on the grinding surface, by which their operation on the food is increased; in the former it is confined altogether to the surface. For further details on this subject see MAMMALIA. The articulation of the lower jaw differs very remarkably in the two kinds of animals: in the carnivorous it can only move forward and backward; in the herbivorous it has, moreover, motion from side to side. Thus, we observe in the flesh eaters, teeth calculated only for tearing, and subservient in part, at least, to the procuring of food as well as to purposes of defence, and an articulation of the lower jaw that precludes all lateral motion; in those which live on vegetables the form of the teeth and nature of the joint are calculated for the lateral or grinding motion; the former swallow the food in masses, while in the latter it undergoes considerable comminution before it is swallowed. The teeth of man have not the slightest resemblance to those of the carnivorous animals, except that their enamel is confined to the external surface; he possesses, indeed, teeth called canine, but they do not exceed the level of the others, and are obviously unsuited to the purposes which the corresponding teeth execute in carnivorous animals. These organs, in short, very closely resemble the teeth of monkeys, except that the canine are much longer and stronger in the latter animals. In the freedom of lateral motion, the lower jaw of the human subject resembles that of herbivorous animals. In the form of the stomach again, and, indeed, in the structure of the whole alimentary canal, man comes much nearer to the monkey than to any other animal. The length and divisions of the intestinal tube are very different, according to the kind of food employed. In the proper carnivorous animals, the canal is very short, and the large intestine is cylindrical; in the herbivora, the former is very long, and there is either a complicated stomach or a very large cæcum and a sacculated colon. In comparing the length of the intestines to that of the body in man, and in other animals, a difficulty arises on account of the legs, which are included in the former and left out in the latter; hence the comparative length of the intestinal tube is stated at less than it ought to be in man. If allowance be made for this circumstance, man will be placed on nearly the same line with the monkey race, and will be removed to a considerable distance from the proper carnivora. Soemmerring states, that the intestinal canal of man varies from three to eight times the length of the body. (De Corp. Hum. Tab. t. 6, p. 200.) (See note, p. 249.)

be guided by his form and structure, in considering the species of food he ought to use.

Man, says the flesh eater, is destined to be guided by reason; the animals by instinct: and this is offered as a sufficient plea for his doing whatever he has the power to do. Probably, however, reason and instinct are essentially the same; they are but different modes of attaining the same end: nor can the former be more wisely employed than in rendering our habits conformable to the dictates of the latter. This was the sentiment of our moral poet, who has said,

> "See him from nature rising slow to art?
> To copy Instinct then was Reason's part."
> *Essay on Man.*

Man, it is true, is or ought to be, guided by reason. But no guide can be more fallacious than the individual reason of the beings, which are, as it were, the elementary particles of human society. Passion, whim, fashion, imitation, or the fleeting sensations of the moment, are incentives to action: above all, custom has erected a despotism over individual will, against the tyranny of which reason protests in vain. How little reason has been consulted in the establishment of the common habits of life we may judge from considering, that the habits of modern life are essentially the same as have been transmitted from the rude beginnings of civilized society. The manner of living of a European philosopher, absorbed in study and meditation, and of an Indian savage, destitute of reflection and of foresight, are essentially the same. In what does the banquet of an English prince differ from the feast of a chieftain of Otaheite, unless it be in the costliness of the utensils, or the refinements of the cookery? Fish, flesh, and poultry, in each form the favorite materials of the repast, which is finished by the swallowing of potions of an intoxicating liquor. What share reason has had in the institution of these customs, I must leave to their advocates to explain.

To form clear conceptions on this subject, let us take a survey—it must of necessity be very cursory—of the natural progress of human manners. We would begin with the state of nature: but such a state can be found nowhere among the inhabitants of earth. We cannot, however, but suppose that there has been a primeval state of man, and it is allowable therefore to conceive and depict such a state.

The earth, while left to its natural fertility, as is observed by the eloquent and penetrating Rousseau, was covered with immense forests, whose trees were never mutilated by the axe,

but presented on every side both sustenance and shelter for every species of animals. Men would among these wander up and down, and live like them upon the substances to which his instinct would direct him, and which his physical powers would enable him to collect. These would probably be in harmony, as we find them in all other animals.

As man is devoid of all natural clothing, we must suppose him placed in the tropical regions; here the air is always of a genial warmth; the fertility of the earth is abundant; and it is confined to no particular season; and the shade of the trees would protect him from the oppression of a vertical sun. The same trees which shelter, would yield the principal part of his sustenance. Thus the fruit of trees would appear to be the most natural species of diet. Rousseau says it is the most abundant; as he has convinced himself from having compared the produce of two pieces of land of equal area and quality, the one sown with wheat, and the other planted with chesnut trees.*

But man would not confine himself to fruits, or the produce of trees; he is formed equally for climbing, and for walking on the ground; his eye may be directed with equal ease to objects above him, and on the earth. His arm has a corresponding latitude of motion.

Man must have been fed previous to the invention of any art, even the simple one of making a bow and arrows. He could not then have lived by prey, since all the animals excel him in swiftness. There is no antipathy between man and other animals, which indicates that nature has intended them for acts of mutual hostility. Numerous observations of travelers and voyagers have proved, that in uninhabited islands, or in countries where animals are not disturbed or hunted, they betray no fear of men: the birds will suffer themselves to be taken by the hand; the foxes will approach him like a dog. These are no feeble indications, that nature intended him to live in peace with the other tribes of animals.†

Least of all would instinct prompt him to use the dead body of an animal for food. The sight of it would rather excite hor-

* The bread-fruit tree appears to support the most abundant population. Doctor Forster, comparing the parts of Otaheite which are best cultivated, with those of France under the same circumstances, calculated the population, about the year 1771, to be to that year of the latter, nearly as 17 to 1.—*Forster's Observations*, 220.

† On this subject see White's Natural History of Selborne, vol. i. p. 206, 4to. Darwin's Zoonomia; Chapter on Instinct; or Homes's Sketches on Man; Preliminary Discourse.

ror, compassion, and aversion. In a warm climate, putrefaction succeeding immediately to dissolution, dead flesh must speedily diffuse an offensive odor, and occasion insuperable loathing and disgust.

Living wholly upon vegetables without culinary preparation, our man of nature could never experience thirst. Even intense heat does not appear to excite thirst, unless it be upon bodies injured by a depraved and unnatural diet. He would have no call therefore to the use of liquids, further than as they are contained in the juices of the fruits and esculent plants which he would eat. Drinking would be needless; it is an action which does not appear suited to the natural organization of man after the infant state.

Finally, it is highly probable that man under these circumstances, considered as a mere animal, would arrive at a high degree of physical perfection; that he would have a body duly formed, and a robust frame; great vigor, great activity, and uninterrupted health. I cannot think, however, that this state is comparable to the benefits of civilization; such an opinion is an extravagance which can be maintained only from the love of paradox and singularity. This fancied state of nature excludes the very notion of morality, and admits not of intellectual improvement, principles which form the most proud distinction of the human race.

Though this picture is in a good measure the creature of the imagination, there having been found no tribes of men who depend for their subsistence solely upon their physical powers, yet solitary examples have not been unfrequent in which individuals have really subsisted by no other means. Such are the wild men, the *homines sylvestres* of Linnæus, who have been found in the forests, even in Europe. In intellect these did not appear to be superior to the animals, their associates; which must have resulted from having been secluded from all converse with their species. But they were in perfect health, and possessed incredible activity. They could have used nothing but fresh vegetable food; this was the sort of food of which they were the fondest; the want of it seems to have been the principal object of their regret, and the motive for attempting to return to their accustomed mode of life, as they constantly did.

If men ever lived nearly in the manner I have described, it is obvious that this condition could not continue. Man is by nature gregarious; and has naturally both the will and the power of communicating his ideas by the inflections of his voice.

I have heard a child of three months old call for the breast by a distinct and peculiar note. Knowledge must therefore spring up and increase. Arts would be invented, and man would call his ingenuity in aid of his physical force. The pride of reason and the wantonness of power would extend his dominion, engender artificial wants, and make him the enemy and the tyrant of his more feeble and less crafty companions. No society of men has been observed in which the procuring and preparation of food has not been a work of some degree of skill and ingenuity. The savage, the pastoral, and the agricultural states comprehend the principal forms of society under which men are found to live.

The energies of the savage are almost wholly absorbed in the search of food; the chase, and such vegetables as grow spontaneously being his sole dependence. The materials which support life being very scanty, population must be proportionally limited; and war seems necessary to secure to him the undivided possession of his precarious means of subsistence. His mind is congenial to his situation; the hostile and furious passions have uncontrolled possession of his soul; he delights in the infliction of wounds and death; he is a stranger to remorse, to compassion, and to sympathy; he knows not the charms of benevolence; even love in his obdurate bosom is but a transient spark. This state is, by those who have not very definite ideas of things, confounded with the imaginary state of nature; and some have concluded, from the vices of the savage state, that man is naturally cruel, ferocious, and malevolent. But this state is totally distinct from what must be supposed to be the state of nature. It is one in which instinct is the most completely annihilated, and reason is the most feeble. The qualities of the savage are the direct result of situation and mode of life. If the proper nature of man is to be improvable without limit, by the force of intellect, the condition of the savage, so far from being natural, is that which recedes the farthest from the state of nature.

The period of individual existence appears in this state to be short. So many are cut off by violence (for their wars are indiscriminate massacres, in which neither age nor sex are spared), that it is impossible to conjecture what proportion would reach old age. But we are assured by a faithful observer of the northern tribes, that among them a woman is old and wrinkled at thirty.

By the simple arts of fencing in the land, and preserving a portion of the natural herbage for winter fodder, man became

enabled to domesticate some tribes of animals. By a regular supply of food, the number of these animals is greatly increased, so that they form a portion of the artificial population of cultivated countries. Over these tribes, he has assumed despotic power; he uses their labor, and applies both their milk and their flesh to his own sustenance. Man then became a shepherd, and by this transition he very much improved his condition. Food being more abundant, population increased; and from an increased sense of security, manners would become less ferocious. Still civilization would be very imperfect. All the hordes of barbarians, who have desolated kingdoms and subverted empires, were pastoral tribes, drawing their chief subsistence from their flocks and herds.

Nor is it certain that by giving life to these new tribes of animals, man has conferred upon them any real blessing. One fact alone may make us hesitate on this subject. It appears impossible to keep the domestic animals in a state of subjection without mutilating the males, excepting a few who are preserved for the purpose of propagation. It may fairly be inquired whether this shocking outrage on the common rights of nature, this cutting asunder of the link which connects the individual with his common species, does not more than counterbalance all the pleasures which any being may be supposed to derive from the mere enjoyment of animal life.

The cultivation of the earth, and the direct application of its various productions to human subsistence, seems to be the limit of improvement in the arts essential to the support of life. By the exercise of this beneficial art, myriads of human beings are called into life who could otherwise have never existed. By its introduction, a great revolution was commenced in the relations of neighboring communities. The cultivator being directly interested in the preservation of public tranquillity, and the causes which fostered hostility and rancor being removed, nations became disposed to suspend their animosities, and rather to contribute to the promotion of their mutual welfare, which became to all a common source of prosperity. Internal order became, too, as necessary as external security. Thus, peace and the empire of the law would succeed to strife, violence, and anarchy. It seems no visionary or romantic speculation to conjecture that if all mankind confined themselves for their support to the productions supplied by the culture of the earth, war, with its attendant misery and horrors, might cease to be one of the scourges of the human race.

Nor are the effects of agriculture less favorable to private

happiness than to public prosperity. Probably there is not one of the real wants of life which may not be supplied directly from the soil: food, clothing, light, heat, the materials of houses, and the instruments needful for their construction. By its means, not only is population increased to an indefinite extent, but the happiness of each individual is greatly augmented. It multiplies enjoyments by presenting to the organs an infinite variety of new and agreeable impressions, which are of themselves, to an unvitiated palate, abundantly sufficient for the gratifications of sense. Indeed, every taste, that is truly exquisite, is afforded by the vegetable kingdom. In a wretched state of perversion must be the digesting organs and palate of the man who has lost his relish for these pure, simple, and innocent delights. Agriculture disseminates man over the surface of the soil; it diffuses health, prosperity, joy, society, benevolence; from it spring all the charities of life, and it makes a common family of the whole human race. If those who confine themselves to its precious gifts cannot, without other precautions, escape diseases, these are at least more mild in their form, and more slow in their progress; longevity is promoted, the final stroke is received with tranquillity, and death is disarmed of its terrors.

The primeval command of the Deity to our first parents was, "Subdue the earth." The labors of agriculture fulfill this first command, and men, in their providing for their own necessities, pay the homage of obedience to the divine will. The reflecting mind, upon contemplating the strict connection between the exercise of this art, and the well-being of human society, can hardly abstain from the inquiry, whether man can perform any act of religion more grateful to the Author of his existence.

We find, by looking on things as they really are, that in almost all societies of men, which have attained any tolerable degree of civilization, in a certain degree the arts of all the different stages of society continue to be practiced. Men hunt and fish, and live partly upon the produce, be it of their pleasure or their toil. They keep domestic animals, and they till the earth. Thus, in fact, the manners of savage, of pastoral, and agricultural life are blended together. And in the progress of the arts it has so happened that the things which, in a rude state of society, were the most plentiful, become the most scanty; and, inversely, things which could hardly be procured in the first stages of society became gradually highly abundant, and of little relative value.

Thus, in the rude beginnings of human society, the flesh of

animals or fish is obtained with infinitely greater ease than the produce of the earth. Savages, and even early colonists, kill animals for their furs or their hides, their flesh being often left to perish, as of no value; and even in advanced stages of civilization, the price of meat was either less or equal to that of bread. But this proportion becomes gradually reversed.

By cultivation, vegetable productions become so abundant as to be brought within the reach of the mass of mankind, and cheaper than any of the other substances which are used as food. Indeed, according to all the present experience of mankind, in free countries, vegetable food increases with the demand caused by an increase of population, so that this increase is not the cause but the effect of increased population. All apprehensions of evil from an over-abundance of people, appear, in European countries at least, to be visionary. Death seems very rarely, even in the poorest class of the people, to be caused, in ordinary seasons, by a want of food. Excess, and the abuse of the gifts of Providence, is productive of much more evil. It is not the parsimony of Nature which is the prolific source of vice and misery, but the wastefulness and prodigality of men, and the abuses resulting from an excessive inequality in the distribution of wealth—a distribution which is as much a misfortune to those who are raised above the due level as those who are sunk below it. To use the energetic language of our sublime and virtuous poet, Milton—

> "If every just man, that now pines with want,
> Had but a moderate and beseeming share
> Of that which lewdly pampered luxury
> Now heaps upon some few with vast excess,
> Nature's full blessings would be well dispensed
> In unsuperfluous even proportion,
> And she no whit encumbered with her store.
> And then the Giver would be better thanked,
> His praise due paid; for swinish gluttony
> Ne'er looks to Heaven amidst his gorgeous feast,
> But with besotted base ingratitude
> Crams, and blasphemes his Feeder."

But to return to our argument. This relative dearness of animal food, compared to that of the most common vegetables, making its use a species of privilege confined to persons in easy circumstances, the silly vanity of distinguishing themselves from the hard-working classes has conspired with the gratifications of the palate to make animal food to be esteemed by such persons one of the real necessaries of life. It is so habitual to them, that the greater part of such persons think it impossible

to live without it, and any proposal of the kind appears in their eyes either a monstrous barbarity or a ridiculous absurdity. They are tormented with imaginary terrors, and they conceive it to be an experiment full of danger; though in every period of history it has been known that vegetables alone are sufficient for the support of life, and though the bulk of mankind live upon them at this hour. So perverted are the judgments of men; since, really (I speak it not in the spirit of ridicule or of asperity, but as a deduction from the most simple survey of the progress of human manners) the adherence to the use of animal food is no more than a persistence in the gross customs of savage life, and evinces an insensibility to the progress of reason, and the operation of intellectual improvement. This habit must be considered to be one of the numerous relics of that ancient barbarism which has overspread the face of the globe, and which still taints the manners of civilized nations.

Where reason has interfered, and has exercised any influence on the manners of men, its voice has always been raised in favor of simple diet. Some ancient legislators are said to have confined the diet of the people to the fruits of the earth; a report which is very credible by what we know of the institutions of Hindostan, and the remote antiquity to which they reach.

Many sects both in ancient and modern times have inculcated on their adherents the same abstinence as a duty of religion. The Romans, in the purer days of the republic, favored the same maxims: their Fannian and Licinian laws limited the allowance of animal food, while that of vegetable matter was unrestricted. But laws are forced to bend to the existing habits and prejudices of the people for whom they are made. A good man will reverence the laws of his country. But there is a law more sacred, to which he will make his own actions conform: the voice of the inward monitor, which informs him that he should act in all things of moment according to the dictates of right reason.

Can a practice be conformable to reason which stifles the best feelings of the human heart? By long habit and familiarity with scenes of blood, we have come to view them without emotion. But look at a young child who is told that the chicken which it has fed and played with is to be killed. Are not the tears it sheds, and the agonies it endures, the voice of nature itself crying within us and pleading the cause of humanity? We cannot hear even a fly assailed by a spider without compassion—without wishing to relieve its distress, and to re-

pel its enemy. The coldness of philosophical inquiry may perhaps lead us to doubt whether the sound it emits, which is no more than a vibration of its wings, is really an index of pain; and whether we ought not to sympathize as much with the hunger of the spider as with the pain of the fly. The emotion, however, is natural and unavoidable. To suffer from the sufferings of any other sentient beings, and to have the sensibility aroused by the expressions of suffering, is, among civilized men, an essential property of human nature; and as such, it ought surely to be a law to man—a guide of human conduct.

How closely the use of a temperate regimen is connected with morality and with intellectual excellence seems to have been perfectly understood by the masters of ancient wisdom. Plato has said that "no one is bad spontaneously; but that bad morals proceed from some depraved habit of body, or from neglected education." He must therefore have thought a proper regimen to be a fundamental part of a moral education. Indeed, he has expressly enumerated this among the other instruments of forming the human character: "Of much efficacy are the customs, either political or domestic, in which men are brought up, and the daily manner of life, either fortifying or corrupting the mind; for exposure to the air, simple aliments, gymnastic exercises, and the manners of associates have the greatest influence in disposing either to virtue or vice."

It is allowed that men should be guided by reason; no truth can be more evident. But let us well understand what is meant by the term. By reason we cannot surely mean that feeble glimmering of light which just enables the mass of mankind to grope through the gloomy paths of life, and to pass a few fretful years in a vain pursuit of happiness. The reason of individuals (if, indeed, it deserves the name) is commonly just sufficient to conduct them through the habitual occupations of the day; but the bulk of mankind are quite unable to comprehend the bearings of a complex argument, and still more to trace effects to their remote causes. Nor is this the case with the vulgar merely, for so limited is the human capacity, that the most exalted genius, and the deepest powers of investigation, have not been able to raise their possessors above the errors and prejudices of their age, on the subjects which have not been made the peculiar objects of their reflections.

Mankind have therefore had recourse to artificial aids to the feebleness of individual reason, as the guides of life, and the preservers of the social order; to the writings of sages; to maxims, proverbs, and apothegms which condense as it were

the experience of ages; to the institution of wholesome customs; the establishment of just laws; to the sanctions of religious truth.

There is then a superior and more exalted reason, which consists in the perception of truths founded in the constant relations of things, in obedience to the fixed and immutable laws of Nature. This is the reason which has informed the spirit of philosophers, of heroes and legislators, of those who have improved the arts of life, or extended the boundaries of knowledge. This reason we cannot but conceive to be a kind of emanation from the eternal fountain of truth. This the reason, the empire of which ought to be established on earth. The experience of the past gives no very favorable omens for the future; but genuine philanthrophy must prompt us to consider its promotion as the object the most deserving of our exertions, directly tending to diffuse genuine civilization, and all the blessings depending upon it.

CHAPTER VIII.

On the use of spirituous and fermented liquors.—Spices.—Man by nature not a drinking animal.

In the use of animal food, man having deviated from the simple aliment offered him by the hand of Nature, and which is the best suited to his organs of digestion, he has brought upon himself a premature decay, and much intermediate suffering which is connected with it. To this habit almost all nations that have emerged from a state of barbarism have united the use of some spirituous and fermented liquors. As the course of my inquiries has taken a range somewhat extensive, I have thought it right not wholly to overlook the effects of these liquors on the human body; but having little that is original to offer on the subject, it shall be comprised in as few words as possible.

The use of fermented liquors is, in some measure, a necessary concomitant and appendage to the use of animal food. Animal food, in a great number of persons, loads the stomach, causes some degree of oppression, fullness, and uneasiness, and if the measure of it be in excess, some nausea, and tendency

to sickness. Such persons say, meat is too heavy for their stomach. Fish is still more apt to nauseate. We find that the use of fermented liquors takes off these uneasy feelings. It is thought to assist the digestion. Probably, its real utility arises from the strong, and at the same time agreeable, impression it makes on the stomach, which counteracts the uneasiness arising from the solid part of our aliment. Thus the food sits lighter on the stomach, and digestion goes on more comfortably.

It is in vain to attempt to determine the question of the salubrity or insalubrity of these liquors from the evidence and pretended experience of those who use them. Very many persons have enjoyed improved health from the total abandonment of all fermented liquors, and confining themselves to water. These are, of course, enemies of fermented liquors, and preachers of temperance. But others, again, assert, with the same confidence, that they receive benefit from a moderate use of these liquors, and even that they cannot live without them. I do not see why these persons are not as worthy of credit as their opponents. They must be supposed to give a faithful account of their own feelings at least. This conflicting testimony, like so many others with regard to the operation of substances upon the human body, is an additional proof that, in such investigation, we must look beyond the primary effect of things, and can determine little or nothing from the agreeable or uneasy feelings which may immediately arise from them. For the ultimate effect (which it is of the most consequence to determine), we must have recourse to some more correct criterion.

Perhaps the oppugners of fermented liquors weaken their influence by pushing their hostility too far, and contradicting the common experience of mankind. They deny that such liquors give strength, and use some refined arguments to establish their doctrine. The bodily strength furnished by beer, Dr. Franklin said, can only be in proportion to the solid part of the barley dissolved in the water; and from this he argued, that a penny loaf would give more strength than a pint of beer. But men will not be so talked out of their feelings. Universal experience shows, undoubtedly, that fermented liquors, used in moderation, commonly augment for a time the muscular strength. And hence we are taught, that *stimulation causes temporary strength.*

In fact, food itself raises the muscular strength, in consequence of its application to the surface of the stomach; for we

feel stronger immediately after eating, and before the food is digested, or absorbed into the sanguiferous system. All the muscles of the body sympathize with this membrane.

Fermented liquors raise the strength by impressing the brain in a manner analogous to animal food. For, like animal food, they increase the color of the face, which is an index that they excite and stimulate all the small vessels of the brain. Mr. Strutt, in his View of Manners and Customs (cited by Dr. Beddoes), quotes a play of the time of Henry the Eighth or Elizabeth, in which a citizen declares he has sent his daughter in a morning as far as Pimlico, "to get a draught of ale to put a color into her cheeks." This increase of color passes for a sign of increased health.

But to estimate the effects of these substances, we must look at the whole of their properties. The first and most important of these properties is, that they diminish the appetite and impair the powers of digestion. Water drinkers are well known to have much keener appetites than the drinkers of beer. This is commonly used as a proof of the wholesomeness of water, but it really shows only the noxious power of beer. Low women of unprincipled habits give gin even to their infants, that they may eat less bread. It is clear, from these facts, that fermented liquors sap and undermine the very sources of life. All permanent health and strength must be derived from a sound stomach and perfect digestion of the food.

Fermented liquors have also a strong narcotic power. Though they do not cause sleep (at least with the same power and certainty as opium), they remarkably diminish the sensibility of the nervous system. Hence they destroy and diminish many uneasy feelings. They take off the uneasiness of hunger, the uneasiness of lassitude, and the uneasiness of cold. These are some of the greatest evils that the poor man suffers, and, in consequence, he flies to the use of spirits, heedless or ignorant of the ultimate consequence. To so great a degree is the sensibility of the body impaired by spirits, that a drunkard has been known to cut off his fingers in a fit of intoxication, without apparent suffering, and with no recollection of what had happened when the drunken fit was over.

Besides this great, and, as it were, violent diminution of sensibility, under the immediate impression of fermented liquors, there appears also to be a permanent diminution of sensibility, in persons habitually using them, which extends to all the organs. The spirit undergoes no change in the stomach, but is absorbed into the circulating mass; it is applied to the whole

body, and is finally eliminated by all the excretory organs. If therefore they are habitually used, the body is constantly under their influence in a greater or less degree. The well-known fact, that persons who abstain from fermented liquors have a much greater delicacy of taste than those of opposite habits, may be cited as a proof that the sensibility of the latter is radically impaired. What is true of the tongue and palate is true, probably, of the whole nervous system.

Observations on savages illustrates this fact more strongly. They have been often observed to have a much greater perfection of the senses, as of the eyesight and hearing, than Europeans usually possess. As the fact is sufficiently well known, it will be enough to cite a single observation in proof of it. A writer, mentioning a native of New Zealand, named Moyhanger, says of him, "It was worthy of remark how much his sight and hearing were superior to other persons on board the ship; the sound of a distant gun was distinctly heard, or a strange sail readily discernible by Moyhanger, when no other man could hear or perceive them." Now it certainly has never appeared that negroes, or savages of any sort, brought to Europe, and conforming to European manners, enjoy this or any other superiority over other persons. There is every reason to believe that there is no physical difference between the different tribes of mankind, except what is the result of different habits. As the tribe we are now considering used both flesh and fish in as great abundance as Europeans, the great superiority of the senses which the savage tribes enjoy cannot, with any probability, be attributed to any other cause than to their being unacquainted with the use of fermented liquors.

It is hardly necessary to add that as large quantities of fermented liquors are highly deleterious, producing a total loss of muscular power, and an abolition nearly complete of all sensation; as these symptoms are not unfrequently fatal, the suspicion appears very just, that the perpetual ingurgitation of such matters cannot be innocent, however moderate the quantity may be; and that all the pleasure or the comfort which persons derive from such habits are gained at the ultimate expense of their health, and the abbreviation of their lives.

It appears then that the advantages experienced from fermented liquors, and from animal food, are subject to the same limitations, and regulated by the same laws. There are many diseases of debility in which the radical strength of the constitution is unimpaired, and its powers adequate to the restoration of health. In such diseases the stimulus of animal food and of

fermented liquors may have no sensible injury, or even may produce great apparent advantages. But they must aggravate all habitual and constitutional diseases. The relief from pain or uneasiness which they procure is induced only by a species of stupefaction; and the strength that they give is from stimulation merely, and induces premature and permanent weakness. In all diseases tending to death, and in which therefore there must be a radical loss of power, this stimulation must do harm. It excites action, which must further impair the strength and accelerate the fatal issue of the disease.

This is a distinction which ought never for a single moment to be out of view. A want of attention to, or ignorance of the opposite effects of the same treatment in different states of the constitution, is what causes such diversity of opinion and inconsistent practices. A feeble child, with some external scrofulous disorder, for example, is made to use animal food and wine. Its color improves; it grows stronger; and if the disorder is unaffected, the child at least appears in better health. The same practice therefore is transferred to another child, also said to be scrofulous, but with some much more formidable disease—a white swelling we may say, or a psoas abscess. Here it is impossible but this practice must be highly noxious. The inherent powers of the system are weakened; and mere stimulation can never impart radical strength. On the contrary, it abbreviates life; and the mischief done must in such cases be very great and very sensible.

The habitual use of fermented liquors is a cause of destruction sufficient of itself to counteract all the good effects of diet by no means insalubrious, and of situation which is more than commonly healthful. In the Pays de Vaud, in Switzerland, half who are born live to forty-one. Very nearly a fourth part live to three years of age, the great mortality being in the first year. But notwithstanding these strong indications of general salubrity, after forty the probabilities of living in this country decrease very fast; and after sixty-five they appear to be rather lower than is common. "Mr. Muret," Dr. Price observes, "has taken notice of this fact, and ascribes it to the particular prevalence of drunkenness in his country. He had," he says, "once the curiosity to examine the register of deaths in one town, and to mark those whose deaths might be imputed to drunkenness, and he found the number so great as to incline him to believe that hard drinking kills more of mankind than pleurisies and fevers, and all the most malignant distempers."

The species of torpor or impaired sensibility, which I have attributed to the use of fermented liquors, is not a consequence of this practice only. Animal food produces it likewise, as is obvious from the improvement of the senses consequent upon relinquishing it, and using vegetable food only. As the putrescent matter or Septic Poison of water is powerful enough to induce palsy (as I shall show hereafter), this substance, it is evident, must have an analogous effect. We may extend this remark to the digesting powers. The disuse of fermented liquors, the relinquishment of animal food, and the use of purified water, all increase the appetite and appear to strengthen the digestion. We may conclude then, that fermented liquors, animal food, and impure water injure the digesting powers. The same observation may be applied to the secreting powers, and the derangement of the other functions of the body.

It must follow from these facts that these effects of diminishing the sensibility of the nervous system, impairing the digestion, and deranging the other functions of the body are not to be deemed specific effects of these peculiar matters. They are rather to be deemed common effects and common signs of an injured vitality; and it seems probable that any applications or agents whatever, which diminish the powers of life and tend ultimately to destroy them, would have similar intermediate effects.

This leads me to remark that the specific effects of fermented liquors upon the body have not been hitherto precisely determined. At least the diseases which are ascribed, and with great justice, to spirituous potations, often occurring where this evil custom cannot be traced, it is obvious to suspect that the liquors are not the sole agents, but are to be esteemed only as an accelerating and concurring cause in the production of these diseases.

Physicians assert that the use of fermented liquors occasions dropsy, epilepsy, palsy, insanity, and other the greatest calamities incident to human nature. A multitude of observations which are constantly occurring to any man who looks round him, give great probability to these opinions. For example, I was well acquainted with a gentleman who had been afflicted for eight years or more with the most acute and agonizing pains of the stomach attended with sickness and vomiting, and recurring at intervals. These pains finally ceased from no other cause, as far as it could be ascertained, than his becoming much more temperate, and wholly relinquishing the use of spirits and water. Another person whom I well knew, a large,

full man, advanced in years, was subject to attacks very nearly approaching to apoplexy. He lived in Herefordshire, and drank much cider. One year the crop of apples totally failed; and the man being in reduced circumstances, his supply of cider failed likewise. The consequence was that during this time he escaped his customary attacks.

Still, however, as these great diseases cannot be warded off by the strictest temperance, they cannot be deemed the specific effect of the poison of alcohol, but rather must be regarded as the ultimate effect of various and concurring morbific powers, acting on different persons according to the susceptibility and predisposition of each individual. It can hardly be doubted that every agent has a distinct and peculiar effect as well as a general effect. It is highly desirable that these should be duly defined. But I do not feel competent to this task, nor to elucidate the peculiar agency of each matter, further than by a relation of the facts, which I propose to form the sequel of this work.

That fermented liquors should be deleterious, induce disease, and shorten life, is so far from affording a reasonable ground of complaint against the order of nature, that it is a proof of the wisdom and beneficence of the over-ruling Power. Were it otherwise, the rich would be enabled absolutely to starve the poor, by their wasteful consumption of the articles of first necessity. To make a pint of wine, I suppose at least three or four pounds of grapes are used, enough amply to support a man for a day. The man, therefore, who drinks only his pint of wine daily, uses his own proper quantity of food, and destroys at the same time what might have been the food of another man. As the power of swallowing down wine is almost unlimited, to what an extent would this mischief spread, if it did not find its natural boundary in the destruction of life which such habits occasion? All but the proprietors of the soil, and those living by their sufferance, would be swept from the surface of the earth. Property under such circumstances would be an evil wholly insufferable.

The distilleries are reckoned servicable as being a resource against famine in unfavorable seasons. But are not the evils which they induce much greater than those which they are thought to counteract? Do they not keep up a perpetual famine among the wives and families of thousands of mechanics, by the dissolute habits of the fathers which they engender, the loss of health, and early deaths? To convert the bread of the poor into poison, of all the abuses of the bounties of Providence, is the most flagrant and abominable.

I must repeat on this what has been already asserted with regard to other morbific agents, that its action is not the less real because it is slow, and the impression for a time is hardly perceptible. A wine drinker, on hearing his favorite liquor called a slow poison, is reported to have replied, "A very slow poison indeed; I have used it daily these fifty years, and it has not killed me yet." And this is thought to be a very triumphant answer. But the same defence may be made of every bad habit whatever. Many bear them with impunity, which proves, not the salubrity of the habit, but the flinty hardiness of a constitution with which they are blessed.

The objections which are urged against the use of fermented liquors do not seem applicable to spices. However hot and fiery these are in the mouth, they do not appear to be deleterious. They do not derange the brain, nor stupefy the nervous system; they do not even appear to heat the body, nor greatly to accelerate the pulse. There cannot, therefore, be any objection to the moderate use of such substances. The experience and opinions of Mr. Bruce on this subject are, I think, worthy of attention, though not so immediately applicable to our own climate as to the more tropical regions. This writer asks:

"But did they ever feel themselves heated by ever so great a quantity of black pepper? Spirits, they think, substituted for this, answer the same purpose. But does not the heat of your skin, the violent pain in your head, while the spirits are filtering through the vessels of your brains, show the difference? When did any ever feel a like sensation from black pepper, or any pepper eaten to excess in every meal?

"I lay it down, then, as a positive rule of health, that the warmest dishes the natives delight in are the most wholesome strangers can use in the putrid climates of Lower Arabia, Abyssinia, Senaar, and Egypt itself, and that spirits and all fermented liquors should be regarded as poisons."

Having condemned water, and attempted to show experimentally its noxious influence upon the system; having condemned spirituous and fermented liquors, from the authority of the most enlightened medical writers and the common experience of mankind, it must follow that there is no species of drinking which I approve. And, indeed, I have already ventured to assert that all drinking is an unnatural habit; in other words, that man is not naturally a drinking animal.

To those who cannot raise their views above the passing scene, who think that human nature must necessarily be in

every situation the same as they observe it in their own town or village; to those, in short, who look for knowledge in the prattling of the drawing-room, or the gossip of the grocer's shop, I know that this appears a strange, if not a ridiculous assertion. We say, with great confidence, that water is absolutely necessary both to man and beast. But the strength of the evidence is not equal to the positiveness of the assertion.

In fact, we know very little about the habits of animals, except of those whose natures we have changed and corrupted by domestication. All that the natural historian can do with regard to the wild species, is to describe their forms, and such of their qualities as have fallen under observation; these last must of necessity be very imperfect. Imperfect, however, as it is, we know enough to be certain that the assertion of the necessity of the use of water to animals is, to the extent to which it is carried, absolutely groundless.

"I have known an owl of this species," (the brown owl) says M. White, "live a full year without any water. Perhaps the case may be the same with all birds of prey." There was a Llama of Peru shown in London, a year or two ago, which lived wholly without liquids; it would not touch water. In some of the small islands on our coast, on which there is not a drop of water to be found, there are, I am told, rabbit-warrens. Bruce says, "That although Zimmer (an island of the Red Sea) is said to be without water, yet there are antelopes upon it, and also hyenas in numbers." To account for this, he suspects that there must be water in some subterraneous caves or clefts of the rocks. This, however, is only supposition. The argali, or wild sheep, from the country in which it is found, it is certain, does not drink. Mr. Pallas says of it, "This animal lives upon desert mountains, which are dry and without wood, and upon rocks where there are many bitter and acrid plants." He further says of it, "There are no deer so wild as the argali; it is almost impossible to come near it in hunting.. They have an astonishing lightness and quickness in the chase, and they hold it a long time." How wonderfully, therefore, is this animal deteriorated by domestication, and by being forced to live in situations and to adopt habits unsuited to its nature!

Let us therefore consider man again, for a moment, as we may suppose him fresh from the hands of his Maker, and depending upon his physical powers only for his subsistence. We must suppose every animal so circumstanced, to be furnished by nature with organs suited to its physical necessities. Now I see that man has the head elevated above the ground, and to

bring the mouth to the earth requires a strained and a painful effort. Moreover, the mouth is flat and the nose prominent, circumstances which make the effort still more difficult. In this position the act of swallowing a fluid is so painful and constrained that it can hardly be performed. He has therefore no organ which is naturally suited to drinking. He cannot even convey a fluid into his mouth without the aid of some artificial instrument. The artifice is very simple, it is true. But still the body must be nourished anterior to all artificial knowledge. Nature seems therefore fully to have done her part toward keeping men from the use of liquids. And doubtless on a diet of fruits and recent vegetables there would be no thirst, and no necessity for the use of liquids.

If it be true therefore that other animals require water, it would not follow that man, whose organization is different, would require it likewise. But we, in fact, know very little of the habits of animals. Our common domestic animals certainly drink. But it appears, as far as my information extends, that common water has the same effect upon them as upon man; and that they are more or less healthy, according to the purity of the water which they use.*

* Many writers have observed the deleterious effect of water on our domestic animals. The following passage, from the Encyclopedia Methodique, is quoted in Sir John Sinclair's Code of Health, vol. iii.: "Vitruvius informs us that the ancients inspected the livers of animals, in order to judge of the nature of the water of a country, and the salubrity of its nutritive productions. From this source they derived instruction respecting the choice of the most advantageous situations for building cities. The size and condition of the liver is, in fact, a pretty sure indication of the unhealthiness of particular grounds, and of the deleterious quality of the water, which, especially when it is stagnant, produces in cows, and particularly in sheep, fatal diseases that have often their seat in the liver; as, for instance, the rot, which frequently destroys whole flocks in marshy countries. The spleen is also a viscus very apt to be affected by these qualities."—*Halle, Hygiene.*

In a work on agriculture, by Hogg, the Ettric Shepherd, it is asserted that if it be tried to rear young lambs in the winter, upon hay and water, they, for the most part, die. But if they are supplied with fresh succulent food, they live and thrive.

PART SECOND.

CASES AND OBSERVATIONS.

In the foregoing remarks I have considered the effects of our aliment in general, without any regard to the immediate condition of the system as to health or disease. If many of the substances so applied are morbific causes, though only ultimately and remotely, it cannot but belong to prudent foresight and prospective wisdom to avoid them. But the rules for the preservation of health and avoiding diseases, though always esteemed a branch, and a most important branch of medicine, are rarely demanded of the physician, except in cases of obvious and imminent hazard. As there can be no doubt that on these highly interesting subjects many gross errors and many deep-rooted prejudices pervade the mass of mankind, hopes may be entertained that, as the understandings of men become enlightened, beneficial changes may be introduced into the general habits of society. This is, however, a remote, and not a very cheering prospect. But to do all that is within the feeble powers of individual exertion to diffuse knowledge, and the blessings which follow in its train, is no more than striving to pay that immense debt which every one owes to the community, who has received from the sufferance of his fellow-men the exemption from servile and laborious occupations, and the inestimable advantage of mental cultivation.

It belongs more to the immediate duty of the physician to consider how far the principles which have been laid down warrant a change in the treatment of diseases, particularly those which are chronical, and upon which medicine has little influence, and to determine what are the advantages which experience authorizes us to expect from the proposed change.

Whatever may be the effects upon the human body of the substances which, though received at short successive intervals, are continually applied to the organs, in the form of food and

drink, it is obvious that they cannot be estimated as we would calculate the forces, and percussions, and motions of inert matter. The body is a self-moving machine, subject to its own peculiar laws, and though to keep up the succession of motions and sensations, and the integrity of the powers which are essential to and which constitute a living system, the application of the peculiar stimuli of the various organs is necessary, still there are inherent properties of the body as a whole, of each peculiar organ, the totality of which constitute that whole, and even of every individual molecule of the living mass. Upon a machine so constituted and so complicated do the stimuli act; and to gain any insight into their effects, we must consider the properties of the substance acted upon, as well as the nature of the agents.

The living body itself is not only endowed with peculiar properties at any given moment of its existence, but it is also in a constant state of change, both in its powers and in its materials. The irritability, mobility, and sensibility of the various organs are never uniform during any two successive portions of time; and at periods considerably distant the change is more strongly marked. The whole mass of the system, the materials of which the body is composed, are likewise in a constant state of flux, so that after a certain lapse of time there is a total change of matter under an identity of form. I suspect that the laws according to which these changes take place have not been sufficiently adverted to, and that some insight may be gained into the origin, phenomena, and periods of diseases by a more strict consideration of them.

The circumstances to which I have adverted create a considerable difficulty in conducting an inquiry, by the way of experiment, on the effects of regimen, or peculiar modes of living, upon the body, either in disease or health. This difficulty is increased by the original varieties of the human constitution, so that, upon the whole, it becomes extremely hazardous to transfer the result of one trial to other cases of a different nature, or even of the same, and where the appearances are very similar. But still in this, as in every other physical inquiry, the foundation of all knowledge must be laid in experience; to that the appeal must be made in examining the truth or falsehood of principles, and the usefulness or the futility of all new proposals for the improvement of the treatment of diseases. If the varieties of different constitutions are endless, and the forms of disease unlimited, still there are analogies and resemblances sufficiently striking and definite to serve as a guide in the intricate

mazes of investigation. The differences of result of the same treatment upon different habits, and under various circumstances, may be expected to be rather differences in degree than in kind; and in circumstances more accidental and of inferior importance, than in the more marked changes, which may afford a just basis for correct reasoning, and an encouragement for new efforts toward relief.

I proceed, therefore, now to relate some cases of disease in which I have applied in some of them with the strictest accuracy; in all with as much as I could effect, the principles, the justness in which I have labored to establish in the preceding pages, and in my former writings. Of the propriety of the general principle of removing in chronic diseases, if possible, all the causes of disease, whether these causes be immediate or remote, there can, I conceive, be no dispute. The only question is, what, in fact, are these causes? I have extended them to almost all the ingesta; but particularly to common water, to fermented liquors, and to animal food, fish, eggs, in short, to every thing except the matter which is the direct produce of the earth, and of such a kind as experience has shown to be wholesome and nutritive.

Of vegetable matter I do not know that any great nicety of selection is necessary; the palate will be a sufficient guide. There can be little doubt that vegetables, which are raised in the country where the land is not too highly manured, are preferable to those which are raised in the gardens of great towns, and particularly near the metropolis. But any evil which may be supposed to arise from this cause, being for the most part unavoidable, it is nugatory to give directions about it. Of vegetable matter, I consider fruit, and what is unchanged by culinary art, as the most congenial to the human constitution; and in consequent advise as much to be taken in this form as is consistent with comfortable feeling. In the sort of vegetable matter employed there may possibly be material differences on the constitution. We know that animals cannot with impunity deviate very much from the species of food which is most adapted to their natures. But as on this subject I am without any information on which I can fully depend, I think it best to leave it to be determined by time and future observation. Vinous and fermented liquors I forbid. The water used in every article in which water is taken into the stomach, I enjoin to be artificially purified by distillation.* This is the *Peculiar*

* Pure rain water, such as it is when coming from the clouds and received in a clean vessel, in short, rain water that is kept free from the

Regimen which I believe to be the best adapted to the cure of chronical diseases in general, such as I have described in my "Reports on Cancer," and which I here repeat for the sake of those who may not be in possession of that work, and also to save me the trouble of needless repetitions in the ensuing narratives.

But as a motion may, in inert matter, be continued by the inertia of matter itself, when the impressing cause has been removed, so the symptoms of disease may be found to continue when the remote or exciting cause no longer acts. The patient may be too far gone to be relieved, the inherent powers of the system being destroyed; or he may be partially relieved, or he may be cured. All these varieties are not inconsistent with the correctness of the principles and the acknowledged laws of the animal economy. In defining the extent to which this practice is applicable, with any probability of conferring benefit, the degree of benefit which it may probably afford, the time which may be expected to be required, and other various circumstances concerning which the mind of a sufferer is naturally anxious to be informed, experience alone must be our guide. To form any conjectures on such subjects, independent of trial, is obviously impossible.

And (if I may be allowed to say a word concerning myself in this place), with regard to the forbidding of animal food, an injunction that sounds more unwelcome to English ears than any perhaps that could be given, it is impossible that any one could have brought to a subject a mind more unprejudiced than I did. For forty years of my life I do not know that as many days were passed without animal food. Early in life (certainly before I practiced physic) I read some where, I believe in Mrs. Macaulay's letters on education, that giving children meat gravy instead of bread and water, and such sort of food, was discovered to be a great improvement in their diet; and as young people are apt to be delighted with discoveries, the impression remained, and I firmly believed it. The general strain of medical writings since that period was not likely to

admixture of all other substances whatever, is as good as distilled water for any chemical purpose however delicate; and from this fact we may safely infer, I think, that it is also as good for drinking, cooking, and all similar purposes. I am very confident that if Dr. Lambe's experiments had been made with pure rain water the results would have been equally favorable. Rain water all can have at a very little trouble and expense, a circumstance which is not true of that which is distilled. I cannot believe that the Almighty would not have placed the best remedy within the reach of all.—S.

change this mode of thinking. Respectable and well-intentioned writers have ascribed much positive mischief to vegetable food.

Rickets, scrofula, consumption, palsy, and a host of other evils, have been said to be the direct offspring of such a diet. Dr. Downman, in his elegant poem of infancy, wholly neglecting or being ignorant of all the effects of locality and other morbific causes, has condensed these charges in the following lines:

> The infant form'd perhaps with stronger nerves,
> Or of peculiar nature, may escape
> The blasting hand of sickness, or may thrive
> On vegetable fare; yet oft we view
> Where poverty more generous food denies
> Tottering Rachitis seize its helpless prey;
> Or slow consuming Tabes; or within
> His mazy labyrinth, the torturous worm,
> Finding a sure asylum, multiplies
> His noisome produce. Hence the unwieldy head,
> Distended joint, limbs variously incurved;
> Hence the sunk cheek, the hollow lifeless eye;
> Hence loss of balmy sleep, and appetite,
> Convulsive motions, agonizing spasms,
> And symptoms, which, in order to describe,
> Had foiled the Coan Sage.

Dr. Darwin, if not the best physician of his age, certainly a man of the finest genius, and of the greatest natural penetration and sagacity of them all, was an advocate for animal food. In his ardor against fermented liquors he has said, "Flesh meats as well as vegetables are the natural diet of mankind; with these a glutton may be crammed up to the throat, and fed fat like a stalled ox; but he will not be diseased unless he adds spirituous or fermented liquor to his food." And upon this I may say truly preposterous doctrine, he acted, both in his own person and in his family. Dr. Beddoes, likewise, whose writings on the subjects of health have been widely diffused, more from the attraction of the style and the confident tone of superiority assumed by the writer, than from any intrinsic worth of the matter, pushed the extravagance of his predilection for animal diet so far, that he maintained that butchers are not liable to become consumptive. He might have said, with an equal chance of being right, that common servants in gentlemen's families, who, for the most part, live much in the same way as butchers, do not become consumptive. But amidst this general concurrence of sentiment, it was not easy to permit any doubts on such a subject to come across the mind. Nor, in fact, did I entertain any, till in the year 1804 I observed the deleterious effect of impure water; when I saw

clearly enough that the weakness which many experience from abstaining from animal food, and the other mischiefs attributed to vegetables, might arise from a different cause than any thing really debilitating in vegetable food. It was not, however, till nearly three years afterward that I became fully convinced of the absolute necessity of a strict vegetable regimen in chronic diseases, from an attentive consideration of the facts which I have elsewhere detailed.

In the relation of the following cases, I shall not follow any artificial or scientific order, but shall put down the facts nearly in the order of time in which they occurred. Thus, the results of those cases which have gone on long enough to enable me to speak with confidence of the effects of the treatment, will be a sort of cover to the defects of others, which, if they stood alone, would not justify a similar language. I shall also, in general, give a name to each individual case of disease, exercising on this point my best judgment. For though I consider nosological arrangements to be of very little practical utility, yet some names are necessary to convey to others a general conception of things, and those, therefore, which are the most generally received are the best suited to this end.

I shall venture, in the course of my narrative, to draw such conclusions as the facts seem to warrant. Perhaps, here and there, I may offer some conjectures upon the more hidden causes of the phenomena of diseases. If in these I err, I doubt not that I shall be excused in the opinion of candid and ingenious men; since it is obvious that these causes, that is to say, the internal changes in the human body that form the more open and prominent phenomena of diseases, have, for the most part, eluded the research of pathological inquirers; this, I say, is obvious, from the little satisfaction to be gained on these subjects from the writings of the most esteemed authors.

CASE I.

Weak Eyes, Pimples of the Skin, Dyspepsy Sick Headache, Constipation, Depression of Spirits, and Gout.

Though the materials of the following case are taken from experience, in my own person, I have thought it better to give the narrative in the third person. I have begun the thread of

the history from a distant period, being convinced that the physical life of every individual consists of a series of phenomena, none of which are absolutely insulated and independent; that each occurrence is a sort of consequence of those which have preceded, and is closely linked to those which are to follow. Thus the disease which ultimately proves fatal often shows itself in early life, and might perhaps be traced by an attentive observer even to the first periods of existence. It "grows with our growth, and strengthens with our strength." We have an infinite number of histories of diseases, that is, of solitary attacks or single illnesses. But the histories of a diseased life, so that we may see at a single view the order and succession of events, are rare and very imperfect. To proceed, however, with my narrative.

August 9th, 1813. A physician, in the forty-ninth year of his age, passed the first eighteen years of his life without disease. But there were some peculiarities of constitution, which were observable at this time. He could never bear with ease a strong light, and the whole head was more than commonly tender. At eight years old he received, by a fall from a horse, a severe wound in the forehead. The cicatrix of this wound was always so tender, that he could never afterward bear the pressure of the edge of a hat upon it; on which account, he always wore the hat close upon the eyes. He was of a lax fibre, with a feeble pulse, thin, pale, delicate, and with very light hair.

At about eighteen, he began to have many pimples over the face, neck, shoulders, and breast; and these continued unremittingly upward of twenty years, being very troublesome, producing considerable deformity, and most of them, after suppuration, leaving pits in the skin. About the same time, too, he began to have some trifling uneasy feelings of the stomach, and slight dyspeptic symptoms.

At the age of twenty-four or five, he was often seized with sudden lameness, not very violent, and lasting only a short time. He was told by a very old sufferer from gout, that these lamenesses portended severe attacks of that disease. However, they left him before the age of twenty-eight, and they have only been brought to his recollection by subsequent events.

He arrived, however, at the age of thirty-two or three, without any serious or dangerous illness. He was dyspeptic, had often sick headaches, the eyes impatient of light, and had sometimes slight lumbago or rheumatism. But he had no confine-

ment nor violent attacks. On exposure to cold, or other occasions of disease, the stomach was the principal sufferer. With coughs or colds he was almost unacquainted.

About the period above mentioned, he perceived a degree of confusion about the head; reading caused a degree of dizziness, so that intellectual exertion or study, which had been a source of great pleasure, became less agreeable. About the same time, too, but the exact period he cannot fix upon, he found the head so heated at night that even a nightcap was uneasy, and he always threw it off before morning; a symptom that became permanent.

In some short time afterward, he found the dyspeptic symptoms greatly aggravated, the digestion imperfect, and, for the first time, the secretion by the bowels became irregular. Artificial methods of evacuation, both by medicine and by injections, gave considerable relief, and brought away many scybala, and much offensive excrement. But the benefit was only temporary; after the operation of medicine, the necessity for them occurred; natural evacuations, though not suspended, seemed ineffectual and unsatisfactory; nor was he ever easy and comfortable when the use of medicines was intermitted for any length of time. The mind, too, fell into that disagreeable state, in which the attention is greatly fixed upon the bodily feelings; in health, these are hardly noticed, but the attention is absorbed by things that are external and foreign to the body.

At this period of his life, he thought that inflammation of the bowels was caused by obstruction, and that the prevention or removal of this obstruction would obviate such disease. He was, therefore, extremely attentive to preserve a regularity of the intestinal evacuations by the regular use of gentle aperient medicines. But notwithstanding all his precautions, he was seized, in January, 1799, with a very severe inflammation of the bowels. The pain was chiefly seated in the right epigastric region, and though the violence of the disease was subdued in eight or ten days, the pain at that part continued to be felt for a twelvemonth; and after that attack, he never walked out in the cool of the evening, without feeling a slight tenderness and uneasiness over the whole abdomen.

For a year or two, however, after this attack, he enjoyed, upon the whole, a better state of health than before it. But still the dyspeptic symptoms and irregularity of the bowels continued to trouble him. The stomach never felt easy; he was oppressed with flatulence, and it continued necessary to

have recourse to art to procure regular evacuations. These symptoms kept slowly increasing. To these were joined, toward the close of 1802, fits of low spirits and hypochondriacal feelings, which it is impossible to describe, and the horrors of which can be known to those only who have felt them. They were not very lasting, and were succeeded by intervals of cheerfulness and good spirits.

In the beginning of 1803, the uneasiness of the stomach was more aggravated. It was not acute, but constant and wearing. It was not a fortnight before he conceived the idea which led to its relief, that he said in despair to one who was the sharer of all his thoughts, "What can it be that occasions this constant uneasiness of the stomach?" He was more than commonly temperate, lived in a small healthy country town, and from the nature of his profession used much exercise, though it seldom amounted to great fatigue. Still he found himself unable to ward off severe illness, and the dread of still more dangerous attacks.

The only thing which had afforded any permanent relief to the stomach was substituting water to beer as a common beverage. This has been serviceable, but without effecting a cure.

In the month of May, 1803, he saw reason to believe that deleterious matter was introduced into the body with the water that is habitually employed; and he determined therefore to try the effect of using none but what was made perfectly pure by distillation. The motives for this opinion he has detailed at length in a work entitled An Inquiry into the Origin of Constitutional Diseases. He believes that the views he took in that work are essentially correct, but that the hypothesis he adopted was too limited. He reserves, however, what he may have to say on this head to a more proper place and opportunity.

When he found that the uneasy state of the stomach was abated by this simple expedient, the delight received from the discovery may be more readily conceived than described. And indeed the real benefit produced was very considerable. He found a considerable improvement of muscular strength. In about nine months his sick headaches left him; and from that time to the present hour he has not experienced this great inconvenience once.* The constant uneasiness of the stomach soon became soothed, and in about fifteen months it was hardly sensible. All the dyspeptic symptoms were relieved, the sto-

* He has been informed by others of sick headaches having been relieved by distilled water, particularly by a gentleman more than sixty years of age.

mach was no longer loaded and oppressed with flatulence, and the bowels performed their regular functions without the aid of medicine.

Regularly in the month of October he had been subject, for some years, to severe attacks of pain in the jaws; so much that he used to take sixty, eighty, or even one hundred drops of tincture of opium to gain relief. This kind of attack recurred the first year after the use of distilled water with its accustomed violence. But since that time it has ceased entirely.

At the end of eight months, that is to say in the beginning of 1804, he had a relapse of the inflammation of the bowels, ushered in with exactly the same symptoms as in the year 1799, and with equal severity of pain. But in this instance it subsided in the course of two or three days without bleeding, and after a week or nine days it was entirely gone, without leaving any trace of uneasiness after it.

Before he adopted the use of pure water, the linen over the right shoulder was constantly stained with blood, from the breaking of a succession of pimples upon the subjacent parts. This ceased by its use, as did the tenderness of the abdomen upon exposure to the damps of the evening.

All these changes showed that the whole habit of body was affected by this simple change. It appeared to pervade and affect every organ. But its effects were most evident upon the mouth, tongue, and palate. The tongue was less foul, the feelings of all the parts more comfortable, and the teeth became very much divested of the dark and foul matter with which they were soiled.

Another appearance was very striking. He had observed for years that the skin of the neck contracted a black stain, which he in vain attempted to remove by washing. It was either indelible, or was quickly renewed after it had been removed. But this foulness, like that upon the teeth, was taken away almost entirely by the same process. It is evident, therefore, that this blackness, which may be observed on many persons, and which is that which soils the linen in contact with the neck, proceeds from the body itself. It must be a taint of the mucus of the skin; and as the black summits of coagulated mucus which may be pressed out of the skin (which are vulgarly called grubs) are discolored only where they have been exposed to the atmosphere, it seems that the matter is colorless when excreted; but it is blackened by the action of the atmosphere.

The whole skin also became less tender. Thus he could

bear shaving, even with cold water, without pain; the great tenderness of the forehead diminished, so that he became able to bear the moderate pressure of a hat upon the old cicatrix on the forehead without inconvenience. The number of pimples much diminished, and those which appeared did not so readily run into suppuration.

Observing these things, he cannot be surprised even at this time, that, not suspecting any other evident cause of mischief, and seeing that the one which he had detected was of itself adequate to account for the premature and violent dissolution of the body, he should have thought that no other precaution than attention to the purity of the fluids introduced into the body, with an observance of the common rules of temperance and moderation, was requisite to the preservation of the health. Ought it to be a reproach to him, that, at this period, with regard to the nature of the food, he was of the same opinion as the bulk of the community and the great body of the profession, and that he had not adopted sentiments, which are by the majority, at this moment, deemed indefensible?

But his own personal experience, united to the observations he made upon others, proved to him the insufficiency of this precaution alone. During the whole of 1804 he enjoyed an improved state of health. Nor did he notice any thing in particular, except it was occasionally an uneasiness over the head, particularly after dinner. In the course of 1805, he first felt pains over the head frequently occurring. They were quite different from sick headaches; they were of the kind rather which would be called tensive, affecting the whole cranium, and much depressing the spirits. The hypochondriacal feelings and lowness of spirits increased. After dinner, the propensity to sleep was frequently irresistible, even in company. Besides this, he found the eyesight permanently injured. Every object at which he attempted to look with steadiness had a vibratory motion. This was more particularly evident when examining pictures at a little distance. The hands and feet were always parched and hot, the skin dry, and there was a tendency to emaciation. At times he found it almost impossible to fix the mind to any thing which demanded study and reflection.

Toward the close of this year, and the very beginning of the next, the pains of the head increased much in severity, so that he was obliged during the attack to lie upon the bed, and he began to loath his food. He resolved, therefore, finally, to execute what he had been contemplating some time—to abandon animal food altogether, and every thing analogous to it, and to

confine himself wholly to vegetable food. This determination he put in execution the second week of February, 1806, and he has adhered to it with perfect regularity to the present time. His only subject of repentance with regard to it has been, that it had not been adopted much earlier in life.

He never found the smallest real ill consequence from this change. He neither sunk in strength, flesh, nor spirits. He was at all times of a very thin and slender habit, and so he has continued to be; but upon the whole he has rather gained than lost flesh. He has experienced neither indigestion nor flatulence, even from the sort of vegetables which are commonly experienced to be the most oppressive and windy, as beans, peas, peas-soup, etc. Nor has the stomach suffered from any vegetable matter though unchanged by culinary art, or uncorrected by condiments. These results, so opposite to common experience, and even to his own in the former part of his life, can be accounted for only by considering the changes introduced into the state of the digesting organs by the previous use of the purified water. The only unpleasant consequence of the change was a sense of emptiness of the stomach, which continued many months. In about a year, however, he became fully reconciled to the new habit; and felt as well satisfied with his vegetable meal, as he had been formerly with his dinner of flesh.

He can truly say that since he has acted upon this resolution, no year has passed in which he has not enjoyed better health than in that which preceded it. But he has found that the changes introduced into the body by a vegetable regimen take place with extreme slowness; that it is in vain to expect any considerable amendment in successive weeks, or in successive months; we are to look rather to the intervals of half years, or years.

But a perceptible benefit was very soon obtained. The severity of the pain became quickly mitigated, so that it never once, from the time at which he made this change, forced him to take to his bed. But it recurred again and again for three or four years, at irregular but no very distant periods; perhaps a week rarely passed without one or two paroxysms. And for three years at least he constantly awoke with pain in the back of the neck, near the insertion of the muscles of the neck into the occipital bone, and from thence spreading over the whole head.

So much was the sensorium affected, that repeatedly, while walking through the streets during the first year, he was insensible of the weight of his body, and could not feel the pressure

of his feet upon the pavement. He presumes that this sensation, or rather this want of sensation, must approach nearly to the state of those who suffer apoplectic attacks. This very unpleasant state continued recurring for near twelve months. Since that time it has never been experienced.

When this symptom disappeared, the paroxysms of uneasiness over the head were accompanied with a more evident sensation of fullness and oppression; and these continued to recur as the former paroxysms had done. It was evident, therefore, that the morbid changes which were attended with a temporary abolition of sensibility, in an inferior degree of intensity, produced the sense of local fullness and oppression. This continued to be considerably oppressive, even during the fifth year of this course (1810).

In the autumn of the preceding year (1809), he was exposed during a journey to the joltings of a stage coach. The common asperities of the road did not affect the head, but a violent jolt gave the sense of a deep internal pain in the interior of the brain.

And—to bring into one point of view this part of the case—even now, during the eighth year of this mode of living, these pains recur very nearly in the same manner as they have for the last three or four years. Sometimes two or three times in the week, occasionally not above once in a fortnight, he awakes (having been restless the preceding night) with a pain at the back of the neck, and some uneasiness over the head; it continues sometimes ten minutes, very rarely half an hour, and then subsides, with perhaps a trifling depression of strength. It will happen, though very rarely, that it continues to be felt, but in a very trifling degree, during the whole of the day. But the sense of fullness and oppression is completely gone, and the whole is so trifling as not to deserve the name of disease, nor even of inconvenience, since it does not in any degree interfere with the common duties and occupations of life.

All these circumstances sufficiently demonstrate that there was formed in this case deep-seated disease of the substance of the brain, and it appears very evident that this disease was proceeding with a rapid pace toward an apoplectic or paralytic attack. What sets this beyond dispute is, that in the worst of these pains of the head, the tongue has been so affected that he could not speak with perfect freedom. The effect of the vegetable regimen, even during seven years and a half, has not been enough wholly to subdue the disease. But it has regularly and progressively diminished its intensity. The paroxysms have

returned nearly in the same manner during the last year as during the first; but in each successive year the strength or intensity of them has been uniformly diminished.

And granting the representation of facts to be correct, and the nature of this case to be justly determined, I must be permitted to ask, what other method than that which has been adopted would have produced the same benefit? If such methods exist, I confess my own ignorance of them. Bleeding, either general or topical, is that which is most resorted to, and is that which gives the greatest relief to urgent symptoms. But it can do no more than this; the morbid diathesis of the system, that which exists equally during the paroxysms of disease and during the intervals, remains unchanged. All the symptoms of oppression of the brain will persist, and gradually increase, though the patient be cupped repeatedly and regularly, as I have myself frequently witnessed.

If it be thought that if a cure were possible by this method of treatment, it ought surely to be effected in the long period of seven years and a half; let it, on the other hand, be considered how long there had been signs of the formation of this disease before it had arrived at that degree of severity which enforces attention, and excites apprehension. I have shown, from the tenderness of the forehead, that there existed a morbid predisposition in these parts in the eighth or ninth year of life. It is clear enough, likewise, from the dizziness and heat about the head, which I have mentioned, that some morbid change had taken place nine or ten years before these pains came on. It cannot be thought strange or unnatural if it should be proved, that wholly to eradicate these symptoms requires some such time as from the appearance of the first unequivocal signs of disease having taken place.

But though these pains still recur in a trifling degree, the relief given to the brain in general has been decided and most essential. It has appeared in an increased sensibility of all the organs, particularly of the senses—the touch, the taste, and the sight—in greater muscular activity, in greater freedom and strength of respiration, greater freedom of all the secretions, and in increased intellectual power. It has been extended to the night as much as to the day. The sleep is more tranquil, less disturbed by dreams, and more refreshing. Less sleep upon the whole appears to be required. But the loss of quantity is more than compensated by its being sound and uninterrupted.

In about three years that vibratory motion of visible objects

was either gone or hardly perceptible. The impression of light is no longer painful; the eye rather courts than avoids it. The ear has received a corresponding benefit. Sounds had become oppressive to him; the noises of children had in particular become irksome. But this morbid feeling has wholly vanished. He is much more patient of the changes of the atmosphere, but particularly the cold. He had been clothed both in summer and winter in flannels. But he has been enabled to quit them without injury. Flannel drawers, and flannel linings to the coat sleeves, during the winter months, is all that he has retained. Wet clothes or wet feet are no longer objects of terror. They cause no injury worth regarding.

About the same time the burning heat of the palms of the hands and the soles of the feet went away. The skin, which had been parched and dry, became moist and perspirable. The tongue, which had been habitually foul, became clean. The saliva lost all clamminess and viscidity; and the secretion by the kidneys was much increased, though the quantity of watery fluids taken into the stomach was, at the same time, greatly diminished.

The hypochondriacal symptoms continued to be occasionally very oppressive during the second year, particularly during the earlier part of it; but they afterward very suddenly declined, and at present he enjoys more uniform and regular spirits than he had done for many years upon mixed diet.

From the whole of these facts it follows, that all the organs, and, indeed, every fibre of the body is simultaneously affected by the matters habitually conveyed into the stomach; and that it is the incongruity of these matters to the system which gradually forms that morbid diathesis, which exists alike both in apparent health and in disease. I might illustrate this fact still more minutely by observations on the teeth, on the hair, and on the skin. I might show that, by a steady attention to regimen, the skin of the palms of the hand, or between the toes, becomes of a firmer and stronger texture; that even a corn upon the toe, which had for twenty years and upward been growing more fixed, firm, and deep, had first its habitudes altered, and finally was softened and disappeared; but perhaps enough has been said already to give a pretty clear idea both of the kind of change introduced into the habit by diet, and of the extent to which it may be carried.

I proceed, therefore, to relate some new phenomena which took place during the course of this regimen, which are both curious in themselves, and lead to important conclusions.

I have said that, at the age of twenty-three or twenty-four, the subject of this case was liable to sudden lamenesses, which were thought by a gentleman much experienced in gout, from having been himself a great sufferer, to portend that disease. These lamenesses disappeared and were no more thought of, certainly before the twenty-sixth or twenty-seventh year. Neither did any thing like a gouty affection of the limbs appear, when the stomach and bowels were so much relieved by the use of the pure water. But he had not confined himself to vegetables for two months before he began to have slight pains in the feet. In the course of the year these pains much increased; they became strong and beating, but of short duration, and unattended by any swelling or discoloration. Toward the close of the second year (1807), the determination to the feet was still stronger; there were about that time frequent violent pains through the ankles and metatarsal bones; they were internal but sudden, like the infliction of a blow; he used to say, it was as if his feet had been struck with a sledge-hammer; there were also sudden twinges through the toes, so sharp as to oblige him suddenly to raise his foot from the ground. In the course of the third year he became lame in one of his feet for two or three months. He was accustomed to awake in the morning without any lameness, but before he could dress himself the lameness would come on, and remain for an hour or two, after which it went off, and he could walk perfectly well for the rest of the day. There was redness and slight tumefaction upon the upper part of the foot, over the seat of the disease. During the whole of the succeeding winter, though the beating pains of the feet were much diminished in violence, the gouty affection was more firmly settled in the feet. One of the little toes was so constantly painful, that for many months of this winter and the ensuing spring, the pressure even of the bedclothes was painful. For a year and a half longer he had almost constantly some gouty pains of the toes, and frequent fits of lameness. The last time that this occurred was in August, 1810, when, for one evening, he was so lame as not to be able to walk freely without support.

This happened when he had continued the vegetable regimen four years and a half. Here again, then, let us pause for a moment and consider the obvious deductions from these facts.

I shall confine myself to four observations:

1st. It is clear that these pains of the extremities were essentially the same affection as had appeared in the early part

of life. The cause of their disappearing about the twenty-seventh or twenty-eighth year must have been the shifting or concentration of diseased action upon the internal and more important organs, the stomach and the brain. When these became relieved by the vegetable regimen, the extremities became again affected. Disease, therefore, though seated in different organs, may be the same in kind; and we may conclude that it is the property of this regimen, and in particular of the vegetable diet, to transfer diseased action from the viscera to the exterior parts of the body, from the central parts of the system to the periphery. Vegetable diet has often been charged with causing cutaneous diseases; in common language, they are, in these cases, said to proceed from poorness of blood. In a degree the charge is probably just; and the observation I have just made may give us some insight into the cause of it. But this charge, instead of being a just cause of reproach, is a proof of the superior salubrity of vegetable diet. Cutaneous eruptions appear, because disease is translated from the internal organs to the skin.

2d. There was an interval of fifteen or sixteen years from the disappearance of these pains, in consequence of the gradual changes introduced into the system by the use of animal food, and their being brought back again by the vegetable regimen. Now, during all this number of years, there was neither inflammation, pain, tenderness, nor any other external sign of there being any disease of these extremities. But from the changes which took place, as soon as the vegetable regimen was adopted, it is clear that they were really diseased at this period, and had been so during the whole interval of fifteen or sixteen years. Disease should be considered, therefore, not so much as an obvious change in the texture of parts, which is either visible or tangible, as a change in the inherent powers, which belong to the part as a living substance. The more palpable changes, which constitute the symptoms of disease, are the consequence of the previous and imperceptible changes which have taken place in the vital powers of the part. The inherent vitality of the part, that which distinguishes every portion of the living body from dead matter, may be, and often is, nearly extinguished, when there is no such change of structure as can be readily detected by the senses.

3d. As, in the affection of the head, paroxysms, the very same in kind, but differing in intensity, continued to recur, even for years after animal food had been discontinued, it must follow that whatever was the proximate cause of the paroxysms,

under the mixed regimen, the same continued to be the proximate cause under the vegetable regimen. If, therefore, there was increased vascular action in the brain, or in its appendages, when these paroxysms first took place, and forming the foundation of them, the same increased action, that is to say, the same in kind, but not in degree, has continued for a course of many years under a diet of vegetables alone. We see, then, how ill-founded is the notion that inanition and loss of power is induced by a vegetable diet. In fact, all the observations that have been made, have shown the very reverse to be the truth. Symptoms of plenitude and oppression have continued in considerable force for at least five years. And the consequence of this peculiar regimen has been an increase of strength and power, and not a diminution. In the subject of this case, the pulse, which may be deemed, perhaps, the best index to the condition of all the other functions, is at present much more full and strong than under the use of animal food. It is also perfectly calm and regular.

4th. We may, from the circumstances of this case, form something like an estimate of the time during which the obvious effects of animal diet will remain in the system. In the instance before us, there was a gouty affection of strength or intensity, sufficient to produce lameness, after the animal food and every other matter which co-operates to produce such a disease had been discontinued four years and a half. I said therefore to myself, if this degree of disease can remain four years and a half, supposing the intensity of the diseased condition to continue uniformly to decline at the same rate, we ought still to expect some slight vestiges of the original affection at double the distance of time, or at the end of nine years. It is obviously improper to transfer this precise result to any other case whatever; every one must be judged by its own proper and peculiar circumstances. But a similar mode of reasoning, and a probable anticipation of future events, may, I conceive, be applied to any case whatever, according to the phenomena which it presents.

To finish, therefore, this long account: After four years and a half, the gouty affection still continued, but its strength became so much diminished, that the lameness never again appeared. Sometimes there has been a slight stiffness of the heel; sometimes pains of the toes, with redness and soreness of them all. Through the whole of the seventh year (1812), there was a stiffness and some pain of the left knee. But finally, in the eighth year, the whole of these external pains have dis-

appeared, with the exception of that trifling affection of the head, which has been mentioned.

Nor has this gouty disorder been the only external disease which may be said to have been induced by the vegetable regimen. Formerly he hardly knew (as has been said) what it was to have a cough or a cold; the stomach or bowels were on all occasions of exposure the principal sufferers. But at the end of the second year of the vegetable regimen, he had angina, infinitely more severe than he had ever suffered before. The attempt to swallow was perfect agony. He has since had many severe coughs and colds, attended with much defluxion. There has also been much itching on the surface of the body, particularly on the head, the hams, and the legs. But to compensate for these trifling evils, now the stomach and bowels never suffer.

And as to the general state of health, it has uniformly and regularly improved, and more obviously since the fifth year than before that time. During the first five years there were many threatenings of the return of his former disorders, but which came to nothing. In particular, in the spring of the fourth year (1810), he looked thin and ill, had great agitation and restless nights; the bowels became tense; and once he threw up his food. But all this passed off without any real illness; and he can say in general that, with the exception of the attack of angina, which kept him within doors for three or four days, he has not now for the space of seven years suffered the confinement of a single hour.

With regard to fermented liquors, his experience is shortly as follows. He was at all times habitually sober—a habit to which, in this instance, he attaches no personal merit—since he never liked wine, and it occasioned heat and uneasiness. He, therefore, till near thirty years old, confined himself to a single glass of wine daily, as his constant habit when not in company. But after that time, he felt compelled in a manner to use more wine; he felt chilly and uneasy, and found that by the use of about three glasses of wine daily, he was warmer, was more cheerful and active, and had in every respect less uneasy feeling. But by the use of the pure water, he found these uneasy sensations greatly diminished, and the necessity for wine appeared removed. He was, therefore, enabled gradually to leave it off entirely; and at present he finds fermented liquor of any kind obviously injurious.

These observations instructed him how substances may introduce into the system a quantity of agreeable sensation, or

destroy uneasy feelings, which are at the same time ultimately injurious, and concur with other causes to destroy the vital powers.

He had, when living on common diet, been habitually thirsty, and like most persons inclined to studious and sedentary habits, was much attached to tea-drinking. But for the last two or three years, he has almost wholly relinquished the use of liquids; and by the substitution of fruit and recent vegetables, he has found that the sensation of thirst has been, in a manner, abolished. Even tea has lost its charms, and he very rarely uses it. He is therefore certain, from his own experience, that the habit of employing liquids is wholly an artificial habit, and not necessary to any of the functions of the animal economy.

He has chosen to denominate this affection of the head *atonic gout*, induced by the obvious connection between it and the gouty pains. The general habit was of that kind, that it would have been said that there was not sufficient strength of constitution to throw out the gout upon the limbs. But if it should seem more proper to any one to suppose this disease a disposition to apoplexy, palsy, or any other of the great diseases originating in the brain, I should not think it worth contending about. Such disorders affecting gouty subjects cannot be distinguished from the same disorders affecting persons not subject to gout.

I may, in relation to this long history, have been tedious, and seem needlessly minute to most of my readers. But in truth, I have omitted many circumstances for the sake of brevity. There is no other case, the circumstances of which can be so strongly impressed upon my mind, and of which I can so fully warrant the correctness of statement. The conclusions, too, which I have drawn from the facts, are general conclusions, illustrative of the universal laws of diseased action. I shall, therefore, be absolved from the necessity of employing the same minuteness in what I have further to relate. If those for whose service these labors are principally designed—I mean persons suffering under habitual and chronical illness—are enabled to go along with me in my argument, to form a general correct notion of what they are to expect from regimen, and, above all, to arm their minds with firmness, patience, and perseverance, I shall not readily be induced to think that I have written one superfluous line.

Nov. 15th, 1814.—I feel it needful to add to this account no more than that the pains of the head are at present still

more trifling, and as nearly gone as possible. To say that they are wholly removed would not be the truth.

CASE II.

Disposition to Pulmonary Consumption.

August 25, 1813.—L. W. L., aged sixteen, had in the first years of his life every mark of a deep scrofulous habit. He was of a fair and pale complexion, and at six years of age the skin was rough, the eyelids habitually red, the muscles weak and soft, the joints tumid. He had suffered one severe attack of abdominal inflammation; the abdomen was always hard and tumid, though great attention was paid to regularity in his diet, and he constantly required medicine to keep the bowels regular. To these appearances was added a thinness which might be justly called emaciation, and a generally unhealthy, pallid, and sickly appearance. These appeared to me sufficient indications of a diseased state of the mesenteric glands, which is a precursor or concomitant of pulmonary consumption.

This general state of health was greatly amended by the use of the pure water, which was adopted in May, 1803; the habit was strengthened, the bowels became soft and regular, and the countenance became more healthful. From having been an inhabitant of the country, he had become, in the autumn of 1803, an inhabitant of London; and it was observable in him, that a child, who in the country was subject to frequent indispositions, was, by this attention only, in the heart of the metropolis, for about sixteen months kept free from every sort of illness.

About Christmas, 1804, he had a mild ulcerated sore throat, which appeared to have been received by contagion. After this, though he suffered very little at the time, the health began rather to fail. It left a constant hacking dry cough, which remained fixed for three or four months. At this time, instinctively, he left off animal food, and the cough disappeared in the spring, 1805. He then, spontaneously also, returned to the use of animal food, which I did not oppose, my opinion at that time being that the appetite should be taken as the guide for the species of food best suited to the present state of the body. I did not at that time consider that the fondness for animal food is wholly factitious, and could not in fact exist independent of

previous indulgence. In the course of this year he became very pallid, so that by the end of it his face was of the color of marble. He had an obstinate inflammation, of a scrofulous nature, of the left eye and eyelid in the autumn, which left the vessels distended with blood from relaxation. The appetite also became very delicate and capricious, so that his dinner was (as was remarked by a physician who saw him frequently) more play than eating. Even many sorts of vegetables he disliked. In this state, without any positive disease upon him, but with the air and aspect of a child that would never reach manhood, I resolved to confine him to a strict vegetable regimen, early in the year 1806.

The consequence of this has been, that from that hour to the present (now seven years and a half), he has been free from all serious illness; and the health has every year become more firm and established. A very few slight indispositions he has had, which it is not worth while to relate at length, except one circumstance, which I propose to make the subject of a distinct account. But in this case, though the subject was so young, the constitutional changes have been introduced very slowly; indeed, as slowly as in persons of advanced years.

In the autumn of 1806 the opthalmia returned, but much less severely, and since that time it has not appeared. But the vessels of the eyelids remained distended for three or four years, which gave the appearance of weakness in the part. For full as long a time he had a short hacking cough every successive winter. During the whole of the second year (1807), he continued to look exceedingly pallid, and far from healthy; and even at the end of four years he had, with a thin, pallid, and extenuated body, an extremely full, throbbing, and what would be called an inflammatory pulse. But since that time it has become much softened.

Formerly, when eating animal food, the tongue was at all times covered with a white slimy crust. It is now, and has been for several years, perfectly clean. The smallness and delicacy of the appetite remained for full two years, after which it improved and became much less fastidious. He is now rather pallid, but has much more color than when he used animal food.

It was an observation of his own, when he was under ten years of age, that "When I ate meat, I was at night first too cold, and then a great deal too hot, so that I could not sleep; but now I sleep comfortably all night long." I doubt whether on any point more unexceptionable evidence was ever offered.

He is at present in very good health, the breath sound and strong, the appetite hearty, with color enough, and enjoying great activity of mind and body, with a greater flow of animal spirits than falls to the lot of most people. But he carries about him strong marks of a consumptive constitution; and I do not doubt that if the attention, which has been paid to him now for a series of years, were to be remitted for three or four years, he would become really consumptive.

Nov. 17, 1814.—As this young man approaches manhood he appears to acquire more firm health, and the signs of his former delicate state are more completely effaced.

CASE III.

Distortion of the Chest, Pimples of the Face, General Debility, and Weak Eyes.

August 28, 1813.—H. L., aged nineteen, adopted the use of pure water in 1803, being then between nine and ten years of age. She had passed through the first years of her life without any dangerous illness, but was delicate and subject to congestions of the bowels; she was rather pallid, narrow in the chest, and had not the appearance of a child in good health. About the ninth year she appeared evidently to be growing awry. The health obviously improved by the use of the pure water, but not in such a degree as to furnish any precise observation, except that the tendency to crookedness was checked. At the time that this habit was persevered in, but while she used a mixed diet, the skin of the face became much deformed with the black spots that are called grubs, and the forehead in particular became almost covered and roughened with an aggregation of pimples. In 1805, she was still more pallid, heavy about the eyes, with a dark circle round them; and the spirits were so tender that every little exertion was a toil, and on the most trifling occasion the eyes would overflow with tears.

About midsummer, 1809, I joined to the pure water a vegetable regimen. She went to school at Warwick, where her regimen was continued. About October, Dr. Winthrop, then a physician at Warwick, wrote to me, that her mistress was under considerable anxiety on account of this child; that she seemed in still worse health and spirits than before, which was

attributed to the change of diet, which he feared would never agree with so delicate a subject.

I could not, however, attend to this well-intentioned advice, which, I believe, was such as would have been given by almost every other medical man. But I conceive that delicate subjects are those which afford the least resistance to morbific impressions, and from which, therefore, such impressions should be removed with the greatest care. Besides, I knew perfectly well what had been the state of the health under the common regimen; and what could be hoped from a recurrence to it, but a continuation of the same condition?

And all the prognostications of mischief from this change have been completely falsified by the event; for the truth is, that from that day to the present she has not had an hour ill health, nor scarcely the trifling indisposition of a single day. Every year the marks of weakness and delicacy wore off, and were at length completely effaced; and she has grown up much more robust. The tenderness and lowness of spirits, the heaviness of the eye and languor of the countenance have been removed and have been succeeded by uniform cheerfulness, activity, and intelligence. The chest has expanded and assumed a perfect form; and a cough, which, in the first years of this course, gave strong apprehensions of a pulmonary taint has wholly disappeared. In a word, she is now, and has been, for several years, in perfect health.

The roughness of the forehead, occasioned by the swarm of pimples, did not begin to yield till after more than two years, when they gradually disappeared. If, at present, there is an occasional pimple on the face or chin, she observes that it is much more painful than formerly, which is a sufficiently clear index that the general sensibility of the system is much greater or more acute than formerly.

I have chosen to assume a symptom that is in itself very trifling (though by no means so in the estimation of young women), as the denomination of the condition of the subject of this relation. The narrow form of the chest, or the habitual tenderness of spirits, formed a more prominent feature of the case. But I choose the cutaneous disease, in order to evince the connection that subsists between all the forms of disease, from the most trifling to the most severe.

The color in this example is not so high as is customary with the eaters of animal food. But she is much less pallid than when she conformed to the common habits of life.

It may be worth while to observe that though in this

subject there were many signs of constitutional weakness, yet there has never been any deficiency of muscular strength; on the contrary, the muscular power is, and has been, rather greater than usually is the lot of persons of her age and sex. I am inclined to infer from this circumstance, that the disposition to grow awry, which is so common in growing girls, is founded more in a weakness of the cartilaginous and ligamentous parts of the body, than of the muscles. If any portion of these parts is deficient in power, and the muscles have at the same time their due, or more than their due tension, the body inclines where there is the least resistance, and the symmetry of the parts is destroyed.

Nov. 19th, 1814.—In the spring of the present year this young person complained of a sense of weight, which was referred to the stomach; the pulse became rapid, rising to 120 in the minute, and the muscular strength was depressed. These symptoms lasted three or four days, and then declined. But they again recurred, and she continued in this condition, not so ill as to be confined, but enough to affect her strength and spirits for about three weeks. Then the symptoms went off, and she regained her usual health.

We had here, what I think may be properly called the embryo of some disease, and probably of a very severe one. I cannot positively pronounce even what was its seat. But I have not thought it right to keep back any fact which may be thought by some to militate against my own principles.

CASE IV.

Disposition to Hydrocephalus and Apoplexy.

Nov. 21st, 1814.—A. L., aged 14, had marks in her first year of some irregularity of the functions of the brain. These were more evident in the second and third years. Her life, at this early period, was a continued storm of passion, though the natural disposition seemed good. She was plethoric, high colored, and the respiration thick. The front teeth, particularly the two anterior incisors of the upper jaw, were wholly incrusted with black matter.

The use of the pure water was adopted for this child in the spring of 1803. Its effects upon the respiration were very striking. Before this, she could never bear being tossed with

any quickness, as we are apt to do when playing with young children, without evident marks of terror and uneasiness. But in some time after using the distilled water, the same degree of violence had no longer the same effect, nor did it cause any apparent uneasiness.

In the course of the ensuing winter she had a fit of sleepiness, which lasted a day and a half. In the spring following (1804), she had scarlatina very severely, but recovered from it perfectly. She continued to use the mixed diet for nearly three years and a half. During this time it was observed that her nights were very restless; she often screamed with violence in her sleep. She had also frequent pains of the head, which, when they affected her, caused a heaviness and peculiar appearance of the eyes, so that it was easy, from the countenance, to judge when the head was affected. She continued to have a very high florid color; she grew much, but the chest was narrow, and the abdomen so protuberant as to be very observable. The spirits were also irregular; she was easily offended, took little delight in play, but rather affected solitude. The pulse was frequent and irregular. The tongue was always covered with a thick white crust. The thyroid gland was also large, and seemed inclined to swell.

Under these circumstances she was confined to a vegetable diet in November, 1806, and has regularly adhered to it to this time. For a very considerable time there was hardly any perceptible difference in her constitutional affections. When she had been confined to this diet a year and a half, she had one night such violent screaming in her sleep, that she brought out of their beds the family at whose house she was. In the spring, 1809, she retained her high florid color, and it was very nearly as strong as when she used animal food. In the autumn of this year she had a mild inflammatory fever, which confined her to her room, and reduced her a good deal. All this time the symptoms of the diseased state of the head, the screamings at night, the pains frequently recurring, and the dullness and heaviness of the eyes, and the other circumstances I have mentioned, continued to harass her. Even at the end of four years they were so strong as to attract the observation of those with whom she conversed. But now, that is to say, at the end of eight years, and, indeed, for the last three years, the whole habit is changed, and with it the marks of constitutional disease removed. The high florid color of the face is gone, though she is at present far from pallid. The chest has become expanded, and the tumefaction of the abdomen is re-

moved. I have a right, therefore, to say, as I have already done, that this high florid color, so far from being a sign of health, is a sign of disease. The tongue is become quite clean, and the teeth are without any incrustation. Indeed, the use of the pure water alone took off the remarkable foulness of the front teeth. The swelling of the thyroid gland has disappeared.

If I were to say that the affection of the head is wholly removed, I should say what is certainly not true. But it is so much removed, that she has every external appearance of good health; nor could it be discovered that she has at present any complaints about the head, without a minute and critical examination. The common observer would pronounce her in perfect health.

The similitude between the circumstances of this disease and the pains of the head related in the first case (see p. 151), are sufficiently obvious. This case again warrants the conclusion that, in deep-seated constitutional disease, the effect of vegetable diet is slowly, but progressively and regularly, to diminish the intensity of the paroxysms which form its external sign and character.

And when I consider the early period at which these signs of disease in the most important organ of the system appeared, and the great pertinacity with which they have continued for a series of years, I think myself fully warranted in the supposition that, under common circumstances, these symptoms must have been continually aggravated; that they would have led to a fatal disease of the brain, probably under the form of the *hydrocephalus internus;* and that it is very unlikely that she would have reached puberty, or even that period of life at which she is now arrived.

Though this child has now for several years been in a very good general state of health, she has commonly, at least once a year, a mild febrile attack which confines her for two or three days. The head is always the part most affected.

Three other young people, members of the same family as those whose cases have been related, have used the same regimen for about the same period of time. They are and have been, since its adoption, without any thing like serious diseases. The oldest (now in her nineteenth year) has a better general state of health than in the early period of life; but there are no circumstances worthy of relation, except it be, that, notwithstanding the attention paid to her diet, she has some thickness about

the throat. The thyroid gland is large, and the whole throat is larger than in common, or than is perfectly natural. The gland has not the size which can be called bronchocele, and is in texture, as far as can be determined by the feel, sound and healthy; but it is obviously the embryo or germ of a bronchocele. The second, aged thirteen, had some indisposition of a few days, when she had left off animal food nine months. She also lost her color, which was fine, so as to be a considerable ornament to her person. This occasioned much regret. But, with the above trifling exception, she has enjoyed a complete and uninterrupted state of health. Her color improves a little, but she is still a pallid girl. The third, aged twelve, likewise lost his color; but has scarcely had any indisposition, even of half an hour, now for eight years. His color is of late years much improved; but it is not nearly so high as when he used animal food.

I cannot help noticing a fact which occurred to the second of these children, the girl of thirteen. It is so trifling and common an occurrence, that nothing but the inference to which it obviously leads can justify the mention of it. But we are really apt to overlook, by attempting to think too deeply, the just consequences of what we are seeing every hour.

In this child then, in the spring of the year 1814, a nail came off one of the fingers. There was no accident; but it exfoliated, and, in course of time, was reproduced. Of course, this was not unattended with pain and suffering.

Now what happens on the surface, we must, of necessity, suppose may happen in any other part of the body. A part may have naturally imperfect powers of conservation. It may, therefore, perish, and be reproduced. This would be a disease; and, further, it would happen in defiance of any regimen or any method of treatment whatever. Was it some such event as this that caused the derangement of health which occurred in Case III., mentioned at p. 165?

CASE V.

Pulmonary Consumption.

If we except the first of the preceding cases, the facts which I have hitherto related are of young people, the general state of whose health rather indicated a feeble and defective constitu-

tion, than disease completely formed. They are not, as I apprehend the less valuable on that account; for as many diseases, in their perfect form, exclude all hopes of relief, it is the more important to attend with care to the symptoms which are the precursors of them. In those cases which are to follow, the symptoms of disease, for the most part, were more definite and strongly marked.

The difficulty of an investigation, such as is the object of this work, is greatly increased by the endless varieties of the human constitution, which produces a corresponding variety in the symptoms and progress of diseases. If, for example, I cite in evidence of the justness of my own conclusions an instance of a patient with a large ulcerated cancer having lived four years, it may be answered that the same disease has continued a longer time in persons living according to the common fashion of the country. And it is indeed certain that this species of evidence can have little weight, except as applied to the particular case in question; the extent of the disease, the stage in which it was taken up, the habit of the patient, and other circumstances applicable to this case, and to no other, make the deductions from the duration of the disease either just or nugatory; and our reliance upon them depends more upon our opinion of the judgment of the observer than upon the fact itself.

The same variety makes it almost, if not quite, impossible to fix upon certain and definite pathognomic signs of diseases, and more particularly in their early stages. But if these diseases are such as to afford very slight hopes of success to any method of treatment whatever in their more advanced and exquisite form, it is more especially incumbent on us to observe attentively their incipient stages, and to attempt to arrest them at this period.

Pulmonary consumption is such a disease. As it is, when arrived at a certain stage, necessarily fatal, this stage should be regarded as the extreme effect of the morbific causes applied to the body,

These extreme effects, when they are such as commonly precede dissolution at no very remote period, it is in vain to expect to remove by the removal of the remote causes of disease. In such cases the vitality of the body is radically impaired, and the powers of restoration are destroyed. This I apprehend to be universally true, whatever is the form of the disease; though the signs of this impaired vitality may be highly diversified, and in some cases may be hardly cognizable by the senses.

In conformity with this doctrine, it is incumbent upon me to acknowledge that in every case of pulmonary consumption which I have deemed a confirmed case, death has ensued, notwithstanding the most exact attention to regimen upon the principles I have laid down. In some, the benefit for a time, even for three or four months, was so striking as to give great hopes that the patients would receive a cure. But new symptoms, which it is needless to relate, supervened; and the issue was as I have said. It is right, however, and indeed it is necessary to add that none of these patients lived a twelvemonth. They were therefore very far gone before they came under my care. It by no means follows, then, that the same fatal issue would have taken place had they been treated at an earlier period.

I think it right also to acknowledge some change of sentiments with regard to symptoms, from what I have expressed in my Inquiry into the Origin of Constitutional Diseases. With the general doctrine which I have there maintained, that consumption is a constitutional disease of the whole body, and not a local disease confined to the lungs, and that the symptoms indicate the system to be under the influence of a constant and preternatural stimulation, I continue to be contented; and the more so, as it has been approved by enlightened men. But I have said (p. 137 of that work) that the symptoms of increased fever, and highly rapid pulse toward the close of the disease, is an index that the vitality of the body or sensorial power is not destroyed at this period. I suspect, however, that this is a mistaken view; and that, in particular, a pulse habitually raised much beyond its natural standard of rapidity, must be deemed an index of vital powers impaired, or nearly destroyed. It is certain that in this case no diet, however anti-stimulant, will bring the pulse down to its natural standard.

There is often much difficulty in recognizing pulmonary consumption in its earlier stages; and at this period, the subjects of this disease are so little aware of their danger, that they are too often on the verge of the grave before they think themselves seriously ill. This renders it difficult to show that regimen possesses even a preventive power over this disease. The most convincing argument in its favor is that, under the regimen of vegetables and pure water, the chest takes a more perfect and expanded form. A contracted chest is the strongest of all the external signs of a consumptive tendency. If it become expanded, the pulmonary circulation must become more

strong and full, in which, in most, perhaps in all, cases of consumption, there is a radical and constitutional weakness. There are likewise strong indications that this weakness is not confined to the pulmonary circulation, but that it pervades the whole arterial system; as is obvious from the general frame of body of those who are predisposed to the disease, and might be illustrated by a more particular examination of the symptoms.

But as the pulmonary consumption, like the cancer and other chronical diseases, which prove ultimately fatal, is subject to great variety in respect to the violence of its symptoms, and the length of its duration, opportunities can be of no rare occurrence, in which the disease may be so strongly marked as to admit of little doubt with regard to its nature, and to be at the same time in so early a stage as to afford a rational prospect of arresting its progress. Such a case is the following, the subject of which was a young woman under my own roof, which will, I hope, be considered as affording very satisfactory evidence on the subject.

September the 8th, 1813.—M. W., aged about thirty-three, had lived in my family some years as a female servant. She came to me when about twenty, and seemed to have no particular delicacy or defect of constitution. She was subject, however, to convulsive affections of the nature of hysteria. On the decline of the convulsions, I generally observed a degree of tension and soreness of the abdomen, and I therefore gave her aperient medicines, and she used soon to be well again. She was also subject to cough occasionally.

She came with my family to town, in 1803. She used the distilled water for her tea, and in other liquids, but did not put herself under any restraint as to fermented liquors. However, she continued to enjoy pretty good health, as she said, better in London than she had done in the country.

Toward the end of 1807, there appeared in this young woman strong signs of failing health. She lost her color, and looked wretchedly, though there appeared no fixed or determinate complaint. The appetite failed, and the muscular strength was impaired. I advised her to adhere strictly and solely to the pure water, and to renounce animal food. She excused herself on the plea that she could eat so little; that this small quantity therefore could not hurt her. But continuing to look extremely ill, she promised to go entirely without it every second day; and I believe that she conformed in some degree to this rule for about six months.

In November, 1808, she became extremely ill, so as to ex-

cite apprehensions for her life. She had frequent faintings, great pulsations and pains, sometimes of the head, sometimes of the feet; but the symptoms were irregular and anomalous, so as hardly to admit a definite appellation. After a confinement of a fortnight or more, the greater part of the time to her bed, she was gradually restored to her former state of health.

As she had no cough that was fixed (though she had frequent occasional cough), nor made any complaints about her chest, I had hitherto made no particular inquiry into the state of the organs of respiration. But during her convalescence from this illness, I examined into this point minutely. I found the breath so straitened that she was unable to expand the chest, or take in a full and deep inspiration. She was unable at night to lie but on one side. She could not go up stairs, without stopping for want of breath. I found, also, that during the last year she had been frequently troubled with pains of the side.

These symptoms, connected with her impaired health for a twelvemonth before, will, I should think, be acknowledged to be nearly infallible signs of approaching pulmonary consumption. I therefore from this moment insisted upon her entirely relinquishing the use of animal food, and, in all other respects, conforming strictly to the regimen I recommended. Though I had failed in my attempts to cure confirmed cases, I had hopes of relieving this. Here was no fixed or confirmed cough, nor any exquisite hectic fever; the pulse was accelerated after dinner, but in the morning it was nearly natural. The regimen was entered upon strictly in December, 1808.

During the year 1809, she enjoyed a somewhat improved general state of health. She was without any serious attack of illness (unless it were temporary), and her appetite for food improved. But she still looked almost cadaverously pale. All the symptoms of the affection of the chest remained also stationary—I mean, the inability to take a full inspiration; to ascend the stairs without panting and resting; to take exercise without stopping; she could still lie down only on one side.

During the far greater part of 1810, the same symptoms persevered. She often thought herself a good deal better, but these were only transient intervals. I myself, having suffered some severe disappointments in my hopes of giving relief, became disheartened, and she frequently talked of going into the country. But toward the very end of the year the relief

became decisive. She became able to draw in her breath fully and freely; to hold it for a time after the inspiration; and she recovered the power of lying on either side without inconvenience. This was (as I have said) at the close of the year 1810, when she had used the regimen strictly for two years, and had greatly lowered her diet half a year more.

The improvement continued during the year 1811, though the marks of disease continued strongly imprinted on her features. She became much more active. She, who the year before was unable to go up stairs without panting and stopping for breath, was able this year to run up like a young healthy person. Though she was in a lower state of health than previous to her illness, she was equal to all her duties as a domestic servant. Her appetite was quite re-established, and was become strong and hearty. She was still more pallid than formerly; but the cadaverous appearance, which shocked every one who saw her, daily wore off.

During 1812 she improved still more in her looks; and again became not void of the attractions of the sex. The health also became more firmly and regularly established. Her color, though not so strong as of a person in health, was about the same as before her illness. She was restored also to nearly the same state of constitution as before her illness. Her principal complaints were a return of the same convulsive paroxysms, to which she had been subject formerly; but these attacks were over in two or three days, and had no bad consequences.

Toward the end of September, 1812, she quitted her service rather abruptly, and went into the country. It appeared, in the sequel, that she was secretly pregnant; and she was in due season safely delivered. She now resumed the common habits of life; and I understood that in consequence her color quickly improved, and she became apparently more robust; but I have reason to think that there was no real amendment of the health. But having no opportunity of being correctly informed of her present situation, I must here close the account of the case.

I offer these facts with confidence, as convincing evidence that the symptoms of pulmonary consumption can be controlled by regimen, and its progress stopped. This is the case, in which the powers of life were the most impaired, of any in which this regimen has hitherto been applied with advantage.

November 29th, 1814.—I have lately been informed that

this young woman continues apparently in good health. I must observe, however, that no conclusions of any consequence can be drawn from this circumstance. Had she been for the two years that elapsed, since she left her place, in another service, living as servants commonly do, I have little doubt that the effect would have been apparent. But, in fact, she has been in place, not above three or four months of this time. For the remaining part of the time, she has lived with her parents, cottagers, in the country, and has been in very reduced circumstances. There can be no doubt, then, that she has used during this time little or no animal food. It may be said, therefore, that her regimen has, in part, been continued, though in an imperfect and irregular manner, during the last two years.

CASE VI.

Asthma.

November, 1814.—I shall in this place introduce the case of a gentleman who has eminently distinguished himself by his exertions to diffuse the knowledge of the great benefit to be obtained from the strict attention to regimen, both through the medium of the press, and by exhibiting to all, who chose to apply, a beautiful family of children bred up, with regard to diet, on the principles I have labored to establish. These exertions were wholly disinterested on his part; and though they may have exposed him to the ridicule or the obloquy of the selfish or supercilious pretenders to exclusive knowledge, will ever, in the estimation of true philanthropy, do equal honor to his head and his heart, and entitle him to the noble distinction of a benefactor of mankind. He has already given a statement of the facts regarding his own disease, as they stood when I published my "Reports on Cancer," that is to say, in the beginning of 1809. In his own publication, entitled "The Return to Nature," he contented himself without referring to this statement. But as several unforeseen circumstances have occurred since that time, I have thought it right to bring forward at one view the whole chain of facts. In framing this statement, I shall take as my guide several letters, which are before me, some oral communications, and a few personal observations.

T. F. Newton, Esq., aged 48, became subject to asthmatic attacks at a very early period of life. The first seizure was when he was seven years old, in one of the islands of the West Indies. Soon afterward, he removed to England, and suffered only occasionally from this cause till he went to Oxford. During the whole time that he was at Christ Church College, he had repeated attacks of it, and in the night, at least, it was constantly upon him; in so much that he looked with pleasure to his return to the West Indies, in hopes of relief from the voyage. But in this he was disappointed, as from that period he was more affected, as well in the West Indian Islands as in North America, in various parts of the continent of Europe, and afterward in England.

The attacks usually continued from one week to three, during which he could not lie down in his bed, but was obliged, night after night, to rest inclined upon a table. He was not without considerable intervals of ease, and had occasionally a respite of some months; but it very seldom extended beyond three; and even during these intervals there was a constant sensation of uneasiness at the breast upon inspiration.

During the years 1804 and 1805, Mr. Newton lived in Herefordshire, and he was never more indisposed than during those years. The complaint seemed very much to increase upon him; especially in the violence of the spasmodic motion, with which, during the paroxysms, the head was precipitated to the table, on which he used to lean, whether during the day or the night. Sometimes for a week together he did not venture to lie down in bed, from apprehension of suffocation; and I am persuaded, from my own observations, that no example of this disease, not in its very last stages, could be more severe, attended with more stricture on the respiration, and turgescence about the head.

In this last year (1805), my relation, Dr. Blount, of Hereford, put into his hands my book on the Origin of Constitutional Diseases, and recommended him to adopt the use of distilled instead of common water. He never was a greater sufferer than at the time he made this change; but he found it to be immediately beneficial. The general state of health improved, and during the first two years and a half he had but twice any returns of asthma. These attacks were sharp, but of very short duration.

Mr. Newton was fully convinced that this attention alone would be enough to preserve his health; and hoped that in time the disposition to asthma would, without any other pre-

caution, wear off. But I had seen enough of the fallacy of these expectations to indulge in such hopes. I assured him repeatedly that unless he attended strictly to the whole of the regimen he would be ultimately disappointed.

Therefore, at length, after many scruples, and no small apprehension of injury, he resolved to join to his attention to the fluids a strict vegetable regimen. The immediate motive to this was, I believe, a respect and confidence in my opinion; though I apprehend that a feeling and consciousness that his health was not in a firm state concurred in determining his resolution. He began greatly to diminish the quantity of animal food toward the close of 1807, and became very strict about the beginning of the following summer (1808).

For three years and upward after this, Mr. Newton had very little asthma. Three or four paroxysms came on which were, for the time they lasted, as severe as any he ever suffered; but they passed off very quickly, causing a confinement of two or three days only.

But the health was at this time in a very precarious and even critical state. The pulse was commonly very rapid, sometimes rising even to 120 strokes in the minute. There was frequently great quickness of respiration, with copious mucous defluxions; and through the first and second winters he kept himself principally within doors, being afraid to expose himself to the cold, and particularly to the damps of the evening. But though often indisposed, and in a valetudinary condition, the health gradually and progressively amended under the vegetable regimen.

Toward the end of May, 1811, Mr. Newton began to feel indisposed; the lungs became loaded with phlegm; there was a sensation of heaviness about the head, and excessive itching about the eyes. Going up stairs caused great breathliness and uneasiness. After two or three uneasy nights he experienced a very severe attack of asthma, which began on the 2d of June. The head was drawn spasmodically forward, as in the former paroxysms, the pulse was so quick as scarcely to be counted, the feet swelled, and at night there was a disposition to idle talking, which must be deemed a species of mild delirium, though he was in a measure conscious of it. The stricture on the breath was great, but the respiration was more free than in the former severe fits. He could not, however, enter a bed for six nights. Then the paroxysm appeared to be fast declining. But it returned again with nearly as much violence as at first. For the greater part of another fortnight he passed his nights upright

in a chair, or leaning on a pillow placed on a table. The pulse continued accelerated, and the ankles swelled, the eyes inflamed, and the whole habit appeared extremely turgescent. Walking ten yards caused much fatigue, and brought on shortness of breath. But about the 21st or 22d of the month the expectoration became free and copious, a mild diarrhœa supervened, and all the symptoms subsided. He continued in a weak but convalescent state for a month or six weeks, when he was restored to health.

An attack of this kind, after having submitted to the most rigid abstemiousness upward of three years, was enough to shake the confidence of any man who had not the most firm conviction that he was doing the only thing that gave him a chance of ever enjoying health. But Mr. Newton was conscious of having received great benefit from his abstinence. He argued also from the state of his children, and said "That regimen must be the best which produces such health and strength as are visible in them." He therefore persevered in his habits with unabated zeal, and I am happy to say he has received the due reward of his confidence and perseverance; for though he appeared thin and meagre, he had for ten months very good health; and, as I heard him say, now for the first time during twenty years he passed a winter wholly free from his old disorder. He was not only without asthmatic paroxysms, but without any material difficulty of respiration.

But the following June, 1812, brought back at the very same period a relapse of the disorder. The general features of the paroxysm very nearly resembled that of the preceding year, and its duration was about as long. But it was by no means so violent at its access, and he recovered from it with much more facility. As soon as the disease had passed through its usual stages, he felt well. It was also preceded by little or no indisposition. During this attack the pulse was much accelerated; at one time it mounted to 118 strokes in the minute, and was rather strong and full.

Another respite as perfect as the former succeeded, in which for eleven months Mr. Newton enjoyed perfectly good health, free from asthma and other serious illness; and he adhered to his regimen with greater strictness, if possible, than ever. Often has he made his dinner on a little fruit, dried raisins, bread, and three or four potatoes; and upon this strict course of abstinence has found no defect of strength or nutrition. On the contrary, the symptoms with which he has been occasionally affected have been accompanied with marks of plenitude and oppression.

The same month of June, both in 1813 and 1814, and very nearly the same day, brought back the asthmatic paroxysms. But that of 1813 was very mild. Though the disease hung upon him for a month, the confinement to the house was not above five days. He had again an interval of eleven months of very good health. In the paroxysm of 1814 I did not see him, Mr. Newton having quitted London. But from the account he sent me of it, it was more severe than during either of the two former years. It lasted also five weeks. Since that time he has been, and is, comfortable in health.

I would observe, as a point of pathology, that the swelling of the legs in this case has not been an anasarcous or dropsical swelling. The whole tumefaction has been tense and elastic, not yielding or pitting.

It is necessary, in order to form a fair judgment of this case, to pass in review its most striking points. They are shortly these. Mr. Newton began to use distilled water in 1805, and adopted the complete regimen in 1808. From this period of 1805 to June, 1811, he had, upon the whole, very little asthma, hardly a singular regular fit of any duration; and we were persuaded that the disease was in a manner eradicated. But to our disappointment, and in a certain degree to our mortification, there has been, now for four years, an annual paroxysm, declining upon the whole, but not quite uniformly, in severity. It has regularly come on in the month of June, which whole month it occupies, and encroaches a little upon July. Such is its present habit, and such we may suppose that for the present it will continue. I shall briefly attempt to explain these phenomena.

First, it must be allowed, that the great freedom from asthma, for near six years, was not entirely due to his regimen. Diseases we know will change their forms. Asthma will end in consumption, hydrothorax, dropsy, disease of the heart, or other fatal maladies. It is obvious from the delicacy of Mr. Newton's frame, and the great severity of his disease, that he is not formed, under common habits, for long life. I am therefore satisfied that there was, about the time that Mr. Newton adopted a change of habit, some secret constitutional change which concurred with his diet to keep off the asthmatic paroxysms.

The records of medicine are full of such examples, which, gave occasion to much fallacy and false experience. I shall mention one which lately came under my own observation. An elderly gentlewoman was seized, in the month of June, 1814,

with a paralytic disorder. She informed me that she had been subject for a great many winters to a cough, attended with copious expectoration. But during the preceding winter, though the most rigid that had been experienced for many years, she was wholly without her cough. It would be easy to collect numerous analogous facts, which indicate a change to have taken place in the habits of the constitution, unaccompanied by active disease, or any evident external signs.

Now, secondly, we have seen in the first case which has been related that gout, which had been many years latent, and, as it were, dormant in the constitution, became active and evident, producing its proper symptoms of pains and lameness, as the first effect of the vegetable regimen. I am, therefore, further satisfied that in Mr. Newton's case something similar, though less obvious, took place, and that the first effect of the vegetable regimen was to re-establish the asthmatic paroxysms. Whatever is a person's habitual disease, is to that person, relatively, a state of health; and such disease cannot disappear without an evidently sufficient cause, without a suspicion that it will be followed by something worse. If therefore the hypothesis be just, it must follow that this re-establishment of the regular asthmatic paroxysms was the sign of an improved state of the constitution.

If it be asked, finally, what this gentleman has really gained by his strict course of temperance and abstinence, I answer that, 1st. Life has been prolonged, and that, probably, several years. If I am right in supposing that there was a constitutional change about the year 1805, we may calculate that there have been five or six years, at least, already gained. It is impossible, however, to demonstrate this, and therefore I shall not dwell upon it. 2d. Instead of being an habitual invalid, Mr. Newton has enjoyed several years of relative comfort and good health, using much exercise, and walking occasionally several miles in the day. His frame is delicate; his pulse habitually too rapid. He furnishes another example of its being impossible to reduce the pulse to its natural standard by regimen. 3d. Instead of being the constant victim of asthma, rarely escaping a paroxysm for three months, Mr. Newton has had but one annual paroxysm for the last four years, besides the interval of almost total cessation for five previously. Those advantages he deems an abundant compensation for all the deprivations which sensualists may suppose he has imposed upon himself.

I cannot withhold offering in this place a conjecture with

regard to the regular recurrence of the asthmatic paroxysm at the same period of the year, which has occurred now for four successive years.

I suppose that it is allowed that the lungs themselves are the primary seat of the disease; and I will suppose further that the membrane investing the bronchiæ and the air vesicles of the lungs is the part immediately affected. It must be presumed that this membrane is liable to the same sort of diseases as the other membranes of the bod ; but the consequences will depend upon the particular situation and functions of the part.

Now among other affections of membranes there is one which, though not very obvious, is not often adverted to; it is that there takes place a species of exfoliation or sloughing; the membrane is destroyed, it is thrown off, and is regenerated. This whole process, of course, takes up some time, during which there must, of necessity, be a derangement of the functions, and a suffering of the individual.

We see this phenomenon on the external surface of the body; the epidermis peels off; and occasionally preserves its continuity, and the form of the part which it invested. It comes off the hand or foot like a glove or stocking. At other times it separates in flakes, which is a daily occurrence. But the intestinal evacuations give us more frequent and incontestible evidence of the same fact. Every one must have observed, occasionally, membranes evacuated preserving the form of the intestine. It is much more common at the close of a diarrhœa to observe a number of flakes, or films, floating in the liquid matter of the stool. This is commonly the solution and termination of the disease. These films can be nothing else than an exfoliation of the internal or mucous membrane of the intestine.

It can hardly be doubted that the stomach itself is subject to a similar affection, though it is not possible to ascertain the fact by ocular proof. A person is seized with a constant vomiting, rejecting every thing which is taken into it, which lasts perhaps a month or six weeks. It will then cease, as it were, spontaneously, and be no more heard of. What rational account can be given of such a phenomenon, unless it be what I have often suspected to be the fact, that the internal coat of the stomach exfoliates, and is regenerated?

I have had reason to suspect that the bladder is occasionally subject to a similar affection; and, in general, that none of the mucous surfaces are exempt from it.

We may readily transfer these observations to the mucous membrane lining the bronchiæ. It gives, I think, a more ra-

tional account of most of the phenomena of the asthmatic paroxysms than any pretended spasm upon the vessels or membranes. It accounts also, not inaptly, for the regular return of the disease. We know that the vital powers of all newly formed parts are weak. It is therefore easily conceivable that, under whatever circumstances the membrane has once perished and been regenerated, the same phenomena will recur under similar circumstances. It may be supposed to have received the same sort or quantity of vital power, as the horns of the stag, or the skin of the snake. It is enough, however, to have thrown out the idea.

As Mr. Newton has himself informed the public that he has introduced this regimen, which I recommend to the valetudinarians, as the regular habit of his family, and has at the same time announced the complete success of the experiment at the period of his publication, I need say no more than that he has continued to follow the same course now for nearly four more years, and that the result has continued to be completely satisfactory. More perfect and even robust health was never displayed among any set of young people. The female head of the family, to whose spirit, independence, and intelligence much of the emancipation from the yoke of vulgar and destructive prejudices must be ascribed, enjoys an activity of mind and body rarely equaled in her sex. Our feeble and delicate countrywomen will perhaps be shocked when they learn that this lady, bred up in habits as delicate and luxurious as the most sensitive of themselves, has been enabled, during the course of this present year, to walk thirty miles in one day. She has a high color, and is full of flesh. Such are the real mischiefs, and such the debility, which are the consequences of a vegetable regimen, when used by persons of good health and of sound constitutions.

Since the publication of Mr. Newton's work, another child has been added to his family, who is now three years old, and who has been dieted on the same plan. This child, like the others, is distinguished for health, vigor, and beauty.

Among this family of five children, there has been during eight years one example of an external disease. It was my wish and intention to give a detail of the circumstances; but I am prevented by injunctions with which I feel it necessary to comply. I must content myself, therefore, with saying that it continued some months, and then ceased. During its course, the general health continued perfect. We order regimen, as was properly remarked by a professional gentleman, who was a

witness of the facts, for the sake of the general health. As this was unaffected, during the course of this disease, it effected whatever could be reasonably expected from it.

The remaining children have suffered nothing but the most trifling ephemeral attacks, hardly worth mentioning; real illness, such as to require confinement, they have never suffered. The slight affections which have occurred, have been just sufficient to prove that, had they been treated like other children, they would have had no exemption from the common lot.

CASE VII.

Cough, Difficult Breathing, and General Debility.

22d November, 1814.—I am acquainted with this case only from the relation of the patient, the disease having existed before I became acquainted with her. It is shortly as follows:

M——, a female servant of Mr. Newton's, about thirty-six years old, had a very indifferent state of health; she was subject to very bad coughs, and had twice attacks, which, from the description given of them, I judge to have been a kind of *cynanche laryngea*. She had great stricture and difficulty of respiration, and coughed with a hoarse and croupy noise, the perspiration at the same time running off her forehead in torrents. This must have been about the years 1804 or 1805.

This woman, living with and being the nurse-maid to Mr. Newton's children, was easily persuaded to conform to their habits; and the consequence has been very salutary to herself. The disposition to catarrh is removed; nor has she again had any of the apparently croupy attacks. The general health also very much improved, and has indeed been perfectly good.

She lost neither flesh nor color from leaving off animal food, and the strength was unimpaired. She is a woman who looks worn, and would pass for several years older than she really is. But this appearance was formed wholly before she adopted her new habits.

CASE VIII.

Asthma, Debility, and Loss of Flesh.

Sept. 16, 1813.—Mr. P——, a gentleman resident in London, aged thirty-four, had an attack, which was called pleuritic, twelve or fourteen years ago. After this illness, he found himself subject to fits of asthma. The disease increased gradually upon him, and during the years 1806 and 1807, its severity was so great as to render his life miserable. During these years he put himself under the care of Dr. Bree; but the violence of the disorder continued unabated. In the beginning of 1808 he consulted me, and consented to give a fair trial to the regimen I advise in chronic diseases.

I found him thin and pallid, and with the appearance of languor. The bowels were habitually bound, and the evacuations foul and dark. Besides his asthma, he complained of frequent pains of the side. But the pulse was not accelerated. He began his regimen in February, 1808.

During the first ten months, this gentleman experienced no alleviation of his disease. It was to this case I alluded in my "Reports on Cancer," p. 184, in these words: "But in a third, nine complete months have elapsed without the smallest apparent alleviation of the symptoms." A large portion of this time was spent under the paroxysms of this painful disease, breathing with much difficulty, unable to lie down in bed, and at the height of the paroxysm, the legs swelled. This last observation was made by Dr. Frampton, senior physician of the London Hospital, who, on one occasion, saw him for me.

At the end of ten months, he began to receive sensible benefit, and he enjoyed an interval of eight months of improved health, and was free from asthma. He then suffered a relapse of considerable severity; the asthma returned, so that for a fortnight, he was unable to get into a bed; and it hung upon him in a less degree for six weeks or two months longer. This relapse came on when he was a short time at Cambridge; but the connection between it and the change of situation was not at that time observed. During the remainder of the year, he had some dyspnœa daily, but nothing that amounted to asthma, or that prevented him from lying comfortably in bed the whole night.

In the beginning of 1810 he had another asthmatic paroxysm, but it was very slight, and of short duration. After this time

the health greatly improved. During the remainder of the year he was free from asthma. He rose in the morning with some thickness of breathing, but it wore off in two or three hours.

The year 1811 was also passed without any asthmatic paroxysm. He was often, from his sensations, under apprehensions that it would return, but it never did so in fact. The approaches to the disease speedily disappeared by an easy and copious expectoration. About this time smoking of stramonium was extolled as a cure of the asthma. Mr. P—— used it, and found from it considerable advantage. It relieved the breath, and promoted the expectoration. It is obvious, however, that in these circumstances it is hardly possible to determine what was really gained by this practice.

During these last two years he was very thin, and the countenance, which was naturally pallid, became still more so, with the marks of a diseased habit strongly impressed upon it. But in 1812, the appearance much improved, the color became stronger, the expression of languor vanished from the face, and he was sensible of a considerable increase both of general health and of bodily strength. The tendency to asthma appeared very nearly, if not wholly conquered. Under these circumstances he went on a party of pleasure, at the end of the spring, to the sea side.

He had not, however, left London two days before his asthma returned with all its attendant circumstances. The breathing become laborious, and for a fortnight, nearly, he was unable to lie down in his bed. He returned to London with the asthma still upon him; in town it quickly declined, and left him.

Since that time, now fifteen months, he has had no return of asthmatic paroxysm. In the spring of 1813, he had some thickness of breathing, which was an approach toward his old disease, but it did not force him to quit his bed, or to raise himself from a horizontal posture. The general state of health is so much improved, that from being an habitual and almost a desperate invalid, he is habitually and permanently well.

It is perfectly clear that the immediate exciting cause of the asthmatic paroxysm which took place in 1812 (the only circumstance like a serious return of the disease for the space of nearly four years), was the removal out of the atmosphere of London to that of the sea coast. Now the impurities of the London atmosphere must be reckoned an unnatural and morbid irritation to the surface of the lungs, and that this irritation causes no uneasiness can be accounted for only by the power of habit. In consequence of this habit, a harmony is established between

the different surfaces or membranes of the body, and the substances which are habitually applied to them. Uneasiness is occasioned when this harmony is disturbed by a change of the properties of the substances applied. We may see, therefore, from this example, how inconsequently we reason when we suppose that a change is unwholesome or improper because it may at first excite uneasy sensation.

This may be applied to the food and the drink we apply to the stomach, as much as to the air applied to the lungs. The very change may excite uneasy feeling, though the new habit may be much more salubrious than the old one.

If it be asked what proof the case just related affords of the utility of the distilled water, it must be granted that it affords none which is direct, for there was certainly no perceptible advantage from the first change of regimen. But the fact of the cure (for such it may very fairly be called) is a sufficient proof of its utility, since there can be no doubt that vegetable diet alone would not have effected it. Mr. P. had received the common advice, to be sparing of vegetables, and to avoid all fruit, salads, etc. I ventured to give the very opposite advice to this, and no detriment whatever has been observed from the use of matters of this kind.

16th December, 1814.—I have great pleasure in stating that this gentleman continues in greatly improved health, and without asthma. It may be said that, according to all appearance, this most painful and dangerous disease has, in this instance, been fairly subdued. He is still affected, occasionally, with pains of the side, and the bowels are not quite free. But the health is, upon the whole, good, and the general appearance very much improved.

CASE IX.

Paralysis.

23d September, 1813.—Mrs. O——, a married lady, aged about forty-seven, of a plethoric habit of body, was attacked in the spring of 1809 with a palsy of the left eye and cheek. She could not close the eyelids of that side, and the mouth was drawn considerably awry on the opposite side. She had also frequent vertigo, so that she was under continual apprehensions

of a fresh attack. She was bled, cupped, and frequently purged copiously, and put upon a vegetable diet. But by this plan she felt her strength impaired, but the disease showed no disposition to yield. The eyes were so susceptible of the light that she was obliged to wear a shade. Besides this, the spirits were so low that she was the prey to a constant melancholy. The muscular strength was entire.

As she found no benefit from low living, she had resumed the common diet. But, at my suggestion, she returned to her vegetable regimen in the summer of that year, and she united with it the use of distilled water. By this method she felt no sinking of the strength. In about two months she began to regain some power of closing the eyelids, and in a twelvemonth it was completely restored. But during the whole of the first year she continued in a wretched state of low spirits, looked extremely ill, and continued under constant apprehensions of a fresh attack.

After this time the amendment of the general health became more evident. She regained her looks, from having been pallid she became florid, and was able to amuse herself and to attend to her domestic occupations. The painful impression of light upon the sensorium was removed, so that the shade over her eyes was no longer necessary, the vertigo in a great measure disappeared, and her great lowness of spirits was removed. But the affection of the sensorium was not removed, it was only alleviated. Frequent pains of the head recurred, for which she had often recourse to cupping.

And in this condition she has continued nearly ever since, the general health rather improving than otherwise, enjoying a state that is comparatively very comfortable, though by no means restored to that in which she was previous to the attack.

This lady has neither lost flesh nor color by abstaining from animal food. But her muscular strength is certainly diminished. It is, however, to be considered that she was probably morbidly strong at the time of this attack. It is, indeed, evident that a person may have too much strength, as well as too little. In such cases, to have this unnatural and morbid strength removed, cannot, with any appearance of reason, be deemed injurious.

What I wish particularly to call the attention of the reader to, in the present case, is the phenomena of the eye, since they afford an ocular demonstration of the effect of the septic poison of water on the system, and of the consequent beneficial effects of the distilled water. Palsy is one of the diseases which I

have seen ascribed to the sudden discontinuance of animal food, by writers who either reason at random, or who draw hasty inferences from a partial view of facts. The charge is so obviously groundless, that it is not worth while to enter into a formal refutation of it. Nothing, however, is more certain than that palsies have taken place in persons who were living on a vegetable diet. Besides the common experience of the poor, who can claim no exemption from these diseases, direct evidence has been given of this fact, by persons who have adopted a diet of this kind. For example, Dr. Desaguliers is recorded to have had a paralytic attack, after he had used a vegetable diet for ten months. And I have seen myself, in the course of the present year (1813), a woman affected very nearly as the subject of the present case, that is to say, with the cheek paralytic, and unable to close the eyelids of the same side. This woman, from the necessity of her circumstances, did not use animal food above once a week; and her palsy therefore could, with no degree of probability, be ascribed to it. We must look then to other causes of these diseases.

17th December, 1814.—I understand that this lady continues in improved health; but I have not been able to see her for some months.

CASE X.

Tumor of the Arm.

23d November, 1814.—A medical gentleman, aged thirty-seven, has had for a number of years a tumor on one of his fore-arms, which had caused great uneasiness. It was at first not larger than a pin's head, but gradually, in the course of years, has increased to the size of a small pea, and was so exquisitely painful that he could not bear it to be touched. There was also much shooting, and other uneasiness through it, independent of external violence. It appeared after he had grown up, but while he was a very young man.

This gentleman adopted this regimen, but from other motives, in the year 1809. His health improved very greatly under it; but for the whole first year, there was no sensible change in the sensations of the tumor. It was equally sensible to the touch, and had the same shooting pains. But at the expiration

of the twelvemonth, or thereabouts, it became greatly soothed, and finally it ceased to give pain, except very trifling, occasionally, and it became much less tender to the touch.

In its appearance, this little tumor remains unchanged. He thinks it has increased a little in size; but so little, that perhaps he is mistaken. It is still no larger than a pea.

Though this little highly painful and irritable tumor is well known to the surgeons, and occasionally extirpated, I cannot find that they give it any specific name, which must be my apology for the general appellation given to this case.

This gentleman adopted the regimen for the sake of his health, which had been very considerably deranged for some years. I shall only say, in general, that it has very much improved in consequence. But I do not think the symptoms sufficiently definite to make it proper to relate them minutely.

On this subject, I have heard him assert that for two years before he changed his diet, his spirits were so low that he was unable to smile. It is no new observation, that vegetable diet has been useful in melancholic disorders. A case is given by Dr. Lobb, of a gouty pain of the stomach, with flatulency and melancholia, cured by vegetable diet. The disorder yielded in a few months, but the regimen had been continued fifteen years.

He has also been in the habit of illustrating the superiority of this regimen by saying, that the difference of comfort, experienced between it and the common mode of life, is quite as great as what persons experience between the common mode of life and directly riotous living. At the same time he acknowledges that, for the pleasure of the palate, the common mode of living bears the palm. It may however be doubted whether this be not the mere consequence of habit.

SOME REMARKS ON SCROFULA.

The observations I have been enabled to make on this disease are not numerous. Diseases termed scrofulous are for the most part external, and fall principally under the care of surgeons. The more common form of the disease, marked by tumors or ulcers about the throat, however disagreeable or tormenting, is

not a dangerous complaint. The stamina in such a disease may be strong; the disease often subsides entirely; and the patient may live healthy for many years. On this account, such subjects can bear animal food and fermented liquors; and the current of prejudice is too strong in favor of this practice to afford any chance at present of a successful resistance to it. Of the more serious affections, terminating in death or mutilation, and which are the fit objects of this regimen, I have not obtained any proper examples.

Scrofula frequently takes place in children who are confined nearly to vegetable food. It is, therefore, one of the evils charged by superficial observers upon this species of food. In order not to withhold from my reader some of the most confident assertions which I have met with on this subject, I shall here insert an extract from a work of Dr. Beddoes, which, I suspect, has had no small influence in forming the present state of public opinion.

"When children are fed," says Dr. Beddoes, "on vegetables, with little or no admixture of animal food, they die in great numbers of scrofulous affections. In the families of the poor, who cannot command better aliment, this is one principal cause of mortality; and in the families of the rich, who in consequence of the erroneous medical notions, sometimes *will not* allow a proper proportion of animal food, scrofula often takes place (though in a slighter degree, for it is checked by other circumstances), and the foundation of consumption is laid. There are (as a writer of superior merit on the king's evil observes), among the higher classes, some who keep their children to the fifth, or even the seventh year, upon a strict vegetable and milk diet, believing that they thus render the constitution signal service. I have, however, frequently pointed out to parents, whom I have heard boasting of the advantages of this management, either an enlarged abdomen, or some other sign of an incipient scrofulous indisposition, which has convinced them that their children were far from being so healthy as they supposed. In our temperate latitudes, a diet of this kind is certainly not proper after the age of two years. Where a feeble constitution coincides with hereditary disposition to scrofula, or rickets, tender meat and soups are particularly serviceable. Dr. Weikard perfectly agrees with me in opinion. He observes, that children brought up according to the fashion of the great (without animal food) are particularly liable to rickets. Dr. Kuempf attests, that by animal diet he has restored a great variety of children, who had been dreadfully reduced by

water-gruel, milk, and vegetables. Dr. Vogel also asserts, that animal food is falsely held to be a cause of atrophy, and that children, from whom such food is withheld, oftener fall into an atrophy than those to whom it is allowed. (*C. G. T. Kortum de vitus scrophulosis.* I. 3. 50.) These testimonies may be received with fuller assurance, because in other respects the authors are strongly disposed in favor of that theory, which still not unfrequently deludes English parents with the false hope of rendering the blood of their children pure, and their humors mild, by millet pudding, and by other preparations of vegetable substances in over-proportion."

It is no wonder that, with such strong assertions as these staring them in the face, parents should be terrified at the thoughts of confining their children to vegetable food; and should apprehend that they were inflicting an irreparable injury on the dearest objects of their affection. These are the doctrines, which, coming from what has been thought the best authority, pass from mouth to mouth, and have excited such an hostility to simple nutriment. It is therefore incumbent on me to examine a little the validity of this accusation.

"When children are fed on vegetables, with little or no admixture of animal food, they die in great numbers of scrofulous affections." It is difficult to disprove assertions to which we cannot attach definite ideas. Scrofulous affections are commonly external disorders, unattended with danger. What diseases Dr. Beddoes understood by this term, is not very clear; I will suppose, however, fatal chronical diseases attended with ulcerations, or abscesses, as lumbar abscess, psoas abscess, white swelling, etc.

Now, Dr. Watt has given us (annexed to his treatise on chincough) a register of all the deaths of children to the age of ten years at Glasgow, for thirty years. The diseases are arranged under the following heads: Small-pox, Measles, Chincough, Stopping, Water in the Head, Teething, Bowelhives, Still-born. I cannot find here a single head under which these fatal "scrofulous affections" can be properly included. Though, certainly, some such diseases must in thirty years have occurred, and even not unfrequently, and we may therefore allow that these bills are defective, yet it is equally evident that such cases must have formed a small proportion indeed of the mass of mortality in childhood.

The London bills of mortality give as little countenance to this assertion. Let us take a single year: it shall be the first that offers, namely, the years 1795 and 1796, which are the

first found in Dr. Willan's "Reports on the diseases of London." The whole mortality of London, from the 22d of December, 1795, to the 17th of December, 1796, stated in the bills, is 18,664.* Of these there are stated to have died of abscess, twenty-one; sores, four; evil, five; ulcers, two; rickets, one: total, thirty-three. These are the only heads, out of this great mass of mortality, under which fatal "scrofulous affections" can be arranged. Of this whole mortality of London, two thirds of the deaths take place before sixteen years of age. We see, therefore, how small a proportion of the diseases of early life are fatal "scrofulous affections."

I look in vain for a private authority for the support for this assertion. Dr. Woolcombe has given a catalogue of nearly 5000 patients, admitted at the Plymouth public dispensary, for near seven years. In this long catalogue there are found, arthropuosis, one; hydrarthus, ten; rachitis, nineteen; scrofula, forty-one. Of these cases, one under the head of rachitis is marked as having been fatal. If it were true, that "great numbers" of children die of this sort of disorders, we should certainly have some vestiges of the fact, either in public or in private records.

In opposition to the accusation of vegetable diet causing tumefaction of the abdomen, I must testify that, twice in my own family, I have seen such swellings disappear under a vegetable regimen, which had been formed under a diet of animal food. I must refer to pp. 161 and 166 of this work. These facts I cannot but regard as entitled to infinitely more attention than any observations on the poor, who are addicted to many depraved habits, and exposed to complicated causes of disease.

We may judge from these facts, how idle and ill grounded these apprehensions really are. But the general charge of vegetable diet causing scrofulous disease must be allowed so much weight, as to amount to a demonstration, that it has often been observed under such a diet; and, in consequence, that such a diet has of itself no tendency to cure it. In the last four years, several cases of glandular swellings have occurred to me at the general dispensary; and I have made particular inquiries into the mode of living of such children. In the majority they had animal food. In one child, of under

* In the same work, the total number of deaths, in the year 1796, is stated at 19,228. (See Willan on the diseases of London, p. 58.) There must be an error, therefore, in the number given above; but it does not affect the argument.

two years of age, with many swellings of this kind, the appetite for animal food was so strong that the mother thought it right to check it. In a few, there was hardly any animal food given, probably from poverty. These children appeared healthy; but in every case, except one, they had a considerable thirst upon them.

To those who think that animal food has the smallest tendency to prevent the appearance of glandular swellings, I recommend the consideration of the following facts taken from the mouth of a patient of this institution, on whom I observed these glandular swellings on each side of the neck, and was informed that they existed also under the armpits, and in the groins.

T. L., aged twenty-one, lived till he was fourteen years old with his father, the head servant or workman in the warehouse of a wholesale druggist. Being one of a large family living on servant's wages, their diet was principally vegetables; the family had commonly some meat on Sundays, but scarcely on any other day. Their drink was chiefly water. Under this manner of life he was without disease, but was not a strong hearty boy. At fourteen he was put apprentice to a goldsmith. Here he had meat daily, as much as he chose, for dinner; his drink was small beer, but he was allowed a little porter on Sundays. The consequence was that he improved considerably in strength and in appearance; and, as he expresses it, he thought himself becoming quite a hearty lad. This increased strength and apparently improved health lasted nearly two years. After that it began to decline. Though the diet continued unchanged, the strength diminished; and he is certain that, now at the age of twenty-one, he is not so strong as he was three years ago, at eighteen. He is not now able to raise weights which he could do then.

Besides this, mark well the sequel. During the second year of his living on the fuller diet, while he was flattering himself that he enjoyed so much better health, these tumors above mentioned first appeared upon him. And they have continued ever since, nearly as they are at present.

We see then, first, that though the strength may be increased by animal diet, yet the increased strength may not continue though the diet be continued. On the contrary, there is a sort of oscillation, the strength first rising and then sinking again. This is what is experienced by the trainers of boxers. A certain time is necessary to get these men into condition; but this condition cannot be maintained for many weeks together, though the

process by which it was formed is continued. The same is found to hold in the training of race horses and fighting cocks. Increasing the strength, then, is no proof of salubrity of diet.

Now let us suppose this young man had had these marks of scrofula upon him while he resided at home. It would most commonly have been ascribed to the poorness of his diet; the appearance of increased health and strength upon a fuller course of living would have been brought in support of this opinion; and it would have been probably said that if he had had the benefit of a good dinner of animal food, daily, these marks of scrofula would not have appeared. The facts, however, are in direct opposition to this supposition; for the signs of scrofula first appeared, as I have stated, when he was under the strongest influence of the apparently beneficial change introduced by the animal food.

With equal confidence has this writer enjoined the use of animal food to prevent consumption, as he would fain persuade us. He says, "In cases where habitual weakness or the history of the family gives reason to apprehend consumption, one of the most indispensable rules of preservation is *to use animal food freely*. There seems no limit to the quantity but the indications furnished by the palate, and the power of the digestive organs. More should not be given, more will not be taken than is relished." One can hardly help staring with astonishment at seeing such directions as these; when we see examples daily of young persons becoming consumptive who never went without animal food for a single day of their lives; and consider that such is the constant habit of this country, where consumption destroys its thousands and tens of thousands.

If the use of animal food were necessary in northern latitudes to prevent consumption, we should expect that where the people lived almost entirely upon such a diet, the disease would be unknown. Now the Indian tribes, visited by Mr. Hearne, live in this manner. They do not cultivate the earth. They subsist by hunting, and the scanty produce of spontaneous vegetation. But among these tribes consumption is common. Their diseases, Mr. Hearne informs us, are principally fluxes, scurvy, and consumption. But to return to my present subject.

Scrofula, as affecting the whole constitution, is to be considered, probably, as a disease of organic power. If a bone exfoliates, for example, or a membrane loses its proper structure, as the cornea of the eye, there was probably some original organic defect. But the more common phenomenon of glandular swellings and suppurations is attributed, probably with jus-

tice, to a vitiated state, or acrimony as it is called, of the lymph. It is to be considered that the lymph is not merely the exudation into the various cavities, which is reabsorbed, but the parts of the body which, being no longer fit to continue a part of the living system, are to be eliminated and thrown out of the body. The solid parts of the body must become fluid before they are absorbed and form part of the lymph. The lymph, therefore, must be considered in part as a *dead*, or at least, a *dying* part of the system; and hence it may readily be conceived to acquire occasionally a degree of virulence or poisonous acrimony; to be already, as it were, cadaverous, and therefore to be irritating to the parts through which it passes.

If this be correct, the glandular swellings in scrofula are secondary symptoms. Indeed, we often see conjoined to the glandular swellings in the neck, scabs or sores upon the scalp: and the thickness of the upper lip, and tumefaction and soreness of the nostrils, are so frequent as to be esteemed a common symptom of this disease. It is not improbable, therefore, that the glandular swellings always indicate some disease of the membranes, cavities, or other organs from which the lymphatics originate. It is not impossible that, as we see a portion of bone perish and be thrown out of the system, so a membrane, or other soft part, may occasionally perish, and be regenerated; it is possible that this process may take place without any external signs of it, and that during such a process the lymphatic glands may be irritated, tumefy, and suppurate.

Upon such a theory of scrofula, as this view of the phenomena points to, there is no immediate connection as cause and effect between impure water and scrofula. Impure water does not directly cause the scrofula; nor are we to suppose the glandular swellings to be occasioned by foreign matter passing through the glands irritating and inflaming them. But the putrescent matter of water acts on the scrofulous habit as upon others; only the scrofulous habit appears to be more than commonly irritable. This matter is a depressing power; the tone of the body is diminished by its action; the radical powers of the fibres are either destroyed or greatly impaired; of many parts the structure is altered; of others, the very substance is destroyed. But these processes are, in no circumstances, chemical processes, but universally vital processes.

This connection has been so often asserted, that it cannot be doubted that it has been really remarked, that scrofulous disorders are abundant where the water is very impure. Dr. Beddoes has furnished us with two such authorities, which I

shall copy. He says, "Hard, selenitic, and calcareous waters have been given out by respectable observers for a cause of scrofula. M. de Luc, for instance (Lettres, I. 17), remarks, that where he has found incrusting or petrifying springs, there the people were scrofulous." The following passage is anonymous: "Quod vere assertum, licet ad strumas potissimum endemias pertineat, nullus tamen dubito tales aquas etiam diatheseos scrofulosæ evolutionem promovere, malumque augere posse. Gottingæ scrofulæ frequentissimæ sunt; aquæ vero ibidem scaturientes calcareis particulis insigniter abundant."

But though the facts be granted, there appears an error in the mode of conceiving the operation of impure water. As I have said, impure water does not cause scrofula specifically, but impure water excites and brings into action the diseased propensities of the constitution, whatever they may be, which propensities, but for the application of this morbific power, might have continued dormant and quiescent.

These truths will, perhaps, be more evident by considering the particulars of the following case. I have already brought it forward as a proof of the quickness with which an ulcerated surface feels the substitution of pure to common water. The further contemplation of the phenomena enlarged, and, in a measure, corrected the opinions I had formed when I published the former facts concerning it.

CASE XI.

Scrofulous Ulcer of the Arm.

I HAVE noticed, at p. 170 of my "Reports on Cancer," a lad named John Milner, a miserable object from an inveterate scrofula. I have there described the case. I shall here, therefore, produce only some of the facts which appeared during the course of the treatment.

This lad had a large ulcer on his arm. Under the regimen (which was undertaken October 19, 1808), on November 31st this ulcer ceased to discharge, and in a week or two more it cicatrized. But during the following year the cicatrix often gave way, the part became sore, and again discharged, and in a few days again healed. The same event took place in February, 1810, after which time the sore healed completely, and

has since, I am informed, continued well. But though I attribute the very speedy drying up and cicatrization of the ulcer to the regimen, I cannot ascribe the complete cicatrization to it, as there were marks of old cicatrices on his body. There may therefore have been power in the constitution finally to heal this ulcer.

In this boy, the left ear was incrusted with a large scab, so as wholly to conceal the interior parts of it. In ten months the crust was removed, and the lower part of the ear came into view, and it appeared that the greatest part of the lobe had been destroyed. What remained appeared sound, being covered with newly formed skin. But this skin soon gave way, and the the crust or scab was renewed. In February, 1810, it again fell off, the ear again appeared sound, and so it continued.

About the same time, all the diseased parts were in an improving and healing condition. The ulcerations on the left side of the face got quite well. One remained on the right side, which was skinning over, and the general improvement was so visible that the master of the workhouse expressed more than once his satisfaction at it. But a large portion of the skin remaining preternaturally red, the appearance of the boy continued to be very unpleasant. And about this time I found that the boy was becoming inattentive to the rules which had been laid down for him. The master of the house told me of this circumstance; and the father of the lad, one of the rudest of the vulgar, was discontented at the restraints imposed, and had determined to put him a second time into St. Bartholomew's Hospital. Under these circumstances I thought it would be more instructive to observe the case when it was again left to itself. He went into the hospital this spring.

Here he underwent a mercurial course for a month, but without any change for the better or the worse. On his being returned to the workhouse, I certainly expected to observe the ulcer on the right cheek quickly becoming worse; but I was in error, for the ulcer still continued in a healing state for five months at least, when it was very nearly well. All the other parts likewise, which had been diseased, continued sound and well.

From this, with several other analogous observations, which I do not think it necessary to relate, it appears how different is the agency of substances upon the living body from the action of inert matter, whether it be mechanical or chemical. The changes which are produced by mechanical or chemical agents are necessarily simultaneous, or immediately consequent upon

the application of a new force or cause of change. But in the living body no such coincidence can be traced; the effects of a morbific cause remain long after the cause has ceased to be applied; and, in like manner, the influence of an anti-morbific cause continues sensible long after it, likewise, has ceased to be applied.

In the case before us the fact appears to have been, that a more healthy regimen had strengthened and invigorated the powers of life. This increase of inherent power could only be destroyed gradually, by the application of the common morbific causes, to which the human system, under our common habits, is constantly exposed. Therefore, till this increase of power was totally destroyed, and the system brought down completely to its ordinary level, the effects of the more healthy regimen continued to be apparent.

This ulcer then failed to give, what I was looking for, an ocular proof of the influence of the pure water. However, at the end of about five months it ceased to cicatrize, and began again to spread. But upon the left eye of this boy I obtained the proof I wished for.

The eyelid of this eye, before the regimen was undertaken, was much distorted, being drawn at its outer angle downward and outward. While the regimen was observed, this deformity ceased, and the eyelid gained its proper position. But gradually, after it had been abandoned, the deformity returned, and in about five or six months it was exactly as it had been at first.

After this period I ceased to observe him. I have met him, accidentally, nearly in his former condition, as he remains at present, allowing for the difference of years.

CASE XII.

Scrofulous Ulcers of the Neck.

About the end of the year 1810, G. S., a boy about twelve years old, was recommended to me by the kindness of the late Dr. Garthshore. He had many glands, on each side of the neck, inflamed, ulcerated, and discharging an ichor. In one of them, in particular, was a hole large enough to put the end of a finger. The other ulcers were more superficial.

This state of the glands appeared occasioned by a diseased state of the scalp, on which there were several sores and scabs. It extended in some measure to the eye and eyelids. More than once, about this period, they inflamed, and the eyelids tumefied so much as to close, for a time, the eyes.

The regimen had upon this boy the same effect as on the last subject. The ulcers were quickly dried up, and they soon began to cicatrize. In half a year, the boy was able to leave off all the coverings about his neck; and all the ulcers were completely healed, except that which had been so deep. In two or three more months, this became well also; and nothing remained but a redness about the parts. The scabs, however, continued upon the scalp. They, no doubt, afterward came off, but when I cannot exactly say.

This boy was very refractory, and discontented with the restraints imposed upon him. At the end of the twelvemonth, therefore, the regimen was given up. The boy, however, continued well, as I saw, at least a year and a half after, since which time I have lost sight of him.

Under these circumstances, it is probable that these ulcerations would have got well under common regimen. But it was evident that the cure was accelerated by the treatment. It can hardly be doubted that the disease of the glands was occasioned by the condition of the scalp; and it could not have been expected that they would become sound, before the integuments had recovered. But the fact was otherwise. I would not, however, infer more from this case than, first, that it shows evidently the influence of the pure water on an ulcerated surface; and secondly, that a full diet of animal food and fermented liquors, which is commonly enjoined in such cases, is, to say the least, unnecessary.

I cannot omit this opportunity of paying a small tribute of respect and gratitude to the memory of Dr. Garthshore. He was, at this time, the oldest member on the college list resident in London. To me he was wholly unknown. At a time when I was struggling in vain to obtain a few cases suited to my object; when, from the gentleman to whom I had shown the facts concerning cancer, I received, after the labor of years, a cold and reluctant, assent I cannot call it, but withholding of contradiction to the conclusions which were pressed upon me; when another practitioner, a physician of great employment, with whom I had lived from early life in fraternal familiarity, preferred putting an end to an intimacy of five-and-twenty years to supplying me with a single pauper; at this

time, this upright, respectable, and benevolent old man came to me, sought my acquaintance, encouraged me to proceed in my inquiries; told me how much the elder Heberden would have been pleased with them; and promised me every assistance in his power. And he neglected no proper opportunity of furthering my views. The very last act of his life was an attempt (it proved an abortive one) to serve me; and, as he believed, by serving me, to promote the diffusion of useful knowledge. Thus did he preserve to the last breath the principles which had guided him through life: urbanity, liberality, integrity, the love of truth, and an ardent desire to contribute toward the welfare of mankind, and diminish the mass of human misery. Such were the rules of his conduct and leading traits of his character.

I am not without obligations to other individuals, which I may here, not improperly, acknowledge. Mr. Crowther procured me more than one case of cancer. Mr. Platt, unsolicited, did the same thing. These cases were such as might have led to useful conclusions, had the patients themselves been tractable. Dr. Latham, also, the present worthy president of the college of physicians, had the goodness to recommend to me a subject laboring under a disease of this kind; but it was too far gone to afford any chance of relief.

CASE XIII.

Remarks on Cancer, with a Case.

I FEEL it proper to premise a few remarks to the case which is next to be related.

It has become less necessary for me to bring before the public many additional observations on this disease, as Mr. Abernethy has done me the justice to recommend the method of treatment I proposed to the trial of surgeons, to whose care these cases commonly devolve.* I have reason to believe that

* The following is taken from Mr. Abernethy's Surgical Observations on Tumors, p 93: "There can be no subject which I think more likely to interest the mind of a surgeon than that of an endeavor to amend and alter the state of a cancerous constitution. The best timed and best conducted operation brings with it nothing but disgrace, if the diseased propensities of the constitution are active and powerful. It is after an operation that, in my opinion, we are most particularly incited to regulate

it has been tried, under the inspection of competent judges, and therefore of this, as of every other proposal, time will ultimately decide the merits. At present, however, with regard to the experience of others I am very imperfectly informed.

I do not wish to conceal, that the testimony which Mr. Abernethy gave to the accuracy of my statements (as far as he was concerned) was given at my own request. For it is a fact, that Mr. Abernethy was so struck with the effect of the distilled water, in the case of cancer that he put into my hands,

the constitution, lest the disease should be revived or renewed by its disturbance. In addition to that attention to tranquillize and invigorate the nervous system, and keep the digestive organs in as healthy a state as possible, which I have recommended in the first volume, I believe general experience sanctions the recommendation of a more vegetable, because less stimulating, diet, with the addition of so much milk, broth, and eggs as seem necessary to prevent any declension of the patient's strength.

"Very recently, Dr. Lambe has proposed a method of treating cancerous diseases, which is wholly dietetic. He recommends the adoption of a strict vegetable regimen, to avoid the use of fermented liquors, and to substitute water, purified by distillation, in the place of common water used as a beverage, and in all articles of diet in which common water is used, as tea, soups, etc. The grounds upon which he founds his opinion of the propriety of this advice, and the prospects of benefit which it holds out, may be seen in his 'Reports on Cancer,' to which I refer my readers.

"My own experience on the effects of this regimen is of course very limited, nor does it authorize me to speak decidedly on the subject. But I think it right to observe, that in one case of carcinomatous ulceration in which it was used, the symptoms of the disease were, in my opinion, rendered more mild, the erysipelatous inflammation, surrounding the ulcer, was removed, and the life of the patient was, in my judgment, considerably prolonged. The more minute details of the fact constitute the sixth case of Dr. Lambe's Reports.

"It seems to me very proper and desirable that the powers of the regimen recommended by Dr. Lambe should be fairly tried, for the following reasons:

"1st. Because I know some persons who, while confined to such diet, have enjoyed very good health; and I have further known several persons, who did try the effects of such a regimen, declare that it was productive of considerable benefit. They were not indeed affected with cancer, but they were induced to adopt a change of diet to allay a state of nervous irritation, and correct disorders of the digestive organs, upon which medicine had but little influence.

"2dly. Because it appears certain, that in general the body can be perfectly nourished by vegetables.

"3dly. It seems sufficiently ascertained, that diseases have in some persons been excited by water, and therefore it is desirable that whatever is used should be made as pure as possible.

"4thly. Because all great changes of constitution are more likely to be effected by alterations of diet and modes of life than by medicine.

"5thly. Because it holds out a source of hope and consolation to the patient, in a disease where medicine is known to be unavailing, and surgery affords no more than a temporary relief."

that he made upon it this pointed and remarkable declaration: "I cannot be insensible," he said, "to the effect of this treatment. Whether it will cure the disease or not, I cannot tell; but I can have no doubt but that it will prevent it."

Mr. Abernethy, in consequence of what he saw, ordered the distilled water, at this time, in some other cases. One was a case of cancer of the rectum. It was a desperate case, in the very last stage of the disease; and the patient soon died. But the sufferer declared that it gave him much ease, and that it was the only thing from which he had appeared to receive benefit. This declaration, or something tantamount to it, Mr. Abernethy told me, with the addition, "that he should at all times be willing to acknowledge it."

This leads me to mention the circumstances, which induced me to be more sanguine with regard to the hoped-for result of cases, that were very far gone, than was justifiable by the event. I do this the more willingly, in order to guard others against a similar sort of deception, which will certainly occur again, under the same circumstances. What I allude to is as follows:

In cases where the vital powers are greatly reduced, the evident change induced by a change of regimen, and the apparent advantage of such a change, is incalculably greater than where the vital powers are more perfect, and where, consequently, the immediate danger of the patient is much less. This fact has appeared in a great variety of examples. I will cite a few that were remarkable.

In a case of carcinoma of the mamma, a middle-aged woman adopted the regimen; and the consequence was, that the pain, which had been constant and severe for many months, was relieved, and almost removed in one fortnight. Such a circumstance could not but cause great delight, and excite hopes that much good might be done in a short time. But these hopes proved fallacious. The woman died in less than six months; being cut off, as I judged from correspondence, by a peripneumonic affection.

Another woman, laboring under ancites, received great, and almost instantaneous, benefit from the regimen. The abdomen began quickly to diminish in bulk, and for more than three months she appeared to improve in health daily. But then the benefit ceased, new symptoms supervened, and in less than another month she died.

A little boy of about four years of age, who was epileptic, was made to try the same plan of diet. The effect was highly

pleasing, and even astonishing. After the course of a fortnight the convulsions wholly ceased; and the head, over which he had appeared to have lost the power, became in a great measure upright. But he continued very stupid, with the sensibility so much impaired, that he seemed scarcely to be impressed even by fire applied to the skin. In about two or three months the lower limbs became dropsical, the strength failed, and the child soon died.

These, and several other similar events, have instructed us how little dependence is to be placed on the first changes, however imposing they may be; they soon showed that these sudden changes denote a great diminution of the powers of life, and would not have taken place had the powers been perfect. In fact, the cases which have ultimately succeeded the best, have been those in which the least benefit has been received suddenly; and from the repeated observation of such facts, I am now much better contented to be told, in a bad case, that little or no relief has been received, it may be, in several months, than the contrary.

I have no doubt that the observation which caused the acknowledgment, which Mr. Abernethy made to me, was similar to those I have just mentioned. These declarations were made in the year 1805; and I was therefore not precipitate in expecting that, when Mr. Abernethy was publishing on the subject of cancer in 1811, he should take the opportunity of acknowledging that in the statement of facts to which he had been a witness I had been scrupulously observant of the truth. In that interval, the defect of the original proposal had been detected, and sufficient time had elapsed to have tried the power of the regimen, and to have ascertained in a good measure what it would really effect.

But though the recommendation which Mr. Abernethy gave was at my suggestion and request, he alone is answerable for the terms in which it was given. In particular, when he says, "It is after an operation that we are more particularly incited to regulate the constitution," it is what I can by no means assent to. But more of this presently.

Mr. Abernethy says also on this subject: "I believe general experience sanctions the recommendation of a more vegetable, because less stimulating diet, with the addition of so much milk, broth, and eggs as seem necessary to prevent any declension of the patient's strength." On such a subject, Mr. Abernethy is, of course, much better informed than myself. But he certainly never informed me of this general experience; nor did I, dur-

ing my attendance on the case which Mr. Abernethy put into my hands, receive from him the slightest hint of such an opinion. No traces of such an opinion are to be found in Mr. Abernethy's works, previously published; not even in the second edition of his treatise "On the Constitutional Origin and Treatment of Local Diseases," published in 1809, when he had seen the progress of the case we attended.

Nor was a diet of this kind recommended generally in cases of cancer even by Mr. Abernethy himself, previous to the publication of my "Reports." In proof of this I can say, the lady whom we attended was eating animal food, commonly twice a day, under the mistaken notion of supporting the strength, before it was resolved, at my suggestion, to change her diet in February, 1806. This was under Mr. Abernethy's own eye. I do not say it was done by his advice. He, I believe, never inquired into, nor gave any directions on the subject. I will further say that, had it not been for my strenuous application, this recommendation would not have been given, even in the place in which it has appeared.

I do not doubt, however, that it is the practice of the best surgeons to order a mild diet in these diseases. I have already cited the authority of Mr. Benjamin Bell to this point. Other writers have likewise recommended such a regimen. "We moderate," says one, "the effects of cancer in every stage by an antiphlogistic diet." Another writer says, "In the mean time, the patient should live abstemiously, avoiding animal food, wines, spirits, and fermented liquors, as heating, stimulating, and tending to increase pain; a milk and vegetable diet, therefore, in such cases, is the most proper." In a passage of Cheselden's anatomy, cited in the posthumous work of Mr. John Howard, it is said: "In desperate cases where we cannot extirpate, we find the best remedy is plentiful bleeding (which also is Nature's last resort), gentle constant evacuations by stool, and a vegetable diet." And in this work of Mr. Howard's is the following passage: "Except when a stimulus is required, in chlorosis, the diet in cases where there is a cancerous tendency cannot be too strictly cooling. If it consisted wholly of vegetables, farinaceous substances, and milk, many lives might be saved, or at least prolonged; but, on the contrary, the majority of patients in this predicament have an unnatural appetite for luxurious eating, and this exasperates the disease."

But notwithstanding this concurrence of opinion of respectable writers, I am afraid that it is not true that it is any thing

like the common practice of surgeons in general to recommend even such a diet, as Mr. Abernethy has said is "sanctioned by general experience." I could, if necessary, bring the direct proof of the contrary, but I am restrained from motives which are very obvious.

Nor indeed is this wonderful, when we consider how trifling is the relief which such a diet can be thought to afford. It is very doubtful whether it would give any relief to the pain which forms so distressing a feature of the disease. It is quite certain that the strictest vegetable regimen, unaided by other attention, will not prevent the formation of a carcinomatous tumor, nor its regular progressive increase, nor its final ulceration. It is not surprising, then, that patients should be unwilling to submit to restraints which appear to them to produce little or no advantage. That the disease goes through its stages in the usual manner, while the patient is confined to vegetables, may be safely inferred from the silence of writers who, had the contrary been the case, could not have failed to inform us of it.

Indeed, I have myself had ocular proof of the fact. In the spring of 1810, I saw Mrs. M——, the wife of a tradesman living near Westminster Bridge, laboring under a large ulcerated cancer, with the breath much oppressed, as is usual in the last stages of the disease. This woman had lived almost entirely upon vegetable diet her whole life. She had an aversion to animal food. She would take a little fish sometimes, but very rarely. Her own account was to the following purport. "When I lived in the country, I was very healthy; but as soon as I began to drink the Thames water my health began to fail, and I have not been in good health since." I am obliged to Dr. Richard Reece, for introducing me to this patient, and he saw her with me. I think it right to add, in favor of her vegetable regimen, that I never saw more placidness, cheerfulness, and resignation under the appearance of so much suffering.

Mr. Abernethy's luminous description of this disease leaves nothing to be desired with regard to its general history. I could have wished that he had spoken with more decision on the most important feature of the disease—the manner in which it spreads. The facts which I showed him throw much light on this point, but they require to be verified and multiplied. Mr. Abernethy cites the doctrine of Mr. Hunter, with apparent approbation: "That a disposition to cancer exists in the surrounding parts, prior to the actual occurrence of the diseased

action. This remark, which is verified by daily experience, led to the following rule in practice—That a surgeon ought not to be contented with removing merely the indurated or actually diseased part, but that he should also take away some portion of the surrounding substances, in which a diseased disposition may probably have been excited."

If the disease be propagated by contamination, a part, which is tainted, communicating disease to the parts in contact with it, this practice must be injudicious. But if the spreading of the disease be from internal causes, foreign to the part itself, it is equally clear that this removal of the parts, to whatever extent it be carried, cannot prevent the recurrence of the disease. Let us attend then to the evidence of a most impartial and upright observer, who has left us among others the following history.

"A lady, between fifty and sixty, the wife of a surgeon, of a melancholic temperament, lusty, using little exercise, and living luxuriously, felt pain, and perceived a small degree of hardness in one breast. The whole breast was taken off, within a fortnight after it was first noticed. Upon examination after removal, there was neither extravasation nor glandular induration, but a thickening and a hardness of what seemed to be more like condensed diseased cellular membrane than any thing else to which I could compare it. The axillary glands were not affected, nor was the tumor of great size, and it was perfectly movable.

"If, in this case, the indurated part only had been removed, without taking away the whole of the mamma, I should not have wondered at a relapse; but when the operator went clearly beyond the apparent extent of the disease in every direction—when he dissected the whole from the pectoral muscle, so as to leave the fibres of that muscle bare, and that too at an early period of the disease—I say, when all these circumstances were considered, it was matter of astonishment to me that the unfortunate sufferer did not obtain a cure. But the fact was otherwise."

This is not a solitary example. In the same work in which the writer appears to have recorded the experience of his life, are nine or ten other cases, in which the disease repullulated after operations. This circumstance is inexplicable on the hypothesis of the unsound parts contaminating the sound. But they occasion no difficulty, if we suppose (as I have done) the progress of the disease to be from internal causes. Is it not indeed revolting to common sense to suppose that cutting off

the breast can counteract the effect of luxurious living? This would be truly a matter of astonishment.

This fact is of itself enough to make us doubt whether this disease be propagated by contamination, which is the most common doctrine of surgeons. The belief in this doctrine it is which makes them so anxious to remove every particle of a diseased breast, in which any degree of hardness is perceptible. And the almost uniform failure of the operation was, for a time, often attributed to a defect in this respect. I suppose, however, that, at present, very few are disposed to maintain this opinion.

On the mode in which the disease is propagated there may be three distinct hypotheses proposed. 1st. It may be supposed that there is a poison generated in the part, which, being absorbed, infects the constitution. This may be true in part, but cannot be so entirely; for in that case excision would be a radical cure. 2d. The diseased part may be thought to injure the neighboring parts by simple contact, the diseased part being a sort of focus or centre of diseased action. This is certainly the prevailing opinion of surgeons; but it is as little tenable as the first hypothesis. 3d. All the phenomena may be thought to be the effect of internal causes, remote from the part itself, and common to this with other chronic diseases. If this be true, these causes, being common causes, there can be no specific poison of cancer. And such I conceive to be the truth, and to afford a just explanation of the symptoms of the disease. I must leave the proofs of it to the judgment of others.

We are constantly deluded by language. We say a person dies of a cancer; which is just as true as when we say that the sun rises in the east and sets in the west. The truth must be that a person dies of the causes of cancer; and the cancer is not the cause, but the mode of dying.

Mr. Howard has, in so many words, maintained the same doctrine as myself, that there is no specific poison of cancer. He says, "If the cause of some cancers be a virus, I suspect it is not, strictly speaking, *sui generis*, as the small-pox, but an affection of the elephantiasis kind."

But I not only coincide with the doctrine of Mr. Hunter, that there is a morbid change in the parts in which there is no manifest change of structure, but contend that this change is the very essence of the disease; and that upon this, as upon a foundation, the whole superstructure of morbid action is built. I have already cited in favor of this doctrine, the phenomenon in

Case II. of my "Reports," in which, under the regimen, one mamma apparently sound perished by absorption, while the other was in a state of ulceration. I therefore not only say, with Mr. Hunter, that there is a morbid change in the parts surrounding the tumor, but in distant parts also, not contiguous to any tumor. This may be called, if it be thought right, *disposition.**

The phenomena of carcinoma of the eye illustrates this fully. "When the fungus hæmatodes,"—which is I presume another name for carcinoma—"takes place in children, they are generally found to have entirely lost the affected eye, before it is remarked by the parents." This is the evidence of Mr. Wardrop. To the same purpose Mr. Ware says, "that in the beginning of carcinoma of the eye in adults, the sight is lost, and the disease at first seems simply a gutta serena, without pain or discoloration." Thus it is clear that the first stage of the disease is a loss of power of the simple fibre, or radical structure of the part affected; and (as I have said) upon this the change of organization is built.

Removing the parts, then, in which this diseased disposition is supposed to exist, does not secure the patient from a return of the disease, nor does it form any solid justification of this operation. "If after the removal of cancer," says Mr. Abernethy, "when the operation has been properly performed, the cicatrix remains healthy for five or six years, or even for a

* By *disposition* to disease as contra-distinguished to *action*, must be meant the state of the fibres previous to any change that is obvious to the senses. Mr. Hunter, I believe, was the first who used this language, and insisted on these different conditions of diseased parts. He argued, particularly with regard to syphilis, that we were able, by the application of the specific, to cure the action, but not the disposition. This doctrine seems the offspring of the spirit of generalization, carried too far. It seems impossible to lay down any general rule on this subject; but many facts show that the one laid down by Mr. Hunter cannot be correct in its full extent. A single course of mercury often radically cures syphilis. It is probable, in all such examples, that some parts were only *disposed* to disease, while others had taken on diseased action. But further, where there has been an obvious infection, and the parts have got well by the power of the specific, sores have broken out even on parts that were not infected, which, by their habit and history under treatment, have proved not to be syphilitic. See Hunter on the Venereal Disease, p. 247, second edition. The only rational account that can be given of this is, that these parts have been contaminated, that is to say, in Mr. Hunter's language, disposed to disease; that the syphilitic taint had been cured by the mercurial course; but that the parts had been so injured in powers, that they ulcerate, and are gradually thrown out of the system. Here then we appear to have evidence that the disposition can be cured as well as the action. In other cases, no doubt, Mr. Hunter's doctrine is correct.

shorter period, and becomes indurated and carcinomatous, etc." Mr. Abernethy, of course, would not have mentioned such results, as the consequences of the operation, unless he had seen facts to warrant the assertion. But it is certain, that the "cicatrix remaining healthy for five or six years," must be a very rare occurrence. Half a year, a year, or two years is the more common interval. Even two years is a long period. But granting that a patient has continued well six years, it proves nothing in behalf of this operation. I have seen myself, within these last four years, a woman with a cancerous mamma, in whom the disorder had continued eight years. The whole breast was a hard lump, the skin was reddened and adherent, but it never ulcerated, and the woman died with little suffering, complaining principally of breathlessness upon going up stairs. Here then was a slow proceeding case, of which the result showed that no advantage would have been gained by operating.

In another case the disease went through all its stages, from a small knot, no larger than a pea, to the death of the patient, in fifteen or sixteen months.

The only ground of justification of this operation is, that it saves the patient the misery of an ulcerated cancer. This, undoubtedly, is an ample justification of the practice, as it has hitherto been established in surgery. If it has afforded so fortunate a result only every second, third, or fourth time, it may have been right to give the patient the chance. But I have every reason to believe that the peculiar regimen, which I proposed for this disease, will, if adopted in time, prevent this horrible, ulcerating, self-destroying process. Of course, with experience so limited as that which I possess, I should not be justified in making general assertions. Cancer, like all other diseases, is subject to infinite variety of forms. In certain states, either of constitution or of age, it must be, at all times, hopeless. Other subjects may be relatively favorable. According to my best judgment, the subject of the following relation presented a specimen of the disease, which was perfect in kind, and which might be said to hold a middle rank as to malignity, and which, had the disease been allowed to follow its common course, would have terminated, as they invariably do, probably before the present period.

January 16, 1815.—A lady, now in her forty-fifth year, requested me to examine her right breast, in the month of January, 1810. She was, in appearance, healthy, with a fine color, and fleshy, without being grossly corpulent. She told

me that this breast had been uneasy from the age of fourteen. She was the mother of many children, some still very young, and had nursed them; but suckling with this breast had always given a good deal of pain. Now, for six months, she had suffered very severe pain, in one spot, about the centre of the breast, but below the nipple. On this point she could place her hand, and was sensible of a degree of thickening and enlargement. The pain was so severe as to deprive her much of rest. She could not raise her arm to her head, nor put it behind her to adjust her dress, with convenience, nor without aggravating the pain. Lying on the affected side at night also much aggravated the pain, and, indeed, was not tolerable.

Upon examination, I found the disease so deeply seated, and the subject so large, that I could determine nothing but a general thickening about the seat of the complaint. But the whole breast had not the soft, pliant, and healthy feel of the sound one. It was more flaccid, and, at the same time, stringy. A slight degree of handling, also, gave much uneasiness.

Though this lady looked in health, it was, however, by no means the case. The respiration was not strong, and she was not equal to taking her former exercise. The legs were disposed to swell. She was troubled with spasmodic pains of the stomach; often repeatedly in the course of the day; and every third or fourth month she had more serious attacks, seated in the organs of digestion; but which, having never seen her under them, I cannot more particularly describe. The bowels were habitually bound. She had also been considerably troubled, for a twelvemonth, with humors (as they are termed) affecting various parts of the body. The most troublesome was a thin and acrid defluxion from behind both ears. She described, on one occasion, the state of the sensorium very expressively, though the sensation was such as is never experienced, and cannot, therefore, be clearly conveyed to a healthy person. She felt, she said, sometimes, *as if she was out of herself.*

This lady began the regimen in the above month of January, 1810. During this year, herself and her friends were sensible that her general health improved. The bowels became open without medicine, and the spirits rather improved. But there was no change in the local disease. She thought rather that it got worse, instead of better. All the other affections continued unabated. However, the improvement of her strength encouraged her to persevere.

But during the second year, 1811, the pain very sensibly diminished; it no longer appeared to be spreading, and the disease to be becoming deeper; but, on the contrary, the diseased part seemed to be looser, and the pain to be confined more entirely to the part affected. The sores behind the ears dried up. But the eyes became sore; the diseased action appearing to be transferred to these parts. The general state of health was far from good; but now, her encouragement to proceed was from the manifest soothing of the disease of the breast.

The year 1812 was passed nearly in the same manner: the pain in the breast was not gone, but it was much diminished. The diseased breast was quiet, and the health improved. At this time she became pregnant; and toward the end of the year was safely delivered. She attempted to suckle her infant. The attempt, however, caused so much pain in the diseased breast, that, in the same circumstances, I would not again advise it to be made. At this time, a redness came on the surface of the breast, over the diseased part. The infant did not live many weeks. Some time after its death, the breast again became easy; more so, indeed, as she said, than it had been for years.

About this time, I again examined it. I readily now found a tumor, and of considerable magnitude, I think of the size of a walnut.

In October, 1813, she had a kind of irregular gout. The wrists and hands swelled, with some pain, but without redness. At this time she was considerably indisposed; but not for any length of time.

In November, of the same year, a few pimples appeared on the skin of the diseased breast. But they did not continue permanent. There was still pain, but of no severity. The general health continued good.

And, at this time, after a lapse of fourteen months, she still complains of pain in the part. I examined it about Christmas, 1814, and felt a small thickening, now in the part of the gland above the nipple, and nearer the sternum. But the whole mamma was soft, without tumefaction, inflammation, or any injury of the skin. The pain is enough to give her uneasiness; but not enough to derange the health, materially to encroach on the sleep, nor to impede any of the functions of life. The general health is so good that no one would take her to be an invalid. It is quite as good, if not, indeed, better, than it was in 1810. She is, in the countenance, a little more contracted,

tnan at that time, but not materially so; and is thinner, but without any emaciation.

As to what has taken place in the gland itself, it is obviously difficult to speak positively. I do not believe, however, that the thickening which I felt at the close of last year, 1814, is the same as the tumor I felt about two years before, nor still that that tumor was the same as the thickening which was the seat of the pain in 1810. The situation of the uneasiness was considerably different at each examination. There have been times during which the breast has been almost entirely easy, after which the pain again increased. It appears probable, therefore, that the different parts of the gland, in which there was a diseased disposition, have taken on diseased action successively, and that each successive induration has resolved. On this point, however, I would not speak decisively.

It is necessary, now, to review the principal circumstances of this case.

1st. This disease was carcinoma. Its history, both as a local and as a constitutional disease, proves this. The previous uneasiness of the part, the tumor, the severity of the pains, the extreme tenderness to handling, and the obstinacy of the disease, now continued for a series of years, all conspire in forcing this conclusion. We must suppose that active disease took place in this breast, in the course of the year 1809, when the pain became so severe as to disturb the rest, and impede the motion of the arm. The constitutional affections, the derangement of the organs of digestion, the tendency to anasarcous swelling, the state of the sensorium, are equally convincing as to the nature of the disease.

2d. I am equally satisfied that at this time, after a course of five years' attention to this regimen, the disease continues to be truly carcinomatous. The pain, the tumor, and the highly irritable state of the part to handling prove this to be the case. It cannot therefore be said that the disease is cured.

3d. But by the regimen life itself has been probably preserved. Five years is more than, upon an average, such a case could be expected to last. But under this regimen that period has elapsed, and the health is as good, or better, than when it was entered upon.

4th. The gland has been preserved. It continues uninjured, of its natural form and appearance, with no other complaint than a trifling induration, not readily discoverable by examination.

5th. It is a consequence of this, but which from the impor-

tance of the fact deserves to be particularly noticed, that in this case the ulcerative process has been wholly and completely superseded.

Such have been the facts of this case; facts which I must be permitted to say fully corroborate all the conclusions which I formerly drew regarding this disease. I must refer, therefore, those to whom these conclusions are unknown to my "Reports." They are, in fact, very nearly the same appearances which took place during the long attendance, from May, 1805, to October, 1808, in conjunction with Mr. Abernethy, on the case which he put into my hands, due allowance being made for the different stages at which the cases were taken up. In that there was no fresh ulceration for three years and five months; and we may assert, therefore, confidently, that there too the ulcerative process was superseded.* This, I say, was seen by Mr. Abernethy so long ago as the years 1805 and 1806.

The event of this case takes away the last apology for the most severe, not to say shocking operation, of which the unhappy subjects of this disease have been, from time immemorial, the objects. I therefore cannot but be surprised that that gentleman, having seen the ulcerative process superseded in that case, should say, "It is *after an operation* that, in my opinion, we are most particularly incited to regulate the constitution, lest the disease should be revived or renewed by its disturbance." But this writer has informed us, "That he has known a patient die soon after an operation for the removal of a cancerous tumor of no great magnitude, merely in consequence of the shock imparted to the constitution by the operation." Common sense, therefore, seems to dictate that the constitution should, if possible, be improved previous to any operation, and to enable the patient to sustain it.

It is quite evident, that if the diseased part be removed, we can never feel perfectly convinced that the nature of the disease has not been mistaken. As it is properly observed by Mr. Abernethy, it is more from the history and progress of the complaint that its nature becomes evident, than from any thing that is obvious to the senses. Had this lady submitted to an operation several years ago, which I have no doubt would have been proposed by the surgeons, it is impossible that there could have been that sort of proof of the nature and progress of the disease which it has now afforded us.

* A few small ulcerations formed upon one part, at the expiration of eleven months, but they soon healed, and continued well to the end.—See the "Reports on Cancer," p. 102.

I would ask on this subject one very plain question. If a medicine were proposed as a cure for a cancerous tumor, would any one think, as a previous step to a trial of its powers, of first cutting off the diseased part? would not the proposal of such a step be deemed even ridiculous? why then should not the power of regimen, which Mr. Abernethy has acknowledged to be more likely to affect such a disease than medicine, be treated with equal fairness?

I have only to add that the beneficial effects of this regimen in scirrhous tumors of the mammæ have been distinctly acknowledged by a surgeon of a public institution. In one of the medical journals, of the year 1809, was a communication on this subject, of which the following is an extract:

"In scirrhous tumors, where the patient's stamina is good, and particularly where the uterine secretion is regular, the vegetable diet and distilled water have proved very beneficial. The good effects of Dr. Lambe's treatment depend entirely on the natural stamina of the patient."

I entirely coincide with this writer on this point. He has signed himself "*A Dispensary Surgeon.*" I am sorry to say that the author of this communication, which carries with it strong internal marks of correct observation, should have thought it proper to assume the mask of an anonymous signature, by which the weight which would have been attached to his evidence is considerably diminished.

CASE XIV.

Rheumatism.—A Case.

January 20, 1815.—I relate the circumstances of the following case rather to show the changes which are introduced into the habit, by the regimen, than as an example of relief from severe disease.

A lady, now near forty years old, was induced to adopt this regimen between four and five years ago. She had no disease upon her, but was not in a firm state of health. The respiration was weak; she was not able to take a full inspiration. The habit was relaxed and languid; the pulse feeble and sluggish; she was always chilly, and the skin was cold and damp. The feet were always cold.

I mention these circumstances, because they are what are

called signs of a languid circulation, and are thought particularly to require stimulating food and fermented liquors to support, as they say, the system. Accordingly, this lady herself was under the influence of a strong prejudice, that an opposite system could not possibly agree with her.

And, indeed, for several months, the change was very irksome. She felt as if she had nothing in her stomach, and had a strong craving for animal food. But except uneasy sensation, the change was attended with no bad consequence, nor serious mischief of any sort. Gradually, also, the uneasiness subsided, and ultimately wore off entirely. The craving appetite for animal food was also wholly subdued.

And the same amendment of the general health was found to take place in this, as has been experienced in other cases. And it was found here that under the vegetable regimen the habit became, instead of cold and chilly, to be hot and feverish. This cannot certainly be supposed to be the direct effect of the vegetable diet, but must have arisen from the state of the system at the time at which it was adopted. The respiration has become strengthened; and all the signs of languid circulation, particularly the cold feet, and the coldness and dampness of the skin, were removed. She sleeps much more soundly than formerly; and upon the whole, the general health is better, and the habit much strengthened.

She is much less susceptible of injury from cold than formerly. She was so tender that she dreaded a breath of cold air blowing upon her. Such accidents she can now bear without injury or apprehension.

She was able in the third year of the use of this regimen to suckle an infant nearly twelve months. This is the fourth example of this kind which has occurred to myself. Twice it has happened in the family of Mr. Newton, and once in a patient of mine in an humble walk of life. I have heard, too, of some other instances of it.

This lady had no fixed disease upon her; but she had frequent indispositions. For five or six years she had been troubled with severe rheumatic pains of the face, regularly attacking her in the months of March and April, and lasting six weeks or two months. These attacks have wholly ceased. But during the second year, she was troubled with an inflammation of the eyelids, from which there was an abundant thin and acrid defluxion, which continued some months. This disease appeared to be a species of substitute for the rheumatic pain.

CASE XV.

Polypus of the Nose with Numbness of the Limbs, Giddiness, and Oppression of the Head.

January 20, 1815.—I have obtained the particulars of the following case from correspondence, the result of which appears very satisfactory.

A lady, now near forty years of age, married, and a mother, had been troubled from a very early period of her life with a stoppage of the left nostril, which was found, when she was eleven or twelve years old, to proceed from a polypus. The nostril of that side was habitually enlarged. There was an habitual discharge from the part, which had occasionally been violent; but it was unattended with pain, or other inconvenience, except that she was obliged commonly to breathe with the mouth open.

This lady was of a full habit of body, high colored, and with the strength good, being able to walk several miles, but was liable to numbness of the limbs, the legs and arms frequently becoming torpid, or what is usually called falling asleep. The head felt often oppressed, and she was affected with dizziness, and singing of the ears when she stooped. At times she was extremely irritable and nervous. She had been informed that such diseases of the nose occasionally become cancerous, on which account she was very willing to adopt any plan that should be thought right to avert such a calamity.

What reason there was for such an apprehension I will not venture to pronounce. But the uncomfortable feelings which this lady described, justified an attempt to remove them, and I therefore advised her to adopt the regimen. This she complied with in the very beginning of the year 1812. I heard of the consequence of the change very lately, of which she speaks in terms of the greatest satisfaction. Her account is in the following terms: "On the receipt of your answer to my letter, I have strictly confined myself to the mode of diet you prescribed, and I have taken no medicine whatever. I can now with the greatest truth assure you, that in every way my health is materially improved; my spirits are more equal; the confused feel I formerly experienced in my head is very much better; the distressing drowsiness which frequently overpowered me is quite gone, and the equally disagreeable numbness and torpor in my limbs is quite gone also. I used likewise frequently

to have the nightmare, which I do not recollect to have felt for two years past. I have also the pleasure to tell you that my nose is more comfortable than formerly; for though I never had any pain in it, there was often a very distressing sense of fullness and heat, which I do not feel now, and the discharge is less. I also breathe much more freely through my nose than I used to do."

CASE XVI.

Miscellaneous.

FROM A CORRESPONDENT.

DEAR SIR,

I am happy to be able, in compliance with your request, to state some of the particulars relative to my observations and experiments about vegetable diet: they are, in my opinion, very insignificant and useless; but if you think they can be of any service to you for your ingenious inquiry, you are at liberty to use them in any way you think best. As you wish me to represent my own case, I shall begin with the following particulars.

I first adopted the vegetable diet about the year 1801, when a boy, partly from a disgust I felt toward animal food—a circumstance I cannot exactly account for—and partly from hearing people talk of the health and longevity of many persons who had fed entirely on vegetable substances; and of the simplicity of manners of the oriental herbivori. I also read some books which came in my way by chance about the cruelty practiced toward animals, with a view to improve the flesh considered as an article of diet; and I heard people discussing these subjects at dinner.* All these causes combined to inspire my infantine fancy with such a disgust to the flesh of animals, that for upward of five years I lived totally on the vege-

* I have recently become acquainted with many persons at Cambridge and elsewhere, who, at some early period of their life, abstained from animal food from this consideration of the cruelty necessary to catch and destroy it. Most of these persons have since been distinguished for their intellectual and benevolent character. I have heard them say that they enjoyed as good health and strength during the time they fed on vegetables as at any other in their lives, and I am sorry I cannot at this moment find access to them to obtain leave to give their names, and a more particular account of their cases.

table productions of the earth, except perhaps a little milk and butter. I do not remember, being then young, and thinking very little about medical subjects, what change was produced on my feelings and health. I believe I was as well as before; and the increased pleasure which I began to take in literary and scientific employments at that time, inclines me to suspect that a state of mind more friendly to mental enjoyments might possibly have been induced by a change to the light diet on which I began to feed. I may mention in this place, that during this period, I once being in Surrey, in the summer time, fed for more than a week almost entirely on the fruits of the garden, chiefly raspberries, strawberries, and currants; I am sure I was never better nor stronger in my life.

I may here observe, that while living in this manner I lost the dark incrustation on the teeth; a disagreeable appearance for which persons have commonly recourse to the dentist.

I left off the vegetable diet more from a notion of the convenience of eating as other people did, than for any other reason. I continued eating a mixed diet till 1811, when I studied anatomy at St. Bartholomew's Hospital, where it was the fashion among many of the students to eat vegetable diet. Many had adopted it for ill health, and told me of the benefit they derived from it; while others made the experiment in compliance with the habits of their friends. Hypotheses are very contagious, and I was infected, and determined to make the experiment fairly and completely. I lived for more than sixteen months on a strictly vegetable diet. The change at first produced was an augmentation of nervous sensibility, which was only temporary, and after a short time my health, which was always good, was now nearly the same as when on a mixed diet. I think I can say, however, that I was more disposed for and capable of laborious mental occupation than when feeding on mixed diet.

. That numerous persons have enjoyed good health on vegetable diet is doubtless; but whether this diet produces the same degree of muscular *strength* and *activity*, is more doubtful. In my own case it certainly did. I frequently walked twenty miles in a morning, and took other hard exercise when on that diet, and I seldom felt fatigue. I am quite satisfied with the experiment, and having repeated it on others to whom I have recommended the vegetable diet, that people in general may, after a time, live as healthy on it as on a mixed diet. Whatever change may be produced at first, a very similar state of health appears to return after the continuance of any diet

when eaten in moderation; at least as far as temporary appearances indicate. How far a mixed diet lays secretly the foundation for future disorders, or may abridge the term of life, I am unable to say. I leave this to yourself and other ingenious persons, who make it a subject of their study. But I am confident, in general, that people err considerably in the quantity of food they take, and the freqnency of taking it, and in the manner in which they stimulate their stomachs by spirituous and fermented liquors.

One circumstance which strongly impressed me with the small quantity of food which was necessary to sustain us in health, and which shows the safety and efficacy of a sudden adoption of vegetable diet, was the following. Last midsummer I received a severe wound on the back of the hand. Apprehending inflammation and its consequences, I left off all diet except a few potatoes and some strawberries for many days, and vegetable diet for many weeks. The wound continued healthy, and the perfect use of my hand returned in less than six weeks, without any considerable inflammation or any fever, during the progress of the reparation of the injury. I did not perceive any other inconvenience (after the intense pain which shortly followed the accident was over, which was only cutaneous and lasted a few hours) than that of being obliged to wear my hand in a sling for a few weeks. I was perfectly strong and healthy, though my diet was only on vegetables, and diminished to one fourth of the ordinary quantity; and this adopted after a copious bleeding from the wound.*

To return to our subject; I recommended A. B., about twenty-four years of age, who for a continual state of diarrhœa had been kept by his medical attendants on meat alone, to alter a plan from which he derived no benefit; he began at first by eating biscuits and other farinaceous substances, and by degrees habituated his stomach to vegetable diet; he grew healthy, lost the diarrhœa, and after being restored took to common mixed diet again; but used much less in quantity, and remains well. I mention this case out of numerous others in which vegetable diet was successfully used, because it was a case in which, from

* It is evident that my ingenious correspondent has followed the common opinion, that the absence of inflammation was occasioned by the temporary change of his regimen. I have already given my opinion in the preceding pages that this doctrine is erroneous; and should attribute the slightness of the suffering, under this accident, much more to the soundness of constitution produced by the previous long-continued habits of temperance and abstinence than to the living on vegetable diet, after the accident had happened.—*Note of the Author.*

the irritable state of the patient's stomach and bowels, the fruit and vegetables were regarded by the medici who attended him as particularly dangerous.

I must say, in conclusion of this hasty letter, that all I have observed of the good effect of vegetable or any other diet, appears to me referable to its power, arising either from some idiosyncrasy, or some peculiar state of the patient's system, of tranquilizing stomachic and intestinal irritation; by this means of insuring better digestion, and producing that tranquillity and healthy action of the chylopoietic viscera, which is necessary to the cure of every disorder whether general or local, which is the principal condition of the maintenance of health. Of the remote effects of peculiar diets on the animal system, where digestion upholds temporary health for a while, I know absolutely nothing. I must therefore confine my practice of medicine to actual experience of facts; and be contented till, by your labors, and the future inquiries of chemical physiologists, more is known about the component substances of the animal fibre; to recommend people to acquire and preserve, by mental tranquillity, temperance, and exercise, and to restore by simple medicines in diseases, the healthy action of those important organs, which nature has designed to repair the daily waste, and to restore the accidental injuries of our mutable fabric.

It may be well to observe, in the course of this inquiry, that if your doctrine and experience should be able to show that people may live healthily in all climates on vegetable productions, the same quantity of land would sustain more human beings; a fact of which agriculturists have assured me that people would be more free from disease, and from inducements to gluttony and intemperance, and that the removal of the disgusting scenes of cruelty, practiced on edible animals, would be gratifying to those who are organized to feel benevolently, would cease to operate as an incitement to the bad feeling of others, and would tend in time to a better state of society.

A circumstance may be mentioned here, of great moment in the education of youth, namely, that the principles of all human actions are in the organization, though education and external influences are necessary, generally, to excite their activity. Examples have the most powerful influence in rousing either the good or bad feelings; and precepts are of little avail in comparison. The constant habit of destroying animated beings, both for food and for amusement, is therefore one of the most fertile sources of the ferocity and brutality of the human character. Hence we see the moral benefit of any diet

which would diminish, in any considerable degree, this baneful example. Children, says an eminent author, begin with killing flies, and end their lives at the gallows for the crime of murder!

Yours, etc.,

MEDICUS.

London, Jan. 21, 1815.

CASE XVII.

Hypochondriasis, Headache, Indigestion, Costiveness, and Jaundice.

FROM A CORRESPONDENT.

DEAR SIR,

The incalculable benefit which I have, for these last two years, experienced, and am daily experiencing from the vegetable regimen, with distilled water, would have been, independent of any other consideration, a reason sufficient for complying with your wish, to have the principal facts of my case. There are yet other considerations which have much weight with me; you have made me greatly, and I would not hope ungratefully, your debtor for all which I now enjoy of health, of tranquillity, and of serenity of mind. Besides, it is but just, that you should be put in possession of every instance wherein evident and acknowledged good has resulted from the diffusion of your opinions, since it is only by the multiplication of facts that the truth of your position can be made to "come home to men's business and bosoms."

Should you judge the detail of my case worthy of publication, perhaps it may not be misplaced to observe, that I made trial of the vegetable regimen when you were unknown to me, even by name; and therefore I was not influenced by any previously formed opinion of what food is most natural to man. Imperfect as was my trial of the regimen at first, much benefit was derived from it; many unpleasant and intolerable sensations were alleviated; still something was felt to be wanting to its completion, when it was my happiness to become acquainted with you, who instructed me in the necessity of abandoning every thing animalized, and of adopting a strict vegetable regimen, with distilled water; since which time my health has sensibly increased, and is daily increasing; felicity of mind, which had been despaired of, has been obtained; and ultimately there will be assured "quiete et pure et eleganter actæ

ætatis placida ac lenis senectus." Having premised thus much, I will state my case.

At a very early period of life, and, indeed, during the whole of my education at school, my health was uncertain and precarious. What particular aliment I labored under cannot at this distance of time be remembered; perhaps, however, an opinion may be formed of the nature of my complaints, when it is known, that between my thirteenth and fourteenth years, I was very severely attacked with jaundice; and that previously, for many years, distressing headaches, and symptoms of indigestion, with habitual costiveness, had been experienced. Various were the means had recourse to, besides the aid of medicine, to alleviate my sufferings, to re-establish my health, and to correct a constitution, denominated bilious; all was of no avail, and I dragged on a miserable existence until the age of fifteen, when I was removed from school, and was for a series of years laboriously and actively employed. This situation in life did certainly improve my health; and no doubt but much more would have been done by my active employment, toward the re-establishment of my health, had I not suffered myself to be influenced by the general opinion, that labor and activity can only be gone through when animal substances and fermented liquors are used; hence I was neither sparing of the former, partaking of it thrice in the day; nor very temperate, though not intemperate, in the latter. After the expiration of that series of years, my views and intentions in life having been changed, and otherwise directed, my labor and activity were succeeded by sedentariness, and studiousness; here again I was inconsiderately persuaded by persons equally inconsiderate and unreflecting with myself, who, however, as medical men ought to have been better instructed, that the labor of the mind cannot be endured and supported, but by having recourse to solids and liquids of a stimulating quality. The ill effects of such mode of living, the seeds of which most certainly had been sown, and deeply, between my fourteenth and twenty-first years, now became manifest. In a very short time, I was wholly incapable of continuing my mental labor; was harassed by giddiness, and confusion of the head; my stomach was much more disordered, and my bowels were very much more irregular; my mind became depressed, and disturbed by all the melancholy forebodings of a thorough hypochondriac, experiencing

"mortis formidinem et iram,
Somnia, terroses magicos, miracula, sagas,
Nocturnos Lemures portentaque Thessala."

To enumerate the means devised, and made trial of to relieve me, would be to repeat what is usually enjoined in similar cases; suffice it to say, such was my condition, now better, now worse, for many years, from 1802 to 1810, in which last year my health was very much worse than it had been in any former year. Being at Edinburgh, as a student of medicine, and a pupil of Dr. Gregory, I requested his advice, which was of no avail. Fortunately, however, I had become acquainted with a student of medicine who had been similarly affected with myself. Mentioning to him my case, he wished me to make trial of a vegetable regimen, with milk. I did, and during the six months my stay at Edinburgh was protracted my health was much amended. Yet no solid nor substantial benefit was derived from the vegetable regimen until I had been introduced to you, in January, 1812, and had perused your publications; when the milk was abandoned, and distilled water substituted in its place. The change from that year has been great: all that had rendered existence irksome has been removed; my mind is tranquilized and calmed; my health has increased, and no doubt will continue to increase, never again, I trust, to be greatly diminished. Perhaps a short narrative of what I am now equal to in mind and body, contrasted with what I was not equal to, when living upon flesh, and fermented liquors, will be convincing. In 1812 my mind and body were capable of enduring more exertion than in 1811; in this year, 1813 and especially in the past summer, a great accession of mental vigor, and of bodily strength and activity, has been gained, more than in 1812; but an improvement had also been experienced in 1812, greater than in 1811; the inference is plain and obvious—

"Mobilitate vigeo viresque acquiro eundo."

Through the past summer, I have not unfrequently risen at four o'clock in the morning to study, and I have generally gone to bed at ten o'clock; my sleep has been sound and refreshing, and free from horrid dreams. Not so when my food was flesh, and my drink fermented liquors; then the hours of sleep did not refresh me in mind, nor recruit me in body; but now it is

"Airy, light, from pure digestion bred,
And temperate vapors bland."

Through the past summer, I have been equal to more walking exercise, been much less fatigued, and required less suste-

nance; fruit, with bread and biscuit, in moderate quantity being sufficient. Indeed I have observed that the lighter the food, and the more moderate in quantity, the more walking exercise I am equal to; moreover, my respiration is more equable, each inspiration is longer, and the number within a given time fewer, consequently the ability to continue exercise is increased. Very different was it, when I lived not as at present; then there was wanted not only the inclination to exercise, but an ability to continue it; upon level ground my respiration was frequent, hurried, laborious, now I can ascend a long and steep hill, walking very little slower than upon level ground; and when I have surmounted the hill, my respiration has been in no degree either hurried or panting. With respect to my bowels, they are now regular, requiring no medicine to excite them to action; on the contrary, when I lived otherwise than at present, they were torpid, and needed much stimulating; in short, my habit of body was considered constitutionally costive; an opinion most decidedly erroneous; it having been my erroneous and unnatural mode of living which contributed thereto. I should here close my statement in the usual and generally unmeaning language of persons who wish not to appear ungrateful, but I restrain myself; to you, dear sir, "conscientia bene actæ vitæ, multorumque benefactorum recordatio, jucundissima est." I am,

Yours sincerely,

JUSTINIAN MINOCH.

Walworth, 6th Oct., 1813.

CASES XVIII., XIX., XX., AND XXI.

Miscellaneous.

FROM A CORRESPONDENT.

I HAVE great satisfaction in being able to give the memoirs of a third family, who (I hope I may say it without the imputation of vanity) have had the spirit and good sense to imitate the example given by Mr. Newton and myself. This I shall do in the words of the head of the family, a gentleman resident in a distant county, conveyed to me in the following letter:

Dec. 12, 1814.

DEAR SIR,

I AM happy to learn from your friendly letter that your book, for which I have long been anxiously looking, is in progress for publication. I wish to see you before the public, and to learn if your opponents will venture fairly to encounter you by argument, and give the subject that full discussion which medical opinions of infinitely minor importance are daily receiving. From such a discussion, I can only anticipate a triumph of your doctrines equally honorable to you and beneficial to society.

My own experience on the subject has been perfectly satisfactory. When I first adopted your regimen in my family, I began it without any undue prejudice in its favor. My own health had always been good, so that I had no personal alarm or suffering to drive me from common habits; and having had no illness and deaths among my children, I could not be quite unmoved by the predictions of permanent weakness or dangerous or fatal maladies with which I was on all sides threatened, as the inevitable effects of this mode of living. After persisting near four years in the use of a strict vegetable diet and distilled water, I am happy to give my decided testimony in favor of your system. Its effects have been a gradual and important strengthening of the constitution, without any inconvenience or disagreeable symptom. I found the change easy and pleasant, and have never had the least wish to resume the use of animal food. I have always used much exercise; I have found my power of bearing fatigue increase; and I have never during the whole time felt even the slightest indisposition.

With respect to my children, A——, aged twelve, has always been a stout boy, but was formerly liable to violent inflammatory attacks on his chest and windpipe, which only yielded to the powerful applications of bleeding, blisters, James' Powder, and digitalis. He had always been hardily brought up, and lived less fully than most children with whom I am acquainted. These attacks were extremely sudden, and were preceded by an unusual appearance of health. Since we have adopted your regimen, he has never had a day's illness, and is in size, muscular strength, and power of supporting fatigue equal to any boy of his age I have met with.

B——, aged ten. The history of his health resembles that of his brother; his life has been repeatedly endangered by the same inflammations of the trachea and lungs, which have been repelled by the same remedies. The change of diet has had

the like favorable effects upon him; and he has enjoyed the same freedom from sickness or indisposition. These boys, in color and fullness of habit, have every appearance of perfect and robust health; they are thinly clad, much abroad, and exposed, without precaution or injury, to all changes of the weather. They find their mode of diet easy and pleasant, and have no wish for animal food.

C——, five years old, was a very delicate child from the birth, and suffered much from want of action of the bowels; this defect has been completely removed, and though still less robust than the two former, the general health is quite good. This child has been twice indisposed for a short time with cold and sore throat, the last time about six months ago; did not change the diet till some time after the experiment had been tried on the stronger part of the family, and though so young and so delicate, was the only one of the party who retained for any length of time an inclination for animal food. We should not of course like to appear by name before the public, but for any other use you choose to make of them, my observations on this or any future occasion are quite at your service.

CASE XXII.

General Debility, Mental Weakness, Sleeplessness, and Headache.

FROM A CORRESPONDENT.

Sandon, near Royston, Dec. 28, 1814.

Dear Sir,

About two years ago I was so very sickly that I had but little enjoyment in life. My great complaint was general debility, which daily increased upon me, took away all desire and ability for exertion, and rendered my mind incapable of attending to any subject for any length of time. Occasionally I was under a considerable stimulus and animation, which were followed by coldness and languor. It is not an easy task to make those persons comprehend me who have never felt this distressing debility of the human frame, which so materially affects the spirits, and deprives the mind of all its energies. I am convinced that man is completely a material being, and that all permanent courage and strength of motive spontaneously result from the strength and purity of the physical system. Sleep

did not seem to benefit me; my appetite was craving, and seldom satisfied, and once a week I was subject to a distressing sick headache. My fluids were evidently in an impure state, consequently the solid parts were not nourished; for impurity cannot impart strength, and hence that general debility of which I complained. Having read Mr. Newton's work, and your publications, I resolved to adopt the use of vegetables with distilled water, and now, after the experience of nearly two years, I can say with the strictest truth and certainty, that my health has been gradually improving up to the present time. My strength is greater than it ever was before; my painful sensations have left me, and my headache seldom attacks me, and *never* with its former violence. I do not mean to say that I am perfectly well; such an idea would be absurd, and contrary to the laws of the human constitution; but I am certainly better in health *now* than I remember ever to have been in any former period of my life. The comparison is not to be made between me and any other person, but between what *I am now* and what *I was before* I adopted this regimen.

Vegetables are certainly the natural support of man: they recommend themselves by their freshness and purity; and by their natural sweetness and agreeableness to the palate. They require so little trouble to prepare them, and are always a nice, clean, and delicate food; while dead animal substances are very offensive to the senses, and it becomes a very dirty and disagreeable task to cook and prepare them for the appetite. The slaughter of animals is also a ferocious and disgusting act, which greatly opposes the growth of benevolent dispositions. Comparative anatomy has clearly proved that man is, in his construction, an herbivorous animal, which ought to have great weight with every rational mind. The world, sir, will thank you, in some future time, for your labors in one of the most benevolent investigations that can interest our understandings. Yours, sincerely, G. G. FORDHAM.

Mr. Fordham received, in the course of his attempts to improve his health, convincing proof of the necessity of uniting the use of the pure water to the vegetable regimen. He at first left off animal food only, using the same water to which he had been accustomed. But he found the change irksome, complained much of his feeble and fastidious stomach, and did not appear to receive due strength and nourishment from his food. To some inquiries which I made on this subject, Mr. Fordham sent me the following answer:

"You are perfectly correct in the idea that the vegetable diet was irksome and uneasy to my stomach *before* I had united with it the use of distilled water. I thought at first, that the benefit of distilled water must be a mere fancy, and I even ridiculed it as trifling and absurd; but I am now, by experience, thoroughly persuaded that it is of the greatest importance. I felt an immediate benefit, my stomach was easy and light, and I did not experience the slightest sense of weakness, but a gradual increase of strength. I am convinced that the use of distilled water greatly assists the stomach in the digestion of vegetable substances."

Mr. Fordham, I must add, is a young man, under thirty years of age.

CASE XXIII.

Disposition to Pulmonary Consumption.

Feb. 20, 1815.—Having received the appointment of physician to the General Dispensary, Aldersgate-street, in the year 1810, it has given me the opportunity of making more numerous trials of what can be done by regimen than I before possessed. It is obvious, however, that the description of persons, who apply to these institutions, is not such as can, in general, be wholly depended upon, either for regularity of conduct, or for veracity. But, I believe, that in the examples I shall select, due attention was paid to the regulations enjoined.

J. U., aged about twenty-seven, applied to the dispensary, about Christmas, 1810, for a severe, dry, rending cough. I thought the man, from his habit and appearance, was becoming consumptive. He was thin, and rather emaciated. He had been troubled with the cough only during the winter, but he said, that for three or four years he had found his breath fail. He could not take exercise so well as formerly, nor go up stairs. I advised him, therefore, in conjunction with the medicines suited to his case, to adopt the regimen, with which he declared himself perfectly willing to comply.

He soon lost his cough; which, however, I do not attribute to this change. He informed me, moreover, that he found immediate relief from it. He found his respiration strengthened,

and, in no long time, he became as equal to exercise as in the former part of his life.

I saw this man occasionally for three years, during which time he continued in improved health; but he remained thin and meagre; and he had some returns of cough, but of no great violence, the two following winters. I remained, therefore, of the opinion I first adopted, that he had been really on the verge of consumption. It is, however, impossible to prove this to the complete satisfaction of others. In internal diseases, we must content ourselves with probable conjectures. After this time he changed his residence, and I have lost sight of him.

This man kept a ham and beef shop; and he cooked his meat by steam. He found it easy, then, to prepare his distilled water by a part of the apparatus which he employed in his business. I was satisfied, on this account, that he really, in this respect, followed the directions given him.

CASE XXIV.

Chronic Pains of the Bowels, Bloody Discharges, and Constipation.

J. K., aged eleven, had, in the beginning of the summer of 1810, the scarlatina. On recovering, it was observed that the abdomen was too hard; he complained of pains of the bowels, and had often bloody stools. He took a good deal of medicine without benefit, and continuing ill, became my patient at the General Dispensary, in February, 1811.

He complained of severe pains of the bowels, apparently like colic, attacking him two or three times in the course of the day. The abdomen was so hard, that it would not yield to the pressure of the hand, and strangely protuberant, irregular, and deformed. He was in a decaying state of health; but the pulse was regular and natural. The bowels were irregular, but commonly bound.

As I thought there was little probability of this boy being cured by medicines alone, I proposed to his mother to join the regimen to the use of such remedies as he appeared to require; to which she gave her consent. He began about the middle of February, 1811.

The pains of the abdomen continued to recur with just the

same violence for about half a year. Hardly a day passed without his being obliged to go to bed in consequence of them. About August, they remitted for three or four weeks, but they then recurred with great severity. Toward the end of September they became much less severe, and he was able to go to school, and to follow the common occupations of his years.

For the remainder of the year, he continued in improved health. The pains of the belly were either gone or very trifling; the bowels were nearly regular.

But though this, as a constitutional disease, was nearly cured, as a local disease it continued with very little change. The abdomen was not quite so hard, but it still continued tumid, and with much irregular deformity of shape.

After he had been a patient of the dispensary a twelvemonth, he ceased to attend, and I have since lost sight of him.

CASE XXV.

Leucorrhœa, Fluor Albos, or the Whites.

Another patient of the General Dispensary afforded me strong evidence how much the sense of weakness, which is so much complained of under the vegetable regimen, is produced by the use of common water. This patient, E. F., aged sixty, was afflicted with *leucorrhœa;* but I do not think it worth while to relate the particulars of her case. I was induced to recommend her to use the regimen, from some circumstances in her general health; and she used it four or five months with evident advantage. Some short time afterward she came to me, at my own house, complaining much of weakness. Upon inquiry, I found that she had quitted London for about a month, to keep a house at Hornsey; that there she had continued the vegetable regimen, but had not used the distilled water, thinking it unnecessary in the country. I explained to her what I thought the cause of her weakness; and she found what I said to be correct. Upon returning to the use of the distilled water, the sense of weakness vanished.

This woman was at a time of life at which people are very apprehensive of permanent injury, from relinquishing animal food. But she certainly experienced much benefit, as was evident from her improved health, and even from her improved looks. She became stronger, and rather gained flesh.

CASE XXVI.

Feebleness of Strength.

Though it is indisputable that animal food most commonly excites and increases the muscular power, yet even this does not appear to be universally true.* There are habits in which obviously, while it impairs the sensibility, it likewise diminishes the muscular strength. A lady somewhat more than thirty years old gave a striking proof of this fact. She had been an invalid some years, complaining principally of weakness, unable on this account to take proper exercise, and pallid. There is, perhaps, at the bottom of these ailments, some uterine complaint; but the symptoms are not very definite. During the year 1812, she adhered to the regimen of distilled water and vegetable diet. In consequence she became less pallid; the countenance expanded and became more animated, and she gained strength. These changes must have been occasioned by the relinquishment of animal food; for she had previously been in the habit of using the distilled water, with little influence on her health.

Notwithstanding such evident advantage, I was not a little surprised to find that, at the end of the year, this lady thought proper to abandon the system and return to the use of animal food. The immediate motive to this I could not exactly learn; but suspect that the wish to avoid singularity had a predominant influence on her resolution.

CASE XXVII.

Hypochondriasis, Nervous Weakness, and Constipation.

Feb. 20, 1815.—Mr. P——e, aged now thirty-one, a respectable tradesman, consulted me at the end of the year 1811, under great agitation of mind, He had been ill between three and four years; had frequent uneasiness and oppression of the head, for which he had been repeatedly cupped. From this he had received benefit, but it was only temporary; but, besides, he

* I am of the opinion that Dr. Lambe had not at the time he wrote duly considered this subject. For a great variety of facts in proof that animal food is not most conducive to physical power, I refer the reader to Graham's Science of Human Life.—S.

obviously labored under the highest degree of nervous irritation. He labored under great depression of spirits; constant anxiety of mind; he could not talk of his complaints with any calmness; and was constantly uneasy and walking about. Going to a fire oppressed his breath so as not to be bearable. The bowels were habitually bound.

He informed me that till the age of twenty-three, he had lived principally on vegetable and farinaceous food; that about this time he began to live much upon a fuller diet of animal food, eating it twice a day, and at the same time became more sedentary; that in consequence he grew fatter, but his health became worse, and he gradually fell into the condition I have described. He had heard of some good having been done by the regimen in a case which he thought similar to his own, and on that account was anxious to try it.

I encouraged him to so, ordering him at the same time a few laxative medicines, which I thought he required. He began at that time, and, as he informs me, has adhered to it ever since. I advised him also to use much exercise on foot.

For a few months the symptoms of this disease continued in full force, but then all his sufferings became alleviated; and during the second year he was quite a different man. He regained his spirits, could attend regularly to his business, and his complaints, though not wholly gone, were comparatively quite trifling. He had lost flesh very much, a loss he found no occasion to regret.

He seems at present in perfect health, subject only to such trifling ailments as happen to every body. Latterly he has gained flesh.

I do not know that this disease was tending to death, or attended with any immediate danger. But the mental sufferings which the patient underwent, were, in my opinion, more severe and harassing than the symptoms of many fatal diseases.

CASE XXVIII.

Difficult Urination, Falling of the Womb, and Constipation.

February 20, 1815.—M. J., aged twenty-five, applied to the dispensary in October, 1812. The uterus was prolapsed; she complained of great irritation in making water, and, besides, had obstinate constipation of the bowels, with tumefaction and

soreness of the lower part of the abdomen. Under these complaints she had suffered about three years, and to so great a degree that she was hardly able to walk about, or do the work of her house.

She had been at another dispensary, and had a good deal of medical advice, without gaining any effectual relief; and, therefore, though the general state of the health did not seem very bad, I thought medicines alone would prove ineffectual. I therefore proposed the regimen to her, in addition to some demulcents, laxatives, and the regular use of glysters, to unload the lower part of the intestines. She declared herself willing to do any thing at all likely to relieve her; and she began it on the 8th of November, 1812.

From this plan she found a speedy alleviation of her sufferings. In two or three months the soreness and tumefaction of the bowels were removed, and gradually cathartic pills alone did their proper office of unloading the bowels, without the aid of injections. The most obstinate symptom was the pain and irritation in making water. But one day in October, 1813, she voided a calculus about the size of a small bean; and then this irritation ceased, and all her complaints were effectually relieved.

She, like the subject of Case XIV., appeared to become more hot and feverish from relinquishing animal food. The head became oppressed, with a sense of fullness and pain. These effects (for they cannot be thought the direct and natural effects of vegetable diet) seem to me to be analogous to the well-known fact of the pulse rising sometimes by bleeding. A degree of fever that was, as it were, latent and suppressed, becomes evident by the relinquishment of animal food. These symptoms gradually subsided.

It is said that patients laboring under diabetes become more thirsty and feverish by the use of vegetables. This may be true, and I should account for it upon the same principles; but it does not, in my apprehension, form any solid objection against their use even in this disease.

This woman had at the Christmas following a very severe attack of inflammatory fever. The bowels were tender and inflamed; and the head was affected even to the extent of delirium. But in about a fortnight it subsided, and she was restored to good health. When I last saw her, three or four months ago, she continued her regimen, and was in very good health.

The calculus was certainly only a portion of this woman's sufferings. I may observe that it has been proved very dis-

tinctly that vegetable diet alone will not prevent the formation of calculus. A writer, whom I have cited more than once (Lobb, on Stone and Gout), has given a case where a person became first afflicted with calculus, who had used a vegetable diet eight years.

CASE XXIX.

Cancer of the Uterus.

10th March, 1815.—On the 16th of January, 1813, a woman became my patient at the General Dispensary, who, from her good sense and decency of manners, gave me a prospect of being able to effect what I had long had at heart: to treat a case of carcinoma, in an early stage, as I judge such a case ought to be treated, under the inspection of upright and enlightened professional men—terms, which it needs no testimony of mine to show to be applicable to the gentlemen, my colleagues, at that institution.

A. R., in the forty-third year of her age, had been afflicted for eight months with very severe pains, referred principally to the region of the uterus. The pain, she said, was darting and shooting; and though seated principally in the uterus, it was sometimes in front, at other times posterior, about the rectum. For, about the same time, she had had a discharge of a thin, fœtid, and apparently acrimonious ichor, sometimes tinged with blood. This discharge inflamed the skin of the thighs, with which it came in contact.

I took an early opportunity of making an examination of the parts. I found the os tincæ low down in the vagina; it was not much changed in form; perhaps it was a little fuller than natural. But it was very tender; a little handling gave uneasiness; and the pain, as she told me, from this cause, lasted almost the whole succeeding day.

I could not doubt that these were symptoms of cancer, an opinion in which I was confirmed by the habit and appearance of the subject. She described herself as having been long in a feeble, delicate state of health. The appetite had been very bad even for years, but had been latterly much worse. She had lost many teeth; and the gums were very lax and spongy. The countenance was pallid; the strength was somewhat impaired; the breathing bad, particularly upon

exertion, or going up stairs. Toward night the legs swelled. The pulse was one hundred.

On the 7th of April, this woman appeared before the consultation of the medical officers of the dispensary. I believe that none of these gentlemen had any doubts with regard to the nature of the case. She has, during the course of the treatment, repeatedly been examined by them. The reports, which were drawn up at each examination, I shall subjoin to my own account of the case.

With regard to the medicines that she has used, I may say here, once for all, that it has been necessary to employ opiates pretty freely, from the beginning of her treatment to the present time, both to relieve the pain and procure sleep; this last has been effected very imperfectly. Saturnine lotions have been useful to prevent the inflammation, and excoriation of the discharge. Aperients (principally sulphate of magnesia) were also at first necessary, but in a few months ceased to be requisite. She has taken also a few other medicines, occasionally, but as they had no marked influence on her complaints, I need not trouble the reader with an account of them.

She consented to give the regimen a fair trial, and entered upon it on the 10th of February, 1813.

I also advised her particularly to use as much fruit as possible. As the strength was radically impaired, I recommended her to be sparing of exercise, but rather to use considerably a horizontal posture.

For more than half a year very little ground was gained. The muscular strength diminished, and the pains continued to be very severe. But the pulse was reduced in frequency: it became habitually about eighty in the minute; the discharge became less offensive, and, apparently, less acrimonious.

In August, 1813, she had a considerable respite from pain, which continued for three weeks. But it then recurred with great severity; but still, though the paroxysms were as frequent as during the former part of the year, she found that the severity of them was upon the whole sensibly diminished. The respiration became rather stronger. With the pains, the discharge (which had been checked) returned; it was green and fœtid.

In the middle of December, the discharge nearly ceased, and the pain likewise. What she now principally complained of was an almost total want of sleep, and of appetite, with great lowness of spirits.

During the ensuing half year, the symptoms of cancer were

more completely got under. In the middle of April, 1814, the relief was very great. In June the pain was quite gone, and the discharge was very trifling. In August she was discharged, principally at her own request, with all the symptoms of carcinoma subdued. The general state of the health, too, was considerably improved.

But in the October following, she again became a patient. The pain had returned with severity, having been brought on, apparently, by the approach of the cold weather. It was again attended with some trifling discharge. This aggravation of the disease was, however, of short continuance. In four or five weeks it was removed, and she again was restored to her habitual state of a cessation from pain, almost complete, and the discharge stopped, except, perhaps, in a quantity so small as to be hardly perceptible, and as to be no inconvenience.

The present state of this, considered as a local disease, is very nearly as has been just described. Habitually she is without pain or discharge. But she has occasional attacks, which last a few days, or a week. They are severe enough to break her rest, and give her uneasiness; but not enough to cause confinement, or to prevent her doing the work of her house. The last of these attacks was in the middle of February of the present year.

The proper symptoms of carcinoma, then, the pain and the discharge have been subdued and kept under by this treatment. The account to be given of the general state of the constitution, though not so satisfactory as the effect upon the local disease, has been still sufficiently encouraging.

In fact, the chief complaints, now for about fourteen months, have been much less regarding the original symptom of the disease than the general state of the health. Want of appetite, the sleep disturbed by tumultuous dreams, and sometimes wholly interrupted; want of breath, lowness of spirits, general debility, aching, and lassitude, have been the principal subjects of complaint. Upon the whole, however, the health has sensibly improved; so that she is, at present, considerably better than she was a twelvemonth ago.

The pulse continues calm, being commonly about eighty in the minute. The respiration is still not strong, but it has mended. The appetite remains bad. The sleep is disturbed, but upon the whole it is more calm than formerly. The muscular strength is a little improved; the spirits are better; there is more cheerfulness and animation in the countenance.

I think it right to add that, except from the use of opium, what she has found the greatest benefit and comfort from has been the unrestricted use of fruit and recent vegetables, as radishes, etc. When she has been able to use any other sustenance, the stomach would receive willingly something of this nature; and at night, when the tongue and fauces were dry and clammy, chewing some fruit was found to be the most certain and pleasant resource.

When we consider the deplorable, and hitherto desperate nature of this disease, that when affecting the internal organs, it must be deemed a more advanced stage of the complaint than a state of scirrhus in an external gland, this account will, I hope, be deemed as satisfactory as can be reasonably expected. The conclusions to be drawn from the facts stated are the very same as those which flowed from those related under Case XIII. of this work. If I therefore repeat them, I trust that the importance of the subject will be deemed a sufficient apology. It follows then from this statement—

1st. That this disease was evidently carcinoma. Its history, at the first examination, made this sufficiently evident.

2d. That the disease continues to be carcinoma at this time. The same symptoms which at the beginning authorized us to give it this designation, still recur, but with a much inferior degree of severity. The effect of the treatment then has not been, strictly speaking, to cure the disease, but to control and mitigate the symptoms.

3d. But by the regimen, life itself has been preserved. It will not be disputed, I suppose, that even a twelvemonth is as much as, under the common habits of life, a case of uterine cancer might be expected to last. Two years must be, indisputably, beyond all probability. But five-and-twenty months have now elapsed, and the patient is not only alive, but in a state of improved health.

4th. The disease has made no local progress. On the contrary, the symptoms have been all soothed and tranquilized.

5th. The ulcerative process has been wholly superseded.

6th. I may add that the facts of this case may be applied to the treatment of dropsy as well as to that of the cancer. There was, when she first became a patient of the dispensary, some anasarcous swelling of the legs, as I have noted. This continued nearly in the same state for the first year, or year and a half. It is now nearly, if not entirely gone. The flow of urine has throughout continued very copious.

I need hardly say how much encouragement the result of

this case gives to those afflicted with external cancerous tumors to adopt this mode of dieting. For here was every sign of a radically impaired and enfeebled constitution; the appetite greatly injured, the breath bad, the legs swelling, the strength declining; in fine, all the great and important functions imperfectly performed, though there was no breach of substance, nor any apparent great local disorganization. How absurd then (by the way) is it to say that this disease is in its origin local. But we know that many persons with true cancerous tumors enjoy, even for years, a relatively good state of health; most undoubtedly, infinitely better than the subject of this report. I should hope, therefore, that gradually they may be made sensible of what is most proper to enable them to pass the remaining term of life with as much ease and comfort as their situation renders admissible.

It remains only to add to this account the reports of the case taken at the Consultation Committee at the dispensary.

GENERAL DISPENSARY.

Present at the Consultation Committee, 7th April, 1813, Dr. Clutterbuck, Dr. Birkbeck, Dr. Lambe, Mr. Vaux, and Mr. Norris.

Mrs. A. R., aged forty-two, has complained since June last of severe shooting pains at the lower part of the abdomen, with a great discharge of fœtid acrid matter; there likewise exists considerable tenderness of the hypogastric region, with difficulty of making water. For upward of five years, the catamenia have not occurred, but pain and hardness of the breasts have been frequently noticed. The bowels are regular, but the evacuations are attended with pain, and the discharge of clots of blood. Within the vagina no swelling can be perceived, but the uterus has descended. She has employed opium with temporary alleviation of the symptoms, and other medicines without any benefit.

August 4th, 1812.—Present, Dr. Clutterbuck, Dr. Lambe, and Mr. Vaux.

Mrs. A. R. asserts that the pains are aggravated, but the discharge is less in quantity and less fœtid at present; such variations, however, she states are not unusual. The lower ex-

tremities are become anasarcous. Her rest is now much interrupted. The pulse is generally about eighty in the minute, with frequent intermissions ; a circumstance also noticed about two months since. *Sumat Hydrosulph. Ammonia gtt. vj. ter in die sensim dosim augendo.*

February 2d, 1814.—Present, Dr. Clutterbuck, Dr. Birkbeck, Dr. Lambe Mr. Vaux, and Mr. Young.

Mrs. A. R. states that the pains are much easier, though she still obtains but little rest. The discharge, which is less than formerly, is yellow and without blood. The hydrosulphuret was soon discontinued, and cort. cinchonæ taken, which is directed to be discontinued."

August 3d, 1814.—Present, Dr. Clutterbuck, Dr. Birkbeck, Dr. Lambe, and Mr. Vaux.

Mrs. A. R. now reports herself to be much improved. There is not any discharge, and but little pain. She has chiefly used opium, with a vegetable diet and distilled water.

February 1st, 1815.—Present, Dr. Clutterbuck, Dr. Birkbeck, Dr. Lambe, Mr. Vaux, and Mr. Young.

Mrs. A. R. declares that she has persevered in the use of vegetable diet and distilled water since the last report, with no inconvenience, excepting the sense of weakness, and considerable craving for food. She is in all respects improved.

REMARKS

On some Cases of Disease which have appeared under the Regimen.

It is not possible, in my opinion, to devise any other proof with regard to the agents which have the greatest influence on health than that which has been given in the preceding pages I have taken, as it has been seen, examples of diseases ac knowledged to be incurable, when they were presented in such a stage as to afford any rational prospect of relief, and have given the results of experience. To these are added observations, accumulated now to a considerable number, in other cases, as they have occurred in practice. These may not all of them have been of equal weight or importance. It is enough,

that they were sufficiently serious to excite the anxiety and apprehension of those who were the subjects of them. These observations, thus promiscuously taken, concur uniformly in corroborating the conclusions drawn from the diseases, avowedly incurable by medicine. They are, therefore, the more valuable, as tending to fix the practice, which has been found the most beneficial in these last.

If in these the most sanguine hopes, that might have been formed of the effects of the practice proposed, have not been fully realized; if perfect cures have not been effected, nor the body restored to a complete state of health and integrity, it will be allowed, it is hoped, that what has been effected is neither trifling nor despicable. In cancerous diseases, in particular, to have relieved the horrible and excruciating torments of the disease; to have prevented ulceration, with its attendant miseries of loathsome, fœtid, and excoriating discharges; to have preserved life, and that in such a degree of comfort as to enable the patient to enjoy society, and be equal to the common duties and occupations of the world; to have effected so much in cases where neither age, nor a completely broken constitution, present invincible obstacles to all amendment, is surely to have achieved much for suffering humanity; and amply compensates the proposer of this regimen for the anxiety and labor in which he has been involved, in consequence, for more than ten years; the obloquy of the ignorant and the misrepresentations of the malevolent; and, he must add, the heavy pecuniary loss which he has been obliged to sustain in collecting the evidence which he has been at length enabled to lay before the public.

Such, then, are the benefits which have been really gained; and the evident inferences from these facts will remain unshaken whatever may be the future progress or final issue of the cases which have been treated.

It is neither pretended, nor expected, that a morbid body can, by any art, be kept free from the attacks of disease. There seems to be in the body, as in vegetation, the seeds of future diseases, which continue latent and inactive for a length of time; they then germinate, increase, pass through their regular stages, and come to a termination. What is the secret condition of the frame, which gives occasion to these phenomena, we are entirely ignorant. It is placed wholly beyond the reach of the senses; and appears to be without the sphere of physical and experimental inquiry.

It is, however, beyond a doubt, that between that state of

the body, in which there is merely a diseased disposition, and that consequent state, in which disease becomes active, there is a very long, though not a strictly definable interval. Thus the breath may begin to fail for three or four years before a person falls into a consumption. A change, therefore, takes place, certainly in the functions, and probably in the structure of the organs of respiration, long before the accession of confirmed cough and hectic fever. We see it more evidently in the cancer, in which there is pain, perhaps, for a series of years, before there is any thickening of the parts, as happened in the first of the cases of cancer, which I have related in this work.

Now, the very state of health which persons have, upon the whole, enjoyed under the regimen which I have described, shows that much of diseased action can, by its use, be superseded. But it has equally appeared that this has only happened imperfectly. Not only have the attacks of habitual diseases been continued or renewed, but some examples even of new diseases have taken place, of which there had been no indication in the former part of life. They have not been numerous, but it would be inconsistent with my duty, as a faithful relator of facts, to pass them over in silence. I have thought it proper, therefore, in this place, to set down such of these occurrences as I have thought most worthy of notice.

Case I.—I shall first mention a local disease of the cheek, which occurred to the subject of the first of the foregoing cases. He had been subject to common pimples from the age of eighteen; but these, under the regimen, had been almost entirely subdued. But in the year 1809, about the beginning of the fourth year, some small tumors appeared on the face. They have occupied principally the left cheek, and continued for several months, red and sore, but without any discharge. They gradually rose higher upon the skin, then became dry, and peeled off in the form of a scab, leaving the parts beneath clear and sound.

When some of these tumors had gone through their course, others appeared, and had the same progress; and as they have continued fixing on different spots, even till this present time (February, 1815), it is probable that almost every portion of the lower part of the cheek has been successively the seat of this affection. But when the scab has fallen off, the skin underneath has been left sound, without pitting, or other deformity.

I believe that the essence of this disease has consisted in a

circumstance, to which I have alluded more than once in the course of this work, as often occurring in the human body, namely, that the skin of this cheek was unsound; that portions have perished, been thrown off by the action of the vessels, and have been regenerated. Latterly, though the disease has not absolutely ceased, it has very nearly so; it is at present so trifling as hardly to deserve notice, and the parts are more sound and healthy both in feeling and appearance than when it first broke out.

Case II.—In another of the persons who had used this regimen more than two years, there took place a discharge from the urethra, very copious, like a gonorrhœa. There was often united with it a considerable irritability of the bladder; but, otherwise, it was not accompanied with pain or inflammation. This discharge continued for about three years, and then ceased.

Case III.—I have said many years ago that one of the members of my own family, then a boy about eight years of age, was of a deeply scrofulous habit (See my Inquiry into the Origin, etc., of Constitutional Diseases, p. 61). In the course of this investigation I have received a strong proof of the correctness of this observation, and of the difficulty of completely eradicating such a disposition.

At the end of December, 1811, when he had used this regimen between five and six years, after having been skating during the day, the hand were observed to be stiff and a little swelled. On the day following, the face on the right side swelled, and the tumefaction increased, extending from the eye to the clavicle. The seat of the disease appeared to be about the middle of the lower maxillary bone. The bone itself became thickened at this part, and roughened upon its surface. Matter came from the part, both internally into the mouth, and externally through the cheek. This happened repeatedly, for two months, when the ulcerations finally closed, and the parts became well. But for a couple of years the bone continued thickened, and the skin adherent to the parts underneath. After that, the adhesion of the skin was gradually loosened, and the parts were restored to their natural structure. But the bone continues thickened for near an inch through its whole body.

This was, in fact, a very trifling disease. But it appears to have been the germ of one which is the most serious and distressing of any which affects the human body—a fixed and radical disease of the substance of the bone.

Case IV.—A boy of about ten years of age had lived on this regimen about three years. He had enjoyed good health, was very stout, but was not without occasional slight indispositions, enough to make him lie down for a day or two, but hardly to be regularly confined. About the beginning of the year 1811, he had the *angina parotidæa*, or mumps, attended with some fever of a low or typhus kind, and this hung upon him at least a fortnight. It left behind it a tumor, on the right side of the neck, which remained for four or five months. It was attended with some shooting pain, by no means severe; but was perfectly hard and incompressible, as large almost as an egg, and gradually rose much above the surface. Toward the beginning of summer, the apex of the tumor softened, and it ulcerated. A good deal of purulent matter came out, the skin gradually retracted, and a hard and conical tumor remained projecting beyond the skin. From this there was, of course, a continued flow of matter; but besides this, there was a quantity of a gritty substance separated, which had been imbedded in the body of the tumor. This separation took place repeatedly, but at separate intervals, and in consequence the substance of the tumor gradually wasted, and was finally reduced to the level of the skin. Then the ulcer dried up and cicatrized. This whole process took up about a twelvemonth.

But though the ulcer cicatrized, some thickening remained. In the course of the summer of 1813, a fresh ulceration took place, and a small quantity more of the same matter came out. The ulcer this year continued open a month.

It showed some disposition to break out again the following year, 1814. There was, however, no breach of substance, but for a single day. Since that he has remained quite well.

This boy showed strongly in his countenance the ameliorating effects of a vegetable regimen. He had before he adopted it great fullness about the head, and a sternness, not to say a ferocity, of the countenance. After a certain time, the features relaxed, and he gained much more the aspect of good humor and benevolence. It cannot be doubted that these changes of countenance were the index of corresponding changes of the moral disposition. The regimen, however, had been persevered in three years before they took place decidedly.

Another example has occurred of a pretty severe affection of the chest, in a lady who had used the regimen more than four years. And I should think it proper to notice it more particularly, except that it cannot be said at this present time

(March, 1815) to have completely subsided. I shall say only, therefore, that it was a peripneumony, designated by its common symptoms of pain in the chest, cough, and expectorations.

Such are some of the principal examples of disease under this regimen which have occurred to myself, in addition to those I have noticed in the general course of my narration. Others of smaller consequence, as slight cough, colds, pains of the face or limbs which have been observed, I omit as not deserving of a distinct relation.

It is very obvious to the most superficial consideration that these occurrences have not been the consequences of the regimen, and therefore can form no solid objection against it. They have in truth been, not in consequence, but in spite of it. Some of them were clearly natural processes. Thus the glandular tumor, which has been last described, was a process for bringing the concreted matter, which was finally evacuated, to the surface of the body. It may then be suspected that the other examples were natural processes likewise, though the fact is not so obvious. At all events they were not diseases of debility, which is apprehended from vegetable regimen; but were inflammatory diseases, such as would be judged to require depletion rather than stimulation. They form then, I repeat, no objection to the regimen.

It will follow, evidently, from the whole course of my narration, that for the most part the use of this regimen affords no hope nor prospect of great relief from deep constitutional disease in a very short time. To jump from a state of disease to a state of health is contrary to the laws of nature. Those who hold out prospects of this kind can have no other object than to impose upon the credulity of mankind.

Those who think fit to undertake it should be well aware of its aim and intent. This is not so much to obtain perfect and uninterrupted health (objects, perhaps, hardly consistent with our present condition), as an alleviation of suffering, and to pass through the years that are allotted to us with the least possible evil. These are objects which every reasonable person will acknowledge to be the most important of all temporary and sublunary concerns.

The observation of a regular system of dieting, such as I have described, fulfills this object by radically strengthening the powers of life. It has no control, or at least a very imperfect one, over the immediate symptoms of disease. The general habits of the system therefore remain in a great degree unaltered. But slowly and gradually the constitution becomes changed, at

least in its powers, if not in its primordial structure. The powers inherent in the system to preserve the life of the body, to overcome the operation of agencies tending to destroy the body, or to derange healthy action, and to restore parts which are defective either in their organization or power, are strengthened and invigorated.

This doctrine, no doubt, will never be acknowledged by those persons who are under the influence of the common prejudice, that vegetable diet has a natural tendency to produce weakness. The facts which appear to favor this notion are so strong, and the assertion is so confidently made by a multitude of observers, who have had neither object nor interest in making false representations, that I despair of being able to eradicate it from the minds of hasty, superficial, and prejudiced inquirers. But those who will calmly and dispassionately weigh the facts which I have advanced, will, I have no doubt, acknowledge that I have traced the sense and appearance of weakness to its proper source, the agency of foreign matter upon the system; and that the accusations brought against the vegetable regimen are in this respect groundless. Remove these noxious agencies, and then the true operation of the vegetable regimen, in radically strengthening the vital powers, becomes obvious. But to produce a very great change in the habits of the constitution must be the work of time, and even of a great length of time. This must be the effect of the patience, not of weeks, nor of months, but of years. There must, too, be a natural limit to the change which it is possible to effect. This limit it is impossible to define, independent of experience; and it will, of course, be different in each different constitution.

It may be thought that the examples which I have given of the pertinacity of diseased symptoms are extremely discouraging, and hold out a melancholy prospect to those who are great sufferers. I suspect that the great sufferers will not be of this opinion; but that, for the most part, they will be contented to put up with small evils, if they can escape the great. However, with all men, the first and greatest object in life is to inform the reason. Let them, then, well consider how slowly disease itself is engendered; and, therefore, how unreasonable it is to suppose that it can be quickly eradicated.

To illustrate this point, let us take a very common example. If any disease is acknowledged to be artificial, it is the gout. A man then has his first fit of gout, we will say, at forty; he has repeated regular paroxysms, it may be for twenty, or five-and-twenty years; then, perhaps, the seat of the diseased action

becomes changed; the gout begins to desert the limbs; the head becomes affected with apoplexy or palsy; the lungs with cough, dyspnœa, or pneumonia; the stomach with spasms, sickness, vomiting, or diarrhœa; and, after suffering a few years more, he at length dies.

Now here we see that, for a certain number of years, this person enjoyed health, though under the influence of powerful morbific causes; for a certain number of years more, the causes continuing to act, a new train of phenomena are produced, which we call gout; and, finally, the powers of life declining, a third series of morbid actions is established, seated in the internal organs.

We must acknowledge, then, the body to be under a constant force, which must impress and modify it at every period of its existence; but that the phenomena of diseases depend not wholly on the action of these forces, but on the state of the system in conjunction with them. The system itself is in a constant state of mutation; so that the effects of agents at one period of its existence is dissimilar to the effect of the very same agents at a former or succeeding period.

Now as these agents have, for the most part, been applied during the whole of life, how utterly unreasonable must it be to expect that great changes can be produced speedily by the mere cessation of their action. Surely we ought rather to expect, even *a priori*, that the restoration to health will be analogous to the formation of disease; that the amendment will be by degrees almost insensible at short intervals of time; and that many must content themselves with an alleviation of suffering rather than a perfect restoration to health. And when we consider the enormous load of misery under which some of our unfortunate fellow-creatures are oppressed, who labor under some of the forms of chronic disease, this prospect must be allowed to be most consolatory to suffering humanity.

I may mention here, incidentally, that under the theory which I have chalked out, the diseases which prove fatal can rarely be considered to be strictly local. I know that almost all medical theorists espouse an opposite opinion. They dissect the dead body; such and such, say they, were the appearances after death; here then was the seat of the disease, every other part of the body was sound and uninjured. But let it be considered that a part, whose organization is perfect to-day, to-morrow perhaps mortifies. The powers of any part of the body then may be lost, though the structure is uninjured; and, therefore, the parts of the body, in which no diseased action has

taken place, may be inherently as much diseased as those the texture of which is obviously changed. They might then have taken on diseased action, if it had not been suspended either by the existing disease, or prevented by the death and dissolution of the body.

These considerations show that dissection can never completely unravel the phenomena of disease. By dissection we can discover only the final changes of composition, which the body undergoes. But disease is a change of the powers and actions of the living parts; that is to say, of parts of which, for the most part, the organization continues perfect.

If then disease be seated in and pervade the whole body, it must be counteracted by measures which affect and pervade the whole body likewise. Now the whole series of observations which have been made on the system of dieting recommended in the preceding pages, evinces that it affects the whole frame, every organ, and every fibre of the body.

As a whole, the body under it attains its just stature, due proportions, and proper strength, provided there be no original defect of structure. In consequence, all artificial defects of structure are tending to disappear under it. The skin appears to become more firm and dense. The hand and foot in particular become harder, less white and doughy, but perhaps more fleshy. The pungent heat of the palms of the hands and soles of the feet, with which many are tormented, disappears. The whole surface of the body commonly becomes cooler; but the temperature of the body, as indicated by the thermometer under the tongue, is the same as under common regimen.

The hair grows with much greater luxuriance and rapidity. In some in whom it was dry like hay, it regained a due softness and moisture. In others the disposition of the hair to fall off has been removed. Premature grayness appears to be prevented.

All the secretions are promoted, and re-established where they had been checked. Hence, the skin becomes moist and perspirable; the mucous discharges from the nostrils and the trachea become more copious. On the same principle, the bowels become regular in their action. The urine is extremely copious and commonly clear. The saliva loses all viscidity and clamminess, and on this account much uncomfortable feeling in the mouth and fauces are removed. The teeth become sound and clean, the gums firm, and strongly attached to the teeth and alveolar processes. The tongue likewise grad-

ually becomes divested of its foul covering, and becomes moist and clean.

Though the regular perspiration be re-established, there is much less profuse sweating. Several of the young persons who have lived in this manner, have been observed playing in the open air in the heat of summer, or dancing in a warm room, unaffected and cool, while their companions were bathed in sweat.

Not only are the secretions more copious, but they are rendered much less offensive. The eructations from the stomach, and flatus from the bowels, are relatively inoffensive; and the fæces themselves become less disagreeable,* of their proper color, and healthy consistency.

Doubtless the whole composition of the circulating fluids is changed, but it is not possible, perhaps, to prove this chemically. But the whole body acquires a cleaner and a fresher appearance. The muddiness of the complexion vanishes. The sclerotic coat of the eye gives the strongest evidence of this change. From having been yellow and dull, it regains the pure and clear whiteness which is natural to it.

The body becomes more tolerant of heat, of cold, and of all the mutations of the atmosphere. Such impressions lose their power of injury; and the perpetual attention to guard ourselves against them becomes needless. In consequence, a lighter system of clothing may be adopted.

All the senses acquire a higher degree of perfection: the eye, the ear, the palate, the skin. The countenance becomes more animated and intellectual. The smile which plays upon the features shows the inward contentment of the heart. There can be no doubt that the apprehension, the memory, in a word, all the faculties which constitute the intellect, are improved.

The muscles acquire both flexibility and power; the movements of the body are performed, therefore, with greater ease and freedom.† With the power of motion, the love of exercise

* I have observed that when recent vegetable matter, unchanged by cookery, has been abundantly used, the fæces have acquired very much the smell of horse dung.

† I here suppose that there has been no great disease upon any of the vital organs; for in that case it has been observed, that the muscles have sometimes been affected with a sort of rheumatic stiffness, in consequence, probably, of disease being transferred to these parts. Having remarked this in two or three members of my own family, I must suppose that it will happen very often.

increases. The joints become better knit, and the body tends constantly to preserve its upright form.

Heaviness and drowsiness is dissipated. The sleep becomes lighter, sounder, more refreshing, and less interrupted by dreams. Upon the whole, the body seems to require less sleep.

The appetite for food becomes sound, strong, and healthy. There is no oppression or flatulency after meals; no fullness nor heaviness; no sense of satiety, disgust, or nausea. The pleasures of the palate are heightened by the increased delicacy of the organs; and the enjoyment produced by the free and unrestricted use of fruit more than compensates for the restraints thought to be imposed by the abstinence from stimulating viands. The nutrition of the body is likewise perfect. Many, undoubtedly, lose flesh; but this is not because vegetable diet affords an imperfect nutrition, but either from disease, or from the mere change of habit. Healthy subjects on this diet become full of flesh, and even fat.

These phenomena mostly indicate an increased sensibility of the whole frame. Perhaps there is no single nor infallible criterion of augmented vital powers. Probably, however, a more full and free respiration, and what is the consequence of this, an expanded chest, may afford the strongest indication on this point. Of this expansion of the chest, under this regimen, there have been several examples. To this is joined a slower, more full, and regular pulse; the pulsations of the heart and arteries are performed with diminished velocity, but with increased fullness and force. But in saying this, I speak only relatively of each individual. For in the absolute number of the pulsations of the arteries there is the same variety as in those who live on a mixed diet. In some the pulse is quick, in others slow, according to the original differences of the constitution.

This description, which has been taken from observations on many subjects, who have conformed to the rules laid down in this treatise, will, of course, apply to different subjects with different degrees of correctness. There may be obstacles in the state of the constitution which may oppose every attempt at restoration. The inherent powers of the body may be so far impaired, that it may be impossible to prevent even the dissolution of the frame. Age is the circumstance which, of all others, forms the greatest obstacle to all attempts at relief; and this is so powerful, that even under a mild disease, or no disease at all, I should be unwilling to recommend any change of habits which were ungrateful to the feelings. But at no period,

not even in the first stages of existence, if the powers of life are greatly sunk, is it possible to restore them; the principle of conservation may be, by care, cherished and prolonged for a short time; but it will then sink and be finally extinguished.

These facts prove no more than the importance of prudence and foresight in the conduct of life. I cannot, therefore, too earnestly impress the necessity of attempting to extinguish, as far as it is possible, the germ and embryo of future disease. To distinguish the signs of distant mischief is often in the power more of the enlightened parent, guardian, or friend than of the regular professional adviser. I consign, therefore, these my labors to the reflections of the discerning and benevolent few. To the mass of mankind, absorbed in selfish pursuits, or struggling to ward off poverty, I expect them to remain unknown, or if known, to be ungrateful. But I hope they will meet with a better fate in the domestic circle of retired persons, whose rule of life is to practice what is fundamentally right; to do their duty to themselves, to their relatives, to their fellow-creatures, and so to obtain the approbation of their own consciences, and the favor of the great Author of their being. If among these respectable circles it disseminates the knowledge of great practical truths, and produce the proper fruits of knowledge—more just principles, more rational manners, and an increase of solid comfort, my end will be fully answered.

APPENDIX.

VEGETABLE DIET IN WHITESTOWN SEMINARY, NEAR UTICA, NEW YORK.

Many people suppose that obtaining an education is necessarily attended with much expense, and that consequently none but the richer classes can be benefited by it. This is, however, a mistake. Almost any person may, by adopting a plain vegetable diet, attend school as long as desirable, with but very little pecuniary means; and in so doing he will enjoy better health, and accomplish more within a given time than those who adopt an opposite course.

At Whitestown Seminary, near Utica, N. Y., a considerable number of students obtain their education on the above plan. I spent a year at that place, commencing with the winter term in the month of December, 1847. There were from 150 to 200 students there, of both sexes, and from all parts of the United States.

The inmates had the privilege of either boarding in the boarding-house kept in one of the buildings, or of furnishing their own food in their separate rooms. The larger number chose the latter plan. The price for board in the boarding-house was $1 25 per week for those who drank tea and coffee, and $1 for those who took only water. The food furnished was very good, though plain. Flesh meat was given, I believe, once a day. The number who drank tea and coffee was very small, the most either caring nothing about it, or wishing to save the twenty-five cents a week.

On an average it cost those who boarded themselves about fifty cents per week, though some lived for considerable less. They would use bakers' bread, crackers, apples, and the like, and roasted potatoes, and such cakes and other articles as they could cook themselves on the stove top, in an oven attached to the pipe. Tea and coffee were never used, I believe, and meat very seldom. It was found to be very unpleasant cooking, and working with it, and disagreeable to have it in the rooms, which

were small; and others from experience had found they were better without animal food.

There were a few, however, who did not live far off, that brought their provisions from home—flesh meat, butter, cakes, pies, and rich food generally, such as is used by farmers in that fertile country. It was evident that among these there was more dullness, more illness and complaining, than among all the rest put together.

Many at the beginning of the term, for the saving of time and trouble, would live altogether on such articles as they could get at the bakers and stores, which were of course generally of the finer kinds, for coarse bread and crackers could not be had. But before a long time they would grow tired of these fine things, much sooner than those who partook of the plainer articles of their own cooking, and they would then resort to the latter plan.

Fine flour was found much more difficult to make into eatable articles, by unexperienced cooks, than the coarser kinds of meal, so it was but little used, and the students never felt as well after eating it. Corn meal was the easiest to prepare, and was the most used; and a person would live longer on it, made into different kinds of cakes and puddings, than upon any other one thing without becoming tired of it; it was also the cheapest article to be found on which a person could subsist.

Butter, molasses, sugar, and other sweets were generally used to a moderate extent, but they were sometimes even omitted. It was found that the less variety they had, and the longer they lived on a few plain, simple articles, the less desire there was to eat too much; and nothing could be eaten with a greater relish than when the fewest articles were taken at a time.

A few of us, for the sake of trying an experiment, lived for several weeks on simple Indian corn cake, of our own baking, without butter or salt. We found in so doing that there was no part of the time in which we felt as well, or could study more than during this experiment. There was no time that we ate with a better relish, and had less desire for rich food. It cost about eighteen cents a week.

Although most of the students would usually study a great deal by candle-light—all the time at night except what was absolutely necessary for sleep—sore and weak eyes were nearly or altogether unknown. Weak eyes is a very common complaint in some schools, where the students live in a different manner in regard to diet. Although the climate was severe, colds, I think, were not so common as in most other places.

The cure for many, when they got a cold, was to lessen the quantity of food and bathe more in cold water, and it was not long that a cold could withstand the effects of abstemiousness and water-treatment.

In the winter season many got into the habit of taking but very little exercise. Some perhaps would not walk half a mile a day on an average, and take no other exercise, and yet all appeared to go on well enough, certainly much better than with people generally who take so little exercise. The cause of this must have been, I think, the mode of living adopted.

In the summer season most of the students worked habitually three or four hours each day for exercise. Gardening and other farm work of the kind could always be obtained at a short distance from the seminary, in the summer season. The pay was from six to eight cents an hour. By working this way during the odd hours and holidays, many were able to clear all their expenses, attend school a year or two, and then leave with as much money as they brought with them. They felt better, and could study more, than those who did not work.

In the summer term there were two or three who, from an excess of vanity, would not labor with their hands at all. And they would neither board themselves, nor board in the boarding-house where good plain food only was furnished, but went to a private house in the village. There they paid nearly double price, so that they could get a greater variety of rich food and luxuries. They were about as different in other respects from the rest as in their manner of living. When the seven o'clock bell rung for breakfast it was as common a time for them to get up as any. In the first place, then, they would loose three hours of the best part of the day for both exercise and study (for the students generally rose at four in the summer); and then go right to their breakfast, they would be far from feeling as fresh and brisk as those who rose early, and worked and exercised two or three hours before the morning meal. It was a general remark, and a true one, that these would-be-gentlemen studied but little, and learned nothing. One of them came to stay two or three years, he said, but soon complained of headache, or something else, all the time he was there, so that he could not study. He left in a short time. Those who worked a part of the day, and studied the rest, always slept well when night came, and be ready to get up in the morning. Those lazy flesh-eaters complained that they could not sleep well in the night, and then would remain in bed dozing all the morning. But the plain livers, who practiced lying in bed no longer than

was necessary for sleep, and working and studying alternately through the day, got along well in all respects. The time was all well employed, which is no small matter to one who wishes to make all the improvement possible.

Straw beds were used by many of the students, and were found to be far superior to feathers in warm weather by all who tried them.

The doctors found but little to do in the seminary, hardly enough to support a church mouse.

The students were most of them a considerable distance from home, and when they got unwell they would discontinue studying, eat moderately of vegetable fare, walk in the open air, and thus get cured. This *letting-alone-plan* was believed to be much better than the drugging system. To sum up the matter, those who rose early, worked and exercised a good deal, and lived on plain vegetable food, learned much more, and felt a great deal better than those who lived in an opposite way; and the former could quite, or nearly, clear their expenses, while the latter were at a considerable expense, and learned less.

I have thus far spoken of the young men. Concerning the young ladies I knew less; but almost all of them boarded themselves, cooked their own food, performed their own washing, kept their rooms in order, and walked frequently in the open air. They appeared very healthy, and I seldom heard of any of them getting ill.

Those who, in obtaining an education, will take a course similar to that which I have described, will find that the time thus spent will ever afterward be looked upon as one of the most profitable and happy of their whole lives.

If such a plan were more generally adopted by those who must either go to school cheaply, or not at all, there would not be so many people as there now are without a good education. Since such a plan is so pleasant and easy, the want of money is no excuse for any one who has health for not attending school.

C. HAMBLETON.

P. S.—The Whitestown Seminary was formerly a manual labor school, under the able presidentship of the Rev. Beriah Green, who is himself an advocate of vegetable diet. The students were then *required* to work a portion of each day; and it is a good deal owing to this, I suppose, that the students still keep up the habit since it was changed from that to the present form. Besides, President Green is in the habit of giv-

ing lectures in the village, and sometimes at the seminary, on the subject of health, and the necessity of labor, exercise, and attention to diet, in order to preserve it.

C. H.

CASE OF JOHN BURDELL, DENTIST, OF NEW YORK.

Mr. Burdell is now forty-four years of age. He was from Oneida County, State of New York. He has resided in this city twenty-two years, before that time always in the country. His parents lived a number of miles distant from neighbors, in a wild part of the country, and the occupation of the male members of the family was clearing of land, farming, and agricultural pursuits generally. His parents were comparatively healthy. On his father's side they predisposed to paralysis; his mother died of apoplexy. Mr. Burdell ate plentifully of flesh meat, as was customary in those times, but the bread eaten was mostly of the coarser forms until his coming to the city.

He was always rather delicate in health; had frequent sick headache with nausea; was habitually costive; and often had nightmare. The first that he ever went to school was when he was sixteen years old.

Mr. Burdell has now been engaged in dentistry twenty years. He lived about two years as people ordinarily do, and then commenced the "vegetarian system," using, however, a little milk and flesh for about one year. He has not eaten flesh more than three weeks in all since that time, now a period of eighteen years. He has used milk he judges not more than one year in the aggregate since that time, and then only in a slight quantity at intervals.

On commencing the new diet he could perceive that his mind gradually became more clear. Sleep grew better; and his strength of mind he regards remained about the same. Headache appeared to disappear just in proportion as animal substances were given up; and he has not experienced this affection in a single instance, now several years. Constipation, from which he had suffered from a child, became very soon removed. Bodily strength was not materially changed. He can now, he judges, bear more exercise of any kind to which he is accustomed than ever before in his life. He has for years known no such sensation as fatigue; and yet his occupation

when ardently pursued, as in his case, is a very fatiguing one, particularly for the arms, extremities, and head.

He has lived principally in the city of New York during the twenty years before-mentioned. Once, however, he was absent about five months on a voyage to St. Croix. Nearly all the persons who went to this island at the time were attacked with the common fever of the place; numbers also died. But Mr. Burdell, however, experienced no attack whatever. He was the only vegetarian he knew of on the vessel. Once also he made a trip of some three months to New Orleans, and the southern states generally. He also saw more or less sickness at this time, but experienced none himself. During both of these trips he lived on bread, rice, potatoes, and fruits, without butter or milk.

During the whole eighteen years, Mr. Burdell has practiced washing daily in cold water. This rule has been as constant as that of going to rest. His drink has been only water, and that rarely, as his free use of fruits has supplied the necessary amount of liquid to his system. He has repeatedly passed six months at a time without tasting fluid. He has never tasted either tea or coffee, or any hot drinks whatever, since the time of commencing the vegetarian experiments. He has also made it a rule, when possible, to sleep on a hard bed with a hard pillow. He has generally retired to rest at nine o'clock and rose at six, making nearly nine hours sleep. He has always walked more or less daily in the open air; but he regards that if he could have had much more exercise than his occupation would admit of, he would have been better off.

About eight years since, Mr. Burdell after having spent some months in unpleasant mental excitement, and ate, as he now believes, too many sour apples, he was attacked in the month of April with diarrhœa, the first he ever had after commencing his new regimen. Regarding homeopathic practice the safest that he knew of at that time, and having a particular friend, a homeopathic physician, in whom he confided, he consented to have him prescribe, on the condition, however, that no calomel or mineral poisons of whatever kind should be administered. The physician, however, believing, doubtless, that it was his duty to deceive him, administered both calomel and arsenic, and that in no very small quantities. Moreover, he has reason to believe that he was over-drugged by an evil-minded person whose duty it was a part of the time to act as nurse. At all events the complaint became much worse, and severe dysentery set in. This continued for more than a month, and he says

that the smell coming from his body was as bad as that of rats poisoned with arsenic. As soon as he found that he had been taking calomel and arsenic, he dismissed the practitioner, and declared he would take no more of his medicine. All of the extremities became nearly powerless, as is common from the effects of arsenic. It was more than a year before they fully regained their power. It was at the time of this illness that he was persuaded to break a little over the rules to which he had been accustomed. He continued to use a little beef-steak about two weeks, but became so nauseated and disgusted with the flesh that he resolved never to eat of it again. On discontinuing its use he grew better. And substituting for it Indian meal gruel, bread, and the free use of fruits, he grew rapidly better in every respect, except the extremities. It was toward two years before his limbs regained their full vigor.

Since the above illness, our subject has taken but two meals a day, morning and evening, never touching food of any kind between meals. Having experimentally ascertained the quantity of nutriment required by him, he weighs or measures according to their quality the amount for each meal, so as to be uniform in the quantity taken. His food consists in summer wholly of unholded wheat bread, and fruits of all kinds as they successively appear throughout the season. He regards the indigenous as the best. In winter his table supply is made up with farinaceous, and baked potatoes and apples.

Previously to commencing the vegetarian experiments and bathing, Mr. Burdell was every winter subject to colds; some of which were very severe upon the lungs. He repeatedly experienced pulmonary hemorrhage. He has seldom been troubled with symptoms of the kind since. He thinks taking too much food, even of the simplest kinds, has in some instances caused him to raise streaks of blood.

His daily aliment consists now (September, 1849) of brown wheaten bread sometimes leavened and sometimes unleavened, and peaches. He uses no butter, salt, nor spices of any description. He takes no alcoholic or fermented liquors, no coffee or tea, and does not now recollect when he last took milk or even water, the juices of the fruits meeting and satisfying the demand which is naturally much diminished by the total absence of animal food, salt, and spices, with the febrile excitement they serve to produce. He not only bathes in cold water regularly every morning throughout the year, but sleeps with open windows summer and winter. He has passed most of the days during the present sickly season in the city. Dur-

ing the three cholera seasons of '32, '34, and '49, he passed on unharmed. It is many years since he has taken the slightest cold, or experienced the least nausea, headache, disorder of the bowels, or indisposition of any kind; and for the last seven years has not omitted a single meal. "He seems," says a friend, "in perfect health, with skin clear and mildly suffused with a natural tinge in the place of the bloated flush of drunkenness and gluttony; mind unclouded and active; spirits gentle and cheerful; and conversation fluent, easy, and instructive. Altogether he appears a very happy man. His wants, with his mode of life, are few, and require very moderate ends to meet them; these are obtained by industry in the prosecution of his professional pursuits. Much may be learned from this case, and the inference will naturally arise that much sickness, with its attendant calamities, is superinduced among mankind by unintelligent and beast-like indulgence in improper and pernicious articles of food and drink."

THE END.

TOBACCO:

ITS

HISTORY, NATURE, AND EFFECTS

ON THE

BODY AND MIND.

WITH THE OPINIONS OF

REV. DR. NOTT, L. N. FOWLER, REV. HENRY WARD BEECHER, HON. HORACE GREELEY, DR. JENNINGS, O. S. FOWLER, DR. R. T. TRALL, AND OTHERS.

BY JOEL SHEW, M. D.

AUTHOR OF VARIOUS WORKS ON HYDROPATHY, OR THE WATER-CURE

"In no one view is it possible to contemplate the creature man, in a more absurd and ridiculous light, than in his attachment to tobacco."—DR. RUSH.

NEW YORK:

FOWLERS AND WELLS, PUBLISHERS,

CLINTON HALL, 129 AND 131 NASSAU STREET.

PREFACE.

CONCERNING the expensiveness of tobacco, the Earl of Stanhope is said to have made the following calculation: Every professed, inveterate, and incurable snuff-taker, at a moderate computation, takes one pinch every ten minutes. Every pinch, with the agreeable ceremony of blowing and wiping the nose, and other incidental circumstances, consumes a minute and a half. One minute and a half out of every ten, allowing sixteen hours to a snuff-taker's day (and he always begins early and keeps it up late), amounts to two hours and twenty-four minutes out of every day, or one day out of ten. One day out of every ten amounts to thirty-six and a half days in a year. Hence, if we suppose the practice of forty years' standing, two entire years of the snuff-taker's life will be dedicated to tickling his nose, and two more to blowing it. The expense of snuff, boxes, and extra handkerchiefs is another consideration, showing as great an encroachment on his means as his time. The time and money thus lost to society, if properly applied, would furnish a fund sufficient to defray the national debt.

Some one has estimated the expensiveness of tobacco in this wise: Suppose a tobacco-chewer is addicted to the habit of chewing tobacco fifty years of his life, and each day of that time he consumes two inches of solid plug, which amounts to six thousand and seventy-five feet, making nearly one mile and a quarter in length of solid tobacco, half an inch thick and two inches broad. What would a beginner think if he had the whole amount stretched out before him, and ne were told that to chew it up would be one of the exercises of his life, and also that it would tax his income to the amount of more than two thousand dollars? Query Would he undertake it all?

In the city of New York there are aoout four hundred thou sand inhabitants. About one half of the population is males. Of these we will suppose that one fourth of the number smoke cigars. On an average we will suppose these smokers to consume three cigars each, or, for example, ten cents' worth per day. This amounts, then, to no less than *five thousand dollars' worth of cigars* used in the city of New York in a single day! We will suppose that there is also about as much more used in pipes, by chewing and by snuffing. There would then be consumed in the city of New York *one million eight hundred and twenty-five thousand dollars' worth of tobacco in a single year!*

Let us make an estimate for a poor man. Here are multitudes of such, who have hard work, year by year, to obtain the bread they eat. Almost all of these men are inveterate chewers of tobacco. We will suppose they use the cheapest and most miserable kinds of the weed. At a low estimate each man uses five dollars' worth per year, which is only a little over a single cent's worth per day. This, in the space of forty years, when reckoned, principal and interest, would amount to a sum that would be very convenient to a poor old man when his hairs have grown gray.

The expensiveness of tobacco, then, is a very important consideration—important to the poor man, the rich man, the philanthropist, and the Christian. But there is yet a far more important consideration—I mean that which relates to health. If a man has once lost this best of all earthly blessings, what would he not give could it be again restored to him? All the gold and silver and precious metals the world has ever produced, or can ever produce, bear no comparison to the value of health.

The tobacco habit is every where increasing in public favor. It is hardly *genteel* not to be able to smoke. Looking at the habits of those about us, we may well regard them as addressing the "GREAT PLANT:"

'Scent to match thy rich perfume,
Chymic art did ne'er presume,
Through her quaint, alembic strain,
None so sovereign to the brain.
Nature, that did in thee excel,
Framed no second smell.

Roses, violets, but toys
For the smaller sort of boys,
Or for greener damsels meant;
Thou art the only manly scent.'

We Americans are in some respects a peculiar people. We cannot be said to be miserly, yet we outdo the nations in money-making and general thrift. We go faster in our steamboats, build better ships, do more hard work, eat more food, and in a shorter time, than any nation on the face of the globe. So, too, in other things. We use more tea and coffee, drink more spirits, and become greater drunkards. So also we use more tobacco. But we cannot be at the trouble of smoking when we lie down, when we rise up, and through the whole day, as the Germans do. Nor can we be satisfied in taking up so much of our time as the French and English in snuffing. Two and a half hours' time out of each twenty-four, in snuffing, sneezing, and blowing one's nose, does not accord with the American notions of industry. The American must do two things at a time. He can saw wood, or plow, or hoe corn, at the same time while he is chewing a good "cud" of tobacco. He can, if need be, plead before a jury, or preach a sermon, while at the same time he holds the precious bolus in one side of his mouth. Besides, by the habit of chewing, more is made out of the thing, more is accomplished in a given time, more of the strength of the tobacco is obtained, and the system is more completely saturated with it. *Chewing* is emphatically the *American* habit. The American can *smoke*, *snuff*, and *plug his nose* with tobacco; but all that is not enough—he must CHEW.

But what says hydropathy to all this? What says physiology? What the science of health? Moreover, what says political economy, common morality, and even decency itself? Why, plainly and emphatically, "Touch not the unclean thing." It is a more than beastly practice; and, as the couplet hath it,

"Great men and green worms will use their tobacco,
But ne'er a pig nor his wife; ah! alack, O!"

Tobacco is a good medicine, doubtless, in its proper place; a powerful means of good in certain rare emergencies, although in

those even there are probably better. But as a thing of daily and general use, *it is an abominable drug.*

But one thing may appear singular to the reader: I have written this little work with the expectation of changing the habits of only a few. One might at first think that a book which should in a tolerable degree set forth the great evils of tobacco, would necessarily be the means of reforming multitudes of foolish men. But it is not so. All that the philanthropist, the physician, and the priest can accomplish with those who have become addicted to the use of tobacco, is but as a sand on the sea-shore, or a drop amid the wide ocean. Now and then only a man, such as John Quincy Adams, or the reverend and venerable Doctor Nott, can be found of self-denial sufficient to enable him to cleanse his system of the disgusting, abominable, and life-destroying habit of using tobacco. Often enough we can succeed in convincing a man's judgment; we can get him for a time to leave off his bad habit. But in a short time—a few months at most—we find that he has again slunk back into his old career of misery, disease, and death.

If, then, by this work, I shall be the means of warning the uninitiated, and such as desire light, on an important subject, and thus of keeping them out of a most evil habit, I shall not have spent my efforts in vain.

J. S.

New York, 1849

A LIST OF WORKS

By Fowlers and Wells, Clinton Hall, 131 Nassau Street, New York.

In order to accommodate "The People," residing in all parts of the United States, the undersigned Publishers will forward by return of the First Mail, any book named in the following List. The postage will be pre-paid by them, at the New York Office. By this arrangement of pre-paying postage in advance, fifty per cent. is saved to the purchaser. The price of each work, including postage, is given, so that the exact amount may be remitted. All letters containing orders, should be post-paid, and directed as follows. Fowlers and Wells, Clinton Hall, 131 Nassau Street, New York.

On Phrenology.

Combe's Lectures on Phrenology. A complete course. Bound in Muslin, $1 25.

Chart, for Recording various velopments. Designed for Phrenologists. 6 cents.

Constitution of Man. By Geo. Combe. Authorized Edition. Paper, 62 cts. Muslin, 87 cts.

Constitution of Man. School Edition. Arranged with Questions. 30 cents.

Defence of Phrenology, with Arguments and Testimony. By Dr. Boardman. Paper, 62 cents. Muslin, 87 cents.

Domestic Life, Thoughts on. Its Concord and Discord. By N. Sizer. 15 cents.

Education Complete. Embracing Physiology. Animal and Mental, Self-Culture, and Memory. In 1 vol. By O. S. Fowler. $2 50.

Education, Founded on the Nature of Man. By Spurzheim. 62 cts. Muslin, 87 cts.

Familiar Lessons on Phrenology and Physiology. Muslin, in one volume. $1 25.

Love and Parentage: applied to the Improvement of Offspring. 30 cents.
The same, in Muslin, including Amativeness. 75 cents.

Marriage: Its History and Philosophy with Directions for Happy Marriages. Bound in Paper, 50 cents. Muslin 75 cents.

Memory and Intellectual Improvement: Applied to Self-Education. By O. S. Fowler. Paper 62 cents. Muslin, 87 cents.

Mental Science, Lectures on, According to the Philosophy of Phrenology. By Rev. G. S. Weaver. Paper, 62 cents. Muslin, 87 cents.

Matrimony: or, Phrenology and Physiology applied to the Selection of Congenial Companions for Life. 30 cents.

Moral and Intellectual Science. By Combe, Gregory, and others. Muslin, $2 30.

Phrenology Proved, Illustrated, and Applied. Thirty-seventh edition. A standard work on the science. Muslin, $1 25.

Phrenological Journal, American Monthly. Quarto, Illustrated. A year, One Dollar.

Popular Phrenology, with Phrenological Developments. 30 cents.

Phrenology and the Scriptures. By Rev. John Pierpont. 12 cents.

Phrenological Guide: Designed for the Use of Students. 15 cents.

Phrenological Almanac: Illustrated with numerous engravings. 6 cents.

Phrenological Bust: designed especially for Learners, showing the exact location of all the Organs of the Brain fully developed. Price, including box for packing, $1 25. [Not mailable.]

Religion, Natural and Revealed, Or the Natural Theology and Moral Bearings of Phrenology. Paper, 62 cents. Muslin, 87 cents.

Self-Culture and Perfection of Character. Paper, 62 cents. Muslin, 87 cents.

Self-Instructor in Phrenology and Physiology, Illustrated, with One hundred Engravings. Paper, 30 cents. Muslin, 50 cents.

Synopsis of Phrenology and Physiology. By L. N. Fowler. 15 cents.

Symbolical Head and Phrenological Chart, in Map Form, showing the Natural Language of the Phrenological Organs. 25 cents.

Temperance and Tight-Lacing. On the Laws of Life. By O. S. F. 15 cents.

Works of Gall, Combe, Spurzheim and Others, together with all works on Phrenology, for sale, wholesale and retail. Agents and Booksellers supplied, by Fowlers and Wells, New York.

Hydropathy, or Water-Cure.

"IF THE PEOPLE can be thoroughly indoctrinated in the general principles of HYDROPATHY, they will not err much, certainly not fatally, in their home application of the WATER-CURE APPLIANCES to the common disease of the day. If they can go a step further, and make themselves acquainted with the LAWS OF LIFE AND HEALTH, they will well nigh emancipate themselves from all need of doctors of any sort."—DR. TRALL, IN HYDROPATHY FOR THE PEOPLE.

Accidents and Emergencies. By Alfred Smee. Notes by Trall. Illustrated. 15 cents.

Bulwer, Forbes and Houghton on the Water Treatment. One large volume. $1 25.

Cook-Book, Hydropathic. With new Recipes. By R. T. Trall, M. D. Paper, 62 cents. Muslin, 87 cents.

Children ; Their Hydropathic Management in Health and Disease. By Dr. Shew. $1 25.

Consumption : Its Causes, Prevention and Cure. Paper, 62 cents. Muslin, 87 cents.

Curiosities of Common Water. A Medical work. From London edition. 30 cents.

Cholera : Its Causes, Prevention and Cure : and all other Bowel Complaints. 30 cts.

Confessions and Observations of a Water Patient. By Sir E. Lytton Bulwer. 15 cts.

Errors of Physicians and Others, in the Application of the Water-Cure. 30 cents.

Experience in Water-Cure, in Acute and other Diseases. By Mrs. Nichols. 30 cents.

Hydropathic Encyclopedia. A Complete System of Hydropathy and Hygiene. Illustrated. By R. T. TRALL, M. D. Two volumes, with nearly One Thousand pages. Illustrated. Price, $3 00.

Hydropathy for the People. Notes, by Dr. Trall. Paper, 62 cents. Muslin, 87 cents.

Hydropathy, or Water-Cure. Principles, and Modes of Treatment. Dr. Shew. $1 25.

Home Treatment for Sexual Abuses, with Hydropathic Management. A Practical Treatise for Both Sexes. By Dr. Trall. 30 cents.

Hygiene and Hydropathy, Lectures on. By R. S. Houghton, M. D. 30 cents.

Introduction to the Water-Cure. With First Principles. 15 cents.

Midwifery and the Diseases of Women. A practical work. By Dr. Shew. $1 25.

Milk Trade in New York and Vicinity. By Mullaly. Introduction by Trall. 30 cents.

Parent's Guide and Childbirth Made Easy. By Mrs. H. Pendleton. 60 cents.

Philosophy of Water-Cure. By John Balbirnie, M. D. A work for beginners. 30 cts.

Pregnancy and Childbirth, Water-Cure for Women, with cases. 30 cents.

Principles of Hydropathy ; Invalid's Guide to Health. By D. A. Haraha. 15 cents.

Practice of Water-Cure. By Drs. Wilson and Gully. A handy, popular work. 30 cts.

Science of Swimming : Giving Practical Instruction to Learners. 12 cents.

Water-Cure Library ; Embracing the Most Important Works on the Subject. In seven large 12mo. volumes. A Family work. $6 00.

Water-Cure in America, containing Reports of Three Hundred Cases. $1 25.

Water and Vegetable Diet in Scrofula, Cancer, Asthma, &c. By Dr. Lamb. Notes by Shew. 62 cents. Muslin, 87 cents.

Water-Cure in Every Known Disease. By J. H. Rausse. 62 cents. Muslin, 87 cents.

Water-Cure Manual ; A Popular Work on Hydropathy. 62 cents. Muslin, 87 cents

Water-Cure Almanac, Containing much important matter for all classes. 6 cents.

Water-Cure Journal and Herald of Reforms. Devoted to Hydropathy and Medical Reform. Published monthly, at One Dollar a Year.

FOWLERS AND WELLS have all works on PHYSIOLOGY, HYDROPATHY, and the Natural Sciences generally. Booksellers supplied on the most liberal terms. AGENTS wanted in every state, county, and town. These works are universally popular, and thousands might be sold where they have never yet been introduced.

TO PREVENT MISCARRIAGES, DELAYS OR OMISSIONS, all letters and other communications should, in ALL CASES, be post-paid, and directed to the Publishers, as follows:—FOWLERS AND WELLS, Clinton Hall, 131 Nassau St., New York.

THE PUBLISHERS would respectfully refer strangers, Agents, and Country dealers, to any of the principal Publishers in New York, Philadelphia, Boston, or other cities, for evidence of their ability to fulfil all contracts, and to meet all engagements They have been many years before the public, engaged in the publishing business in the City of New York.

Physiology, Mesmerism and Psychology.

ON PHYSIOLOGY.

Amativeness; or, Evils and Remedies of Excessive and Perverted Sexuality, with Advice to the Married and Single. 15 cents.

Combe on Infancy; or, the Physiological and Moral Management of Children. Illustrated. Paper, 62 cents. Muslin, 87 cents.

Combe's Physiology, Applied to the Improvement of Mental and Physical Education. Notes by Fowler. Paper, 62 cents. Muslin, 87 cents.

Chronic Diseases, Especially Nervous Diseases of Women. Important work. 30 cents.

Digestion, Physiology of. The Principles of Dietetics. By Andrew Combe. 30 cents.

Food and Diet: Containing an Analysis of every kind of Food and Drink. By Pereira. Paper, 87 cents. Muslin, $1 25.

Generation, Philosophy of: Its Abuses, Causes, Prevention, and Cure. 30 cents.

Hereditary Descent: Its Laws and Facts applied to Human Improvement. O. S. F. New edition. Paper, 62 cents. Muslin, 87 cents.

Maternity: Or the Bearing and Nursing of Children, including Female Education. O. S. Fowler. Paper, 62 cents. Muslin, 87 cents.

Natural Laws of Man. By Dr. Spurzheim. A good work. 30 cents.

Natural History of Man. By Dr Newman. Illustrated. Paper, 62 cts. Muslin, 87 cts.

Physiology, Animal and Mental: Applied to Health of Body and Power of Mind. By O. S. F. Paper, 62 cents. Muslin, 87 cents.

Reproductive Organs; Their Diseases, Causes, and Cure Hydropathically. 15 cents.

Sober and Temperate Life: with Notes and Illustrations by Louis Cornaro. 30 cents.

Tobacco: Its Effect on th Body and Mind. By Dr. Shew. 30 cents.

Teeth: Their Structure, Dis- ease, and Management, with many Engravings. 15 cts.

Tea and Coffee; Their Physi- cal, Intellectual and Moral Effects. By Alcott. 15 cts.

Tobacco, Use of; Its Physical, Intellectual and Moral Effects. By Alcott. 15 cents.

Vegetable Diet, as Sanctioned by Medical Men, and Experience in all ages. By Dr. Alcott. Paper, 62 cents. Muslin, 87 cents.

MESMERISM AND PSYCHOLOGY.

Biology; Or the Principles of the Human Mind. By Alfred Smee. Illustrated. 30 cts.

Electrical Psychology, Phi- losophy of, in Twelve Lectures. By Dr. J. B. Dods Paper, 62 cents. Muslin, 87 cents.

Elements of Animal Magnet- ism; Or Process and Practical Application. 15 cents.

Fascination, or the Philosophy of Charming (Magnetism). Illustrating the Principles of Life. Paper, 50 cents. Muslin, 87 cents.

Mental Alchemy. A Treatise on the Mind and Nervous System. By Wilkins. 62 cts.

Macrocosm and Microcosm; or the Universe Without and the Universe Within. By Fishbough. Scientific Work. Paper, 62 cts. Muslin, 87 cents.

Philosophy of Mesmerism and Clairvoyance, Six Lectures, with Instruction. 30 cents.

Psychology, or the Science of the Soul. By Haddock. Illustrated. 30 cents

Spiritual Intercourse, Philoso phy of; an Explanation of Modern Mysteries. 62 cents

Supernal Theology, and Life in the Spheres. By Owen G. Warren. 30 cents.

EITHER OF THESE WORKS may be ordered and received by return of the FIRST MAIL, postage prepaid by the Publishers. Please address all letters, post-paid, to

FOWLERS AND WELLS,
Clinton Hall, 131 Nassau Street, New York.

N. B. Please be particular to give us the name of YOUR POST OFFICE, COUNTY and STATE.

Phonography and Miscellaneous.

When single copies of these works are wanted, the amount, in postage stamps, small change, or bank notes may be enclosed in a letter and sent to the Publishers, who will forward the books by return of the FIRST MAIL.

ON PHONOGRAPHY.

Constitution of the United States, in Phonography, Corresponding style. 15 cents.

Declaration of Independence, in Phonography, a sheet; for framing. 15 cents.

Phonographic Teacher; Being an Inductive Exposition of Phonography, intended for a school book, and to afford complete instruction to those who have not the assistance of an oral teacher. By E. Webster. In Boards. 45 cents.

Phonographic Envelopes, Large and Small, containing Brief Explanations of Phonography and its Utility. Price, per thousand, $3 25.

Phonographic Alphabet, upon Enamelled Card. Price, per hundred, $3 00.

Phonographic Word-Signs, on Card. Per hundred copies, $3 00.

The Universal Phonographer: Monthly Journal, devoted to the Dissemination of Phonography, and to Verbatim Reporting, with Practical Instruction to Learners. Printed in Phonography. [No discount on this work.] Price, A YEAR, $1 00.

MISCELLANEOUS.

Botany for all Classes; Containing a Floral Dictionary, with numerous Illustrations. Paper, 62 cents. Muslin, 87 cents.

Chemistry, Applied to Physiology, Agriculture, and Commerce. By Liebig. 25 cts.

Delia's Doctors; or, A Glance Behind the Scenes. By Miss Hanna Gardner Creamer. Paper, 62 cents. Muslin, 87 cents.

Essay on Wages, Showing the Necessity of a Workingman's Tariff. 15 cents.

Familiar Lessons on Astronomy. Designed for Children and Youth in Schools and Families. Mrs. Fowler. Paper, 62 cts. Muslin, 87 cts.

Future of Nations, A Lecture. By Louis Kossuth. Revised by the author. 12 cents.

Hints toward Reforms, in Lectures, Addresses, and other Writings. By H. Greeley. Second Edition, Enlarged, with Crystal Palace. $1 25.

Hopes and Helps for the Young of Both Sexes. By Rev. G. S. Weaver. An excellent work. Paper, 62 cents. Muslin, 87 cents.

Human Rights, and their Political Guaranties. By Judge Hurlbut. An important work. Paper, 62 cents. Muslin, 87 cents.

Home for All: New, Cheap, Convenient, and Superior Mode of Building. 87 cents.

Immortality Triumphant. The Existence of a God, with the Evidence. By Rev. J. B. Dods. Paper, 62 cents. Muslin, 87 cents.

Innovation Entitled to a Full and Candid Hearing. By John Patterson. 15 cents.

Literature and Art. By S. Margaret Fuller. Introduction by Horace Greeley. $1 25.

Labor: Its History and Prospects. Use and Abuse of Wealth. By Owen. 30 cents.

Power of Kindness; Inculcating the Christian Principles of Love over Physical Force. Paper, 30 cents. Muslin, 50 cents.

Population, Theory of. The Law of Animal Fertility. Introduction by Trall. 15 cts.

Temperance Reformation— Its History from the First Temperance Society to the Adoption of the Maine Law. By Armstrong. $1 25.

The Student: A Monthly Magazine, Devoted to the Physical, Moral, and Intellectual Improvement of Youth. Amply Illustrated. Price, One Dollar a Year.

Woman: Her Education and Influence. With an Introduction by Mrs. C. M. Kirk land. Paper, 50 cents. Muslin, 87 cents.

Woman, in all Ages and Nations. An Authentic History, from the Earliest Ages. Paper, 62 cents. Muslin, 87 cents.

THESE works may be ordered in large or small quantities. A liberal discount will be made to AGENTS, and others, who buy to sell again. They may be sent by Express or as Freight, by Railroad, Steamships, Sailing Vessels, by Stage or Canal, to any City, Town, or Village in the United States, the Canadas, to Europe, or any place on the Globe.

Checks or drafts, for large amounts, on New York, Philadelphia, or Boston, always preferred. We pay cost of exchange

☞ All letters should be post-paid, and addressed as follows:—

[Name the Post Office, Co., and State.]

FOWLERS AND WELLS,
Clinton Hall, 131 Nassau St., New York.