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GOTTFRIED CHRISTIAN REICH,

MED. ET CHIRURG. DOCT. ET PROFESSOR,
MEMBER OF MANY LEARNED SOCIETIES,

ON FEVER

AND

ITS TREATMENT IN GENERAL.

TRANSLATED FROM THE GERMAN,

BY

CHARLES HENRY PARRY,

ORDINARY MEMBER OF THE PHYSICAL SOCIETY OF GOËTTINGEN.

Price 3s. 6d.

Cruttwell, Printer, Bath.

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TO WHICH ARE ADDED,

A PREFACE, BY THE TRANSLATOR;

AND

AN APPENDIX,

BY

CALEB HILLIER PARRY, M.D. F.R.S.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON;
AND
ONE OF THE PHYSICIANS OF THE GENERAL HOSPITAL OF BATH.

BATH, PRINTED BY R. CRUTTWELL;
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1801.

PREFACE.

AS it must be natural for the English reader to wish to know something relative to the Author of the following Treatise, I communicate to him certain particulars, derived from the most authentic sources.

Dr. REICH is Professor at Erlang, a Prussian University in Franconia. In 1799 he published an Appendix to a translation by Bonzel of Dr. Haygarth's Plan for extirpating the natural Small-Pox. In the last pages of this Appendix, after some general remarks on the more immediate subject, he gives notice of a Discovery made by himself of two remedies, by the use of which danger might be removed, as well in the Small-Pox as in all other acute diseases; and that in the shortest possible space of time. This

discovery

discovery he attributes to his elaborate investigation of the Murrain among cattle, and the application to this disease of the Mitchillian theory of the Yellow Fever; to an accurate examination of that apparently strange theory itself, and of the systems of Hufeland, Reil, and Brown; to a careful inquiry into the causes of Fevers usually called Bilious and Putrid, and of the diseases allied to them; and to the failure of various experiments for the cure of those diseases according to the methods of the old Humoral Pathologists. From these investigations REICH arrived at certain ideas, which led him to the discovery of the above-mentioned remedies for Fever in all its degrees and complications. While, however, from the successful exhibition of his remedies in forty cases, he is enabled to expatiate largely on their advantages, he not only avoids giving the smallest hint of their nature, but declares that it is his intention to keep them a profound secret, till he shall be assured of a sufficient recompense for his labours.

This address of REICH drew the attention of various orders of men; and from that time, remarks and queries addressed to him appeared in all the public papers of Germany.

See

See on this subject Hartenkeil's Medical and Chirurgical Journal for 1799, vol. iii. pages 214 et seq. vol. iv. page 182, &c.; and the following papers in the Imperial Advertiser (Reich's Anzeiger) for 1799; No. 128, June 7; No. 177, Aug. 3; No. 193, Aug. 19; No. 202, Sept. 2; No. 205, Sept. 5; No. 215, Sept. 17; No. 221, Sept. 24; No. 225, Sept. 28, Nos. 235 and 236, Oct. 10 and 11; No. 250, Oct. 28; Nos. 284 and 285, Dec. 8 and 9; also for 1800, No. 18, Jan. 22; No. 71, March 25; No. 77, April 2; No. 101, May 3; No. 103, May 6; No. 195, Aug. 25; No. 198, Aug. 28; No. 202, Sept. 2. In the above papers is chiefly to be found the correspondence on the subject of Reich, including the attacks upon him and his answers. In them he is generally accused of being a Charlatan, and a man void of philanthropy. It is urged against him, that if his remedy does half of what he pretends, he ought to lose no time in making it generally known; that in so doing he will find sufficient external and internal reward; that his silence is a sin against mankind, as every day's concealment must cost the lives of hundreds of his fellow-creatures. To such reproaches Reich answers, (Imper. Advert.

Advert. Aug. 3, No. 177) that, were he to reveal his secret, people, it is true, might give him credit for generosity, and perhaps confer on him other marks of honour. But would these rewards provide him with bread? If, under such circumstances, he was in want, mankind would contribute nothing to his support, except under the title of alms; or, if he had a family, and could leave them nothing, they must beg their bread if they could not earn it, although he had cured the human race of all possible diseases. If, therefore, mankind have a right to demand the publication of his secret, he thinks he can prove it their duty to indemnify him in return. He repeats that he will willingly give up any reward, should the success of his remedies not be found to equal his promises; and offers to prove the truth of his assertions in any public hospital, in such cases of Fever as are unattended with any Organic Læsion. He adds, however, that, if no reward shall be offered, it is his intention not to trouble the public any further on the subject; but to content himself with doing as much good as his own circle of practice will allow.

These various declarations and answers did not, however, secure Reich from farther attacks;

tacks; so that, at length, he was under great doubts how to act. He had, in the mean time applied to Sir George Baker, in order to know whether the English Government would make him some offer for the purchase of his secret. He informs us that the answer was unfavourable, stating, "that the "application of the discovery in his own "practice must produce him a sufficient re- "ward; and that the minds of men in Eng- "land being engrossed by the expences of "warlike preparations, there was no room "for him to expect any Parliamentary re- "ward from that country." This answer REICH has published in the Reich's Anzeiger, or Imperial Advertiser, August 3, 1799, in a letter dated Erlang, July 24, 1799. In the same letter he mentions, that about this time offers had been made him by different Physicians, separately to purchase his method, under promises of the most profound secrecy; and several of the Faculty did actually purchase it of the Author, long before its publication, for one Louis d'or each.

In some of the above papers he had been called upon to specify the terms on which he would publish his secret. This he does in Nos. 284 and 285 of Reich's Anzeiger, Dec. 8,

and

and 9, in a letter dated Nov. 12, 1799; not long after which, he received from the King of Prussia an order to go to Berlin; the King declaring it his intention to reward him, should his Theory and Remedies stand the test of examination. For this purpose a Committee was appointed of four celebrated Physicians, Selle, Fritze, Richter (of Goëttingen) and Formey; and experiments were immediately instituted under their inspection at the Charité, a famous Hospital at Berlin, established by the present Monarch on the ruins of the fortune of the late King's celebrated Mistress, the Countess of Lichtenau. From December 26, 1799, to Jan. 24, 1800, Reich treated in this Hospital twenty-eight patients; of whom twenty-three recovered; three, refusing to take the medicines, remained uncured, and two others died. Of the two who died, one was a beggar, on the fifth day of a relapse of a Nervous Fever; and the other a consumptive patient, with a sudden Ulceration of the Lungs. See a Letter of Reich, dated Berlin, March 14, in the Reich's Anzeiger, No. 71, March 25. After the conclusion of the experiments, the Royal Committee published at large, in "Formey's Ephemeriden," a favourable report of Reich,

of

of which the following is the substance.
"The Committee, in consequence of the
"want of malignant epidemic diseases a-
"mong the twenty-eight patients treated by
"Professor REICH in the Charité, do not
"think themselves enabled completely to
"decide as to the merits of the proposed Re-
"medy. They, however, bear testimony to
"his being a learned Physician, far removed
"from all Charlatanery. They cannot but
"allow that the Remedy will produce speedy
"effects, and sometimes afford quick relief
"in Febrile complaints; but from the cases
"of those patients who died among the
"twenty-eight above-mentioned, as well as
"from many others out of the Hospital,
"which in part terminated fatally, and, in
"part, could only be saved by the use of
"other remedies, it follows, at least, that the
"assertion, that in Fevers of all kinds dan-
"ger may be removed by it in a few hours,
"is not yet fully proved. In the cure as well
"as prevention of Camp and Jail diseases
"this Remedy will probably be applied with
"great and extensive advantages, although
"it will not render other medicines unne-
"cessary. It may also be very useful in the
"malignant diseases of children, particularly

in

" in the Small Pox. Its cheapness and sim-
" plicity are advantages, which cannot be
" proved, till it has been shewn how far it
" supersedes the necessity of other remedies.
" Medicine will, on the whole, gain by the
" Theory and Remedy of Dr. REICH."

In consequence of this Report of the Committee, the King of Prussia granted to REICH a pension of 500 thalers (nearly 100l. sterling) with remainder of half that sum to his wife, in case she survived him; as also the privilege of reading lectures, and of being admitted among the approved physicians of Berlin, without the usual examinations. The pension, which, in the country in which it is conferred, is a very large one comparatively with the same nominal sum in England, was also given free of all tax and stamp-duties, which would otherwise have amounted to one-fourth of the whole.

CHARLES HENRY PARRY.

Goëttingen, Feb. 1, 1801.

APHORISMS.

I.

WHOEVER is inclined to consider the human body, with open eyes, and an unbiassed mind, must be aware that all its actions, whether they be called Functions, Secretions, or Excretions, are an uninterrupted series of Animo-chemical processes, by which a continual change takes place in the mixture of organized matter.

II.

These Animo-chemical processes, or changes of mixture, are the result of the constant re-action of Powers, or Principles opposed to each other; without which nothing which exists, or is coming into existence, can be imagined.

III.

It is well known, that these Animo-chemical processes are very different. The circumstances

on which these differences depend, consist in the continual addition, change, and separation of Heterogeneous substances; in their relative proportions, as to quantity and quality; in the difference of the single organs in which those changes take place, and in the mechanical or formal change of those organs, which cannot happen without a change of the substances contained in them.

IV.

From the reciprocal action of these opposed principles (II.) is produced the phænomenon of Life. The Life of the human body is, therefore, a continual tendency of Heterogeneous Matter towards Homogeneity; at which point, however, it cannot arrive, on account of the continual addition of new Heterogeneous Matter; or, in other words, it is a perpetual circular motion, produced by the conflict of adverse principles. It cannot exist as motion without this conflict of opposite Powers; and Powers cannot exhibit themselves, without the substratum of Organized Matter. Powers, therefore, constitute the nature of Matter; and Matter is only Power considered in an Objective view; while, on the other hand, Power is only Matter considered in a Subjective view. Organic Powers, and Organic Bodies, are, therefore,

fore, one and the same, considered only in different points of view. Organism (*Organismus*) subsists by its Organic Powers; which is the same thing as if we should say, that it subsists by itself —that it is the product of its Organic Qualities, of the actions of its innate powers. As this product of Organic Qualities, Organism, is a chemical product, so also its Qualities or Actions must be of a chemical kind; that is, they must be chemically determined. In no other view can we conceive of Vital Power, Excitability, Sensibility, Irritability, the Power of Production, and whatever other powers have been attached to Organism, as Substantial essences.

V.

The first Basis of Life consists, therefore, in matter organized, and therefore organizing in its turn; that is, in Organism itself. The basis of Organized Life, and the first origin of All Life, must, however, be essentially distinguished from each other, and by no means confounded. The first may be empirically inferred; but the latter would discover itself only in the highest sphere of Transcendentalism, which the boldest human spirit in the flight of its ideas cannot reach, and must be satisfied with touching only its extreme boundaries.

VI.

As now all Qualities or Powers of the human body are chemically determined (IV.), and all Actions depend on the change of the Qualities, so likewise must the Actions of all individual parts of the human body be determined by the Animo-chemical Processes. The actions, consequently, of all the Fluid parts of the body are determined by these processes; and as even all the Solid parts may be reduced to Fluids, the quality and action of the Solids must be determined in the same way. This principle extends so far, that even the Form of the latter depends on the quality of the Fluids, that is, on their Mixture. The word Fluid, as well as the word Chemical, is used here in its most extensive signification; and consequently includes all Gasiform substances or matters; even those which we cannot exhibit by themselves, and which we distinguish under the names of Magnetic, Galvanic, and Electric, and all matter usually called Simple.

VII.

From these principles it follows, that all changes of the human organized Body depend on the change of its chemical Qualities; and that even the action of the Powers of the Soul is determined by a similar change; but that, as in Organism, every thing

thing which exists becomes reciprocally end and means, or rather effect and cause, these Powers of the Soul have an influence on the chemical Qualities. The Analytical demonstration of this position is as easy as the Synthetical; nay more easy. It cannot, however, with propriety be enlarged on in this place. Let the question be put with regard to Galvanism, which has led me to the subject, and which is gradually elevating itself from the empirical to the more exalted sphere of science.

VIII.

As the human body, according to the common course of nature, is exposed to the perpetual operation of chemical agents, which exhibit a constant tendency to restore Homogeneity, it can preserve its substantiality only by opposing to this tendency the contrary tendency towards Heterogeneity. As long as those chemical agents in this reciprocal conflict do not gain a preponderancy, or as long as the Animo-chemical processes continue under the condition before-mentioned, the body will maintain its identity, that is, will continue to Live. On the other hand, as soon as it must submit to the tendency of the chemical agents towards Homogeneity, and the chemical processes follow no longer the Animo-chemical laws, but only physical or Dead-chemical laws, the body,

body, stepping again into the circle of the general course of nature, against which it had till then struggled, ceases to live.

IX.

The Animo-chemical processes are, therefore, to be considered as the Phænomena, by which the Body exhibits its state of Life. They are called Animo-chemical, in order to distinguish them from those which are observable in the rest of the circle of nature, and which are stiled the Dead-chemical or Physical processes. This distinction is by no means made, as if the Principles or Elective Affinities were different in these instances; but only to point out the spheres and conditions within and under which they take place. The Principles and Elective Affinities of Dead and Animal Chemistry are the same, considered in themselves; but the Animo-chemical process has the organic human body for its sphere, and a variety of principles for its condition; while, on the contrary, the Dead-chemical process has all inanimate nature for its sphere, and unity of principles, founded on duplication, as its condition.

X.

The most important Animo-chemical processes of the human body are Respiration and Nutrition.

The

The entire cessation of one or the other of these processes occasions Death.

XI.

Respiration is the most necessary and primary function of the human body; and to this all other actions are subjected, as secondary.

XII.

By Respiration, the body receives from Atmospheric air the Oxygen which is necessary for its support. Whether the Oxygen be conveyed through the Lungs and Skin into the body, or rather into the blood, or whether it be intended only to unite with the gaseous substances separated from the blood, is here perfectly indifferent.

XIII.

Oxygen, however, is only one of the most conspicuous component parts of Atmospheric Air. We are acquainted with another essential component part, Azot; which some have lately considered as a mere specific chemical compound of Oxygen and Hydrogen. Besides these component parts, Atmospheric Air has a small admixture of Carbon, which is, however, in a gasiform, half-acid state; and hence, perhaps, does not deserve to be called a real ingredient.

XIV. The

XIV.

The connecting medium of these different ingredients of Atmospheric Air is Caloric; itself, therefore, a principal ingredient; by means of which, the Simple substances (as they are usually called) are brought into the gasiform state, in which they are found in the Atmosphere. The existence of Caloric has indeed of late been doubted, because it cannot be exhibited by itself. But we should with equal reason be obliged to doubt the existence of all substances, which are considered as Simple; of all matter, which, like the Magnetic, Electric, and Galvanic, we perceive only in their Phænomena. What these things are in themselves, it is true, we do not know, nor shall we ever know; for they exist only in the moment of union with that which is opposed to them. Whatever, therefore, is Phænomenon, what presents itself to the senses, is already the product of both opposed principles. Each individual is lost in the Phænomenon, and identified with the Product; and therefore cannot be perceived separately. We may, however, with certainty infer its existence, if the product itself can be again decomposed, and its separate principles will enter with other principles into combinations, in which each is as imperceptible as in the first

product.

product. That all this holds good with regard to Caloric, as well as all other Simple matter, is sufficiently obvious. We call the principle which changes simple matters to Gases, and produces in us the sensation of Warmth, Caloric, without troubling ourselves here as to what it is in itself, and whence it comes; and we use this word to distinguish the cause of the Phænomena of Heat, just as we use the words Oxygen, Azot, Carbon, Electric matter, &c. to distinguish the hitherto frontier-ideas of our physical knowledge.

XV.

Besides Caloric, the matter of Light is an ingredient in Atmospheric Air; and both perhaps are only particular modifications of the Electric fluid. We shall not here trouble ourselves as to this point, but shall mention it in another place, when we shall investigate the mode in which Oxygen and Azot are combined into Atmospheric Air, so as not to form Nitric Acid. We shall only observe here, that the near affinity of the matter of Light to Oxygen, and of Caloric to Azot on the one side, and of the matter of Light to Caloric on the other, may render it possible that the Atmospheric mixture of Air (which may likewise be mixed with compounded gasiform and vaporous substances) is not Nitric Acid.

XVI.

XVI.

Atmospheric Air is fit for Respiration only, in so far as it contains Oxygen latent in the proper loose manner. Whenever Oxygen becomes more intimately connected with any kind of Gas, than is the case in the Atmospheric mixture of Air, it loses the property of serving for Respiration, because it then adheres too firmly to its basis, and cannot separate so easily from it in the Lungs, as from the Azot connected with it in the form of Atmospheric Air.

XVII.

In so far as the combination of the Atmospheric Oxygen with the blood, or with the gaseous substances escaping from it in respiration, takes place according to the pure laws of Chemical Affinity, Respiration may with reason be considered as one of the most simple Chemical processes.

XVIII.

Now it may be rightly asked, why, as in Respiration the Oxygen only is consumed, nature has accumulated in Atmospheric Air so great a proportion of Azot, a matter unfit for Respiration; and has not rather made the whole consist of Oxygen Gas. The answer becomes easy, when it is remembered, that every Phænomenon is the

consequence

consequence of the reciprocal action of two opposed principles (IV.); that every motion has for its condition two powers struggling against each other; and that, therefore, Life can subsist only under the conflict of such opposed principles. These principles we discover in the two most predominant ingredients of Atmospheric air, Oxygen and Azot. Neither of these two can, therefore, be considered separately as the real principle of Life. They are both so, though in different respects. The excess of Azot seems to suggest, that this matter is the Exciting, Kindling, Positive principle of Life; and that, on the contrary, Oxygen is the Mitigating, Circumscribing, Negative principle. This assertion (which acquires a wider extent from the application of the general character of Oxygen, to be seen hereafter in the 47th paragraph, in which all other substances are supposed to have a similar relation to Oxygen with Azot, and therefore to be opposed to Oxygen) is so satisfactorily proved by various appearances in common life, that a minute detail would be here superfluous. We now see why Nature did not compose the Atmosphere of mere Oxygen Gas; why she connected the preservation of Life with the continuance of Respiration; why she made the whole Animal Organism, Soul and Body, dependent on the Nerves, which by no means serve,

as hath been erroneously supposed, for the secretion of a particular fluid, but only as Conductors of both these principles in the abstract, &c. We cannot have the smallest doubt as to this destination of the Nerves, if we familiarize ourselves with Galvanism, and become acquainted with the Phænomena which incontestibly prove it.

XIX.

The preservation of the body, nevertheless, does not depend merely on the internal principles above-mentioned. There are likewise external conditions of Life. Certain Combinations and Modifications of those external Principles or Elements, with other Elements already existing in the body, are necessary to the duration of Organization. The organic body receives duration by means of Nutrition, as thereby the substances necessary to its support are communicated to it from the food which it has taken. As this cannot happen without the solution of the food into its simplest ingredients, it is evident that Nutrition deserves the name of an Animo-chemical process, with still greater right than Respiration. In as much as Nutrition cannot take place without Separations and Divisions of the simple substances among one another, all Secretions and Excretions belong to this process as secondary chemical processes.

XX. The

XX.

The substances which serve for the Nutrition of the body, or which are secreted as secondary for this or that purpose, or are excreted as superfluous, must in all these processes follow the absolute chemical Laws of Affinity; which remain the same in themselves, but become, from various circumstances and conditions, otherwise modified in the living human body.

XXI.

As long as these chemical Laws of Affinity are so modified, that a perfect Equilibrium reigns in all the functions of the body, it will continue to be Healthy; but as soon as this Equilibrium is destroyed, and the Laws of Affinity, or rather their Exertions, are by external conditions otherwise modified, depart from the vital path, and approach the Dead-chemical or Physical Laws, there is immediately a transition from the Healthy to the Diseased state. The more quickly the new Modification takes place, the more quick and striking will be this transition.

XXII.

This transition is the more quickly effected, if too many substances are brought into the body, or are developed from the ingesta, and accumulate there,

there, so as to be incapable of being wrought up according to the Laws of Animal chemistry; whence they operate by producing excessive Excitement.

XXIII.

As the Laws of Animal Chemistry and its exertions may, according to the wise disposition of Organism, be determined by the effect of the powers of the Soul (VII.), it follows that the transition from the healthy to the diseased state, may be effected merely by a difference or new modification of the temperament of the powers of the Soul.

XXIV.

As the Secretions are the secondary consequences of the process of Nutrition, these Secretions, when from one or other of the above causes this Process is disordered, must be changed with it.

XXV.

That this is actually the case, is clearly shewn by the nature of the Secretions and Excretions in a state of disease, they being always more or less changed relatively to those which take place in a healthy state.

XXVI. This

XXVI.

This is most strikingly perceptible in Fevers, in which no one Secretion or Excretion exists which may not be, and, in reality, is not, more or less changed; and the products of which do not contain a greater or less proportion of some kind of matter than in the state of health. Whoever has only once observed the changes of the Urine, Stools, Evaporation, Breath, Colour of the face, the Mass of the body altogether, the Bile, Blood, &c. will be unable to entertain the smallest doubt on this subject, if in the least degree capable of seeing Organism in this only possible point of view, which according to Nature must be Chemical.

XXVII.

Fevers, therefore, distinguish themselves from the Healthy state, in no other way than that in them the Secretions and Excretions, which in Health proceed under the Equilibrium of the various heterogeneous organs and ingredients, are so changed, that this general Equilibrium is lost, and consequently a general disproportion takes place. As now the Secretions and Excretions, as well in Health as in Fever, consist in a peculiar separation and combination (determined by the Laws of Organism) of the substances working on and in the body, they are most properly to be

compared

compared with thoſe processes of Dead-chemiſtry, in which there is a similar separation and combination, caused by external and internal circumstances. Since this change, as every novice knows, is most easily perceived in Fermentation, the Secretions and Excretions may be best compared with this process; and as Fever is only a series of Secretions and Excretions differently modified from that which we remark in the state of Health, this comparison may be completely applied to Fever in general. The nature of the Secretions and Excretions in general in a Healthy state, must therefore serve us as a scale by which to judge of the Febrile state; and if the former, as is and must be case, consist in the natural separation and combination of the substances which are contained in the body itself, and conveyed to it from without, together with a preservation of the general Equilibrium, the latter state must consist in the anti-natural separation and combination of these substances, together with a removal of the general Equilibrium; or, in other words, if the former be a natural Fermentation, the latter must be an anti-natural Fermentation.

XXVIII.

In this compariſon it must, of course, not be forgotten, that in Fever the Fermentation-like separation

separation and combination go forward in a self-active, animated body; while, on the contrary, in the Dead-chemical Fermentation, they take place out of such a body, among mere lifeless substances. It would, therefore, be absurd to apply the laws of Dead Fermentation to the Secretions and Excretions dependent upon life, in the same manner as they hold with regard to dead matters. It is true, the laws remain the same in themselves; but in the Animated Body there is such a variety of Organs and Powers, of the most complicated Affinities, and of determining Principles, that we can never say, "Because this or that product proceeds from Dead Fermentation, it must likewise appear in the living body, under similar passive conditions."

XXIX.

As every disease, in general, is a peculiar modification of the state of Life of the body, so also is Fever, in particular, a modification of this state. The word Fever is accordingly used to distinguish a peculiar state of Life, which must discover itself by a certain form, in order to characterize a Genus of Disease, different from all other Diseases.

XXX.

In so far as, by the term Fever, we point out a certain form of Disease, which belongs in common

to all the maladies included under that name; so far must all these several maladies agree with each other.

XXXI.

That point, in which these different diseases agree with each other, and by means of which they become Fevers, must, therefore, be something Distinguishing, Essential, General, and Original; and must be absent in none of these diseases; for, if it were, they would no longer be Fevers. It must likewise be something in Common; as, on that account only, the various special forms of disease, known under the name Fever, can be classed under this appellation. It is with reason called the Generic character.

XXXII.

Without the presence of this Generic character, no disease can be a Fever. It is evident, from the rules of Logic, that what belongs to the Genus, must belong to the Species; and that the latter is a Species of the former, only because that belongs to it, which is peculiar to the whole Genus.

XXXIII.

All Fevers, from the simple Ephemeral Fever to their highest degree, the Plague, are, therefore, only

only different Species of one and the same Genus; and in order that a right definition may be given of Fever in general, the Common (XXXI.), that is Generic, character must be included in the definition.

XXXIV.

Now what is this Generic Character? Does the perception of it lie so near, that it may be immediately discovered? To a thinking mind it certainly lies near enough. For though it cannot be materially discovered, because it is itself not material, but abstract, yet we may infer it with absolute certainty from the aggregation and arrangement of the Phænomena of Fever, and its perceptible external causes.

XXXV.

Now we may empirically remark, that every thing which disturbs the general proportions of the two principles of Life (XVIII.) relatively both to themselves and to the simple and compounded matter existing in the body itself, by means of which is produced the variety of principles (IX.) necessary to Life; whatever, I say, disturbs these proportions, and thereby occasions that Fermentation which I have called Anti-Natural, (XXVII.) excites such symptoms as are peculiar to Fever.

 XXXVI. These

XXXVI.

These symptoms consist in a sometimes greater, sometimes less, change of all Secretions and Excretions, which depends on the disturbance of the due proportions of the matter operating on and in the body, produced either by an absolute diminution of Oxygen, or by a particular chemical application of it, occasioned by external circumstances.

XXXVII.

The Generic Character or Essence of Fever, the symptoms of which I suppose already known, consists, therefore, in an Anti-natural Separation and Re-combination of the simplest ingredients of the human body, occasioned by the Anti-natural, whether absolute or relative, local or general, Diminution of Oxygen. It is hardly necessary to suggest that the word Anti-natural is by no means used here, as if any thing which really occurs, occurs in opposition to the Laws of the general course of Nature—a supposition which would imply an absolute impossibility. It is only used in contra-distinction to what is usually called the Natural state (XXVII.)

XXXVIII.

This Diminution of Oxygen can be occasioned as well by external as internal causes.

XXXIX. Among

XXXIX.

Among the external causes, besides Miasmata, as they are commonly called, and the noxious ingredients in the Atmosphere in general, there are to be reckoned what we call Exanthematic Poisons; all of which produce an Anti-natural Separation and Re-combination among themselves of the most simple ingredients, by means of the Fermentation effected by their reception into the body: whence it happens that the right proportion of Oxygen to that of the other substances is destroyed, or the bond of natural union with them is broken.

XL.

As in the healthy state an uninterrupted series of Animo-chemical processes, or, in other words, an uninterrupted chain of never-ceasing, instantaneously compleated, and recommencing Fermentations, takes place; so, likewise, can all those external things or circumstances which oppose the natural progress of these Fermentation-like processes, and interrupt or disturb them, occasion such an Anti-natural Separation and Re-combination; or, in other words, produce a Fever. Whoever knows the course and phænomena of Dead-chemical Fermentation, and the important influence of external circumstances, as the Temperature of

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the Air, the state of Electricity, &c. cannot object to this position.

XLI.

In the same manner as these external things are capable of exciting Fever, so likewise are the Internal agents already existing in the body, or there only generated.

XLII.

As in all Animo-chemical processes, the Solid Parts, Muscles, Nerves, Vessels, &c. have their determinate co-operation; every thing which disturbs or changes the powers or energies of these parts (and whatever does so must necessarily, according to the above-mentioned Laws of Nature (IV.), be itself of a Chemical kind) can produce a change and destruction of those Animo-chemical processes which are conformable to Nature, and thus generate Fever. Mental Impressions can, therefore, have the same share in the production of Fever, as Corporeal or Material Agents.

XLIII.

The Proximate Cause of all Fevers lies, therefore, in a Defective Reception, or the Anti-natural application, of Oxygen; or in the Excessive Accumulation and Developement of Azot, Hydrogen, Carbon, Sulphur, Phosphorus, or any of the other ingredients

ingredients of the human body, which are considered as Simple; or in the various possible Anti-natural Combinations, Binary, Ternary, Quaternary, Quinquenary, &c. of these substances, either with each other, or with those which modify them, and which are conveyed to us from without under the names of Caloric, Matter of Light, Magnetic and Electric Matter, &c.

XLIV.

According to the share which this or that matter has in producing the state included under the name of Fever, and the seat of its Developement, and the degree and species of its Combination, on one side; and according to the consequent modification of the Excitability or Activity of the Organic parts themselves on the other; the state, which we call Fever, will exhibit different appearances, and receive different names. It will not be required of me to determine precisely here the Causal connections of all these appearances, as they depend upon highly compounded changes, not always perceptible to our knowledge, confined as it is in proportion to what still remains to be investigated.

XLV.

If, therefore, any morbid state is to be distinguished by the name of Fever, it is an indispensable

sable condition, that the Bond, or Proportion, of the natural general combination of the Oxygen with the other substances be broken or destroyed by Corporeal or Mental Impressions; and that the latter substances, individually or collectively, gain the ascendancy.

XLVI.

As long as Organism has not lost the power of re-uniting this Bond, and restoring the Right Proportion; that is, as long as the possibility of restoring the general just proportions is not lost by the destruction or unfitness of the single organs necessary for the preservation of these proportions; and the Animo-chemical processes have not approached too nearly the transition to the Dead-chemical or Physical processes, every Fever will be certainly and radically removed by restoring the defective Oxygen in such a manner as that no Viscus necessary to Life shall be thereby endangered.

XLVII.

Oxygen, therefore, must be the only sure remedy against Fever; which, however different in its origin, in its nature remains one and the same (XXXVII.), because this diseased state always proceeds from an absolute or relative want of Oxygen.

gen. Although in the latter case, or its relative want, there may be present in the body even a greater quantity than would be in itself necessary to preserve the Equilibrium, yet it is to be considered as not sufficient for the attainment of this end, because it is Chemically Latent, in consequence of particular outward circumstances, in one or more substances capable of Oxydation, and forms with them half-acid or oxyded kinds of Gas, which, under these circumstances, cannot be again decomposed into their constituent parts, and must therefore operate as Noxious or Exciting Agents. The general characters which belong to Oxygen, namely, that all other earthly substances, whether distinguished by this or that name, whether simple or compounded, shew a continual tendency to unite themselves with it; that, preferably to all other substances, it really enters into this connection with them; that, consequently, in as much as it does this, it must be opposed to all others; and that it enters into Combustion with all others, without being itself Combustible—these characters serve as the most incontestible proofs that Oxygen really acts that part, which, in obedience to the voice of Nature herself, I have here assigned it.

XLVIII.

As we cannot represent Oxygen by itself, and consequently cannot apply it by itself, those substances

stances which have undergone the most compleat Combustion with it, and in which, consequently, it is most purely aud simply Latent, must be applied to the cure of Fevers: and these are Acids.

XLIX.

Every Acid is a substance Burnt by the accession of Oxygen; for it consists of the Acidifiable Basis, and the Oxygen, neither of which exists by itself, but each only in opposition to the other, in the moment of their conflict passing over and being extinguished in a third, which is the peculiar product called Acid. In proportion, therefore, as there is a smaller quantity of oxydable basis in this product relatively to the Oxygen, will it be the more efficacious in the cure of Fever.

L.

Of all the Acids, the Mineral deserve the preference, because this condition exists in them more than in all others; and by means of it the excessive disengagement of Caloric is prevented in the shortest and surest way.

LI.

It will certainly be objected, that an Acid is something very different from Oxygen, which we suppose necessarily in a state of purity in order

to

to check Fever; and that the Oxygen in Acids is for the most part too intimately connected with the Oxydable bases, to suffer itself to be communicated in the necessary manner. I answer; every union of an Acid with another substance, whether Water, Gas, or Metal, is a process of Combustion; and no Combustion can take place, without the combination of Oxygen with the Combustible Basis. That the union of an Acid with another substance is a process of Combustion, is discovered by the action of the stronger Mineral Acids on all vegetable and animal substances, which are thereby destroyed. The stronger the Acid, the more violent and perfect is the Combustion. The weaker the Acid, the less perceptible is the Combustion. In this process, however, Oxygen must always be communicated. The same thing must also, of course, happen in the body, if an Acid be introduced into it, and can unite itself with the substances present there; that is, can be Burnt with them. The degree of Combustion will, indeed, be different in proportion as the Acid is more or less Weakened by the addition of water or other substances, and as the body is of a higher or lower degree of Temperature. The higher the Temperature, the more rapid will be the decomposition of the Acid into its Elements; even though, as in the case of the Muriatic Acid, the

Oxydable

Oxydable Basis should have so close an affinity to Oxygen, as not to admit of being separated from it by any process of experimental chemistry hitherto known. That a decomposition of this Acid may, nevertheless, take place in the human Organism, I conclude, because Marine Salt is indispensably necessary for mankind; and the Basis of this Salt, hitherto, indeed, unknown in itself, is found among the elements of the human body.

LII.

Perhaps, also, I shall be thought to have contradicted myself in saying (L.), that by the Mineral Acids the too great escape of Caloric is most speedily and most certainly prevented; while it is well known, that precisely in the moment of union of Mineral Acids with other substances, much Caloric does escape. This latter proposition I certainly admit as being incapable of refutation; but I observe in answer, that Mineral Acids in a pure state, or without Water, cannot be exhibited; and that the substances, whatever they may be, which are employed in order to dilute them, must necessarily be deprived of a great part of their Latent Caloric. If, therefore, a combination take place between the Oxygen of the Acids introduced into the body, and the Organic Humours, as according to the above-mentioned principles

ciples (LI.) must be the case, the Caloric confined in these Humours becomes developed. As, however, Caloric is known to exert a constant effort towards an Equilibrium, it must connect itself with the substances which are employed for the dilution of the Acids, and are already deprived of their Latent Caloric. Consequently it will become again Latent, and no more escape in a Free state, that is in form of dry Fever Heat, but in a Latent state in the Secretions and Excretions which take place according to the natural course of Organism. My position, therefore, in spite of its apparent contradiction, remains firm and immoveable.

LIII.

In what light we are to consider the objection, that the opinion of the existence of a particular Caloric, Oxygen, Azot, Hydrogen, &c. is hypothetical, has been partly explained in the fourteenth paragraph. I have, indeed, been myself there obliged to allow that these substances are in themselves unknown, and that they must ever remain so, because each exists only in its conflict with its opposite. In this acknowledgment, however, is by no means involved the concession that substances which are and must be unknown by themselves, do not exist at all. That it is hypothetical to assume their existence, is refuted by the possi-

bility

bility of making a perfect decomposition of the Gases, which consist of Caloric opposed and common to them all, and of the Basis peculiar to each. Let only those experiments be considered, by which are demonstrated the decomposition and composition of Water from Hydrogen and Oxygen, of Atmospheric Air from Azot and Oxygen, of the Acids from Oxygen and the Oxydable Basis; and let any one still call it an Hypothesis to attribute real existence to these substances, if he will persuade the world that he has seized and comprehended the first principles of Chemistry in its widest signification, the basis of all empirical knowledge, which, indeed, is the only sphere of a Physician. Hypothesis proceeds from arbitrary adoption, from fiction; at the best from conjecture. As soon, however, as that which is adopted is derived from pure Empiry, is evidently demonstrated by Facts, and found to correspond with the general laws of Nature, it ceases to be Hypothesis, and rises to Theory, which is founded on Necessity. It would, therefore, be a mighty mistake to confound Theory with Hypothesis; and nothing less than to betray that ignorance of the first necessary principles of all Empirical knowledge, of which I have so often spoken. To apply that which is elevated into Theory to those circumstances with which it is connected, in order

to scatter light over it, is not only allowed but even necessary; and to reproach any one for this application, would be the same as purposely to mistake the original dignity of the human mind, and to wish to confine its innate tendency to ever-progressive knowledge. Objections can be established then only, when the application made from a Theory, that is, the Special Theory thence derived (which, for that very reason, must be practical), falls into absurdities, and contains contradictions, which cannot be explained in a proper way.

LIV.

All objections to my application of pure chemical Theory to Practical Medicine, in as far as it concerns Fever, will completely disappear, when it is proved by experience, that the cure of Fever depends on the restoration of the proper proportion of Oxygen to the other substances found in the body; and that, consequently, Acids are more suited to Fever than all other remedies hitherto more empirically employed.

LV.

The Cure of Fever will, therefore, consist only in communicating to the body, and equally dividing in it, such a quantity of Oxygen, as is necessary for the restoration of the Equilibrium between

tween its different constituent parts, which was till then destroyed by the motions of the Fever.

LVI.

On the principle that Fever is a Fermentation-like process, during which certain Elements separate themselves from those with which they were previously united, and enter into a totally different combination with others, the laws of Dead Fermentation must also admit of being applied, in the due modification, to Fever.

LVII.

As Dead-chemical Fermentation is variously modified by certain circumstances; is assisted, for example, by a moderate Temperature, or by the addition of substances promotive of Fermentation; but, on the contrary, is disturbed and thrown out of its way by a sudden and excessive rise or fall of the Temperature, or by the addition of a Heterogeneous substance, which changes the whole reciprocal proportion of the Elements which are in the act of Fermentation; so likewise, the Fermentation-like union of the single Elements, which takes place in the body during Fever, may be modified, and, therefore, the generation of the product of Fever, that is, the restoration of the general Equilibrium, may be sometimes promoted,

promoted, sometimes disturbed, and anti-naturally changed; more especially as so many determining bases already exist in the body.

LVIII.

And in the same manner as the generation of the product of Dead-chemical Fermentation does not, and cannot, take place on a sudden, but only gradually, within the time appointed for that purpose by Nature, so the generation of the product of Fever cannot take place on a sudden, but only in the time required and determined for that purpose by the Nature of Organism itself.

LIX.

As, therefore, Dead-chemical Fermentation must pass through many degrees of the scale of Fermentation, before it arrives at that in which it must reach the product and be extinguished in it, so likewise Fever must pass through several degrees of the scale of Fevers, before it can reach its end, and be extinguished in its own product, the Critical Decision. Now the more nearly the feverish mass of the body has approached this highest step in the scale of Fermentation, the more rapidly and completely will the Fever end. And as there are means, by which, as in the Dead-chemical Fermentation, the approach of the fever-

ish mass to this highest degree may be accelerated, the cure of the Fever must be so much the more rapidly and completely obtained, as we strike into the proper way, and apply the necessary means. As now the termination of the Fever depends upon the restoration of the right proportion of Oxygen to the other constituent substances of the body, the use of remedies which will contribute to this end must have very good effects; and these effects must be the more perceptible, in proportion as the remedies co-operate towards their production.

LX.

Led by the principles above set forth; convinced of the necessity of employing Galvanism in the explanation of the phænomena which respect motion in the animal body, in its healthy as well as its diseased state; taught by innumerable experiments of a Galvanic nature, that the actions of all organic parts are maintained only by the constant reciprocal action of opposed agents, of which I have considered Oxygen, and all matter capable of Oxydation, as the substrata; seeing that the Excitation produced by opposed principles may be mitigated by Acids, and the Excitability itself by degrees almost entirely extinguished; and finally warned, by daily observation, that Instinct leads

leads those who are affected with Febrile complaints themselves to the use of Acids and other remedies containing much Oxygen, the employment of which, according to long and old experience, has ever proved highly effectual in Fevers—nothing was more natural than that I should discover in the Mineral Acids the most certain remedy against Fever, and should promise myself success from their use even in the last period of that disease, in which Death appears to be hastening on, and in which no Physician has ever seen any indication leading to their exhibition, and none has ever really given them.

LXI.

I considered myself as the more entitled to indulge this hope, in as much as I could not suppose the Danger in all Fevers, in which there exist no important Organic Læsions, to be otherwise than Identical. Striking as this position may appear, it will be equally evident to every one who is able to see the whole Process of Life in the only just point of view, the Animo-chemical. In Fever, there can be Danger then only, when that general mixture of the constituent parts of the body which is adverse to health and constitutes Fever, approaches (either according to the natural and proper course of this process, or in

consequence of the intervention of sudden external determinations by which it is disturbed or changed) that highest degree of the scale of Animal Fermentation, at which it must come to the Product (LVIII.), and at which the Equilibrium necessary to Life must be either restored, or entirely annihilated by the Chemical Destruction of the Excitability. As that highest degree of the scale of Animal Fermentation can remain only one and the same, so likewise must the Danger in itself always be the same. In proportion as the organic matter passes more quickly through the different degrees of this scale, the greater is the Danger; the more slowly this happens, the less is the Danger, or, rather, the more distant. This quicker or slower progress depends on the greater or less influence of external and internal causes, and on the more frequent or rare display of affinities which they occasion among the elements themselves.

LXII.

The first and principal object was to discover in what quantities Acids may be given without injury. I chose my own body, already accustomed to Galvanism and Chemical experiments, as the subject of the trials requisite for this purpose; and, with this view, began with taking by degrees

greater

greater and greater quantities of Sulphuric Acid, as the strongest of all; the internal use of which had been long known to be extremely salutary, and which has the advantage of being very easily decomposed by Carbon and Hydrogen, particularly in a high temperature. It will appear almost incredible when I assert, that, in an Indigestion which I purposely occasioned, I took within an hour a whole ounce of Concentrated Sulphuric Acid, diluted, of courſe, with a great quantity of water, without ſuffering any farther ill consequences, than that my Body became very much swelled, I was troubled with eructations, and the next morning, after disturbed sleep and much dreaming, had frequent offensive and watery stools.

LXIII.

This experiment determined me the more strongly with regard to the first Case, related in my new Cases of Disease (Krankheitsfällen), vol. i. Nuremberg, 1800, in which were present the symptoms of near dissolution, to make use of the Sulphuric Acid in the strongest doses; as I could not but consider the Singultus, Subsultus Tendinum, and other fatal symptoms, to be Galvanic Convulsions, which were evidently occasioned by the substances opposed to the Oxygen and developed

veloped in great quantity; and as, according to my Galvanic experiments made on living and dead Animals, I might expect that in the former as in the latter case, the Excitation must be diminished, if an intermediate link, which, according to the laws of Chemical Affinity, chemically unites itself so readily with, and neutralizes, the substances of an opposite nature, were introduced into the hitherto closed Galvanic chain.

LXIV.

I gave, therefore, at first, in a quantity of Raspberry Syrup and Water sufficient for involving and diluting it, one hundred drops of concentrated Sulphuric Acid, which, in order to conceal the effervescence from those who were present, I had previously mixed with two parts of Water. As, however, the patient vomited in consequence of this dose, and I therefore imagined that I had given too much at once, the second dose consisted only of fifty drops; the third of fifty; and the remaining two of full one hundred drops each.

LXV.

As the body of this patient was extremely swelled and distended, which I could not attribute to any other cause than the presence of a great quantity of developed Gases of a mixed nature, I resolved

resolved to try whether these substances could not be changed more powerfully than was hitherto common, by the application of a remedy operating immediately upon them. The known good effects of the Vinegar Clyster in the state of Malignity, and the conjecture that Mineral Acids injected into the Intestinum Rectum would do as little injury there as in the stomach, had long led me to the thought of thus trying these Acids. The Muriatic Acid appeared to me preferable to all others for this purpose, because it is more volatile and weak than the Sulphuric, and, when developed as a Gas, so readily unites itself with all other Gases. I ordered forty drops of Muriatic Acid to be given in a Clyster of mere warm water; and as this was followed by considerable evacuation, and much breaking of wind, with evident relief, I gave a second Clyster with the same quantity of the Acid. The event entirely answered my expectations. By the internal use of Sulphuric Acid, and the exhibition of Muriatic Acid in Clysters, the patient was within a few hours rescued from the greatest danger, and compleatly restored to health.

LXVI.

I afterwards became more intimately acquainted with the inexpressible advantages resulting from these

these Mineral Acids, and therefore used them in larger or smaller quantities in all Fevers which presented themselves to me, by whatever names they might be called; and whether, according to the division of the older systems, they were Acute, Remittent, Intermittent, Simple or Complex, Idiopathic, Sympathic, or Symptomatic, Original or Accessory, Inflammatory, Putrid, Pituitous, Bilious, Exanthematic, Nervous, Slow, Epidemical, Contagious, &c. I thus perfectly convinced myself, that, as I had before supposed, these Acids alone are sufficient for the cure of each Fever within the shortest time appointed by Nature for that purpose; and that, if there exist no Organic Læsion, which is inconsistent with the continuance of Life, they remove danger as rapidly as is possible, provided there be no errors on the side of the Physician, or Patient, or Attendants.

LXVII.

After having for a long time exclusively used Sulphuric Acid internally, and having often found that the patient took it very reluctantly, that it did not operate quickly enough, because it is not in itself sufficiently volatile, and therefore does not readily communicate its Oxygen, and that it sometimes even disagreed with the stomach; I endeavoured to give by the mouth, in as strong, nay

stronger

stronger doses, the common Muriatic Acid, which in itself is more volatile than all other Acids; and as in this, and all subsequent cases, it did every thing which I could expect or wish, I afterwards used it in almost all cases in which I had formerly given Sulphuric Acid. Whoever, therefore, would pay attention to the REMEDY which I have engaged to make publicly known, has it in the SULPHURIC and MURIATIC ACIDS. The latter of these Acids is far from having been known or applied according to its desert; though the circumstances of its being more agreeable to take than the Sulphuric Acid, of its exceeding all other Acids in volatility, of its being, in connection with Natrum, (that is, in form of Common Salt) indispensably necessary to mankind, and so much liked by animals, and of its being, in this combination, scattered about in such enormous quantities in all parts of the world, particularly in the sea, should have long ago called our attention to its extraordinary importance. Experience, therefore, and the theoretical principles which I have mentioned, determined me to prefer, in a medicinal view, the Muriatic Acid to all others: and although it might be objected, that it had been hitherto impossible to analyze the Muriatic Acid, (for I have not yet learnt what was the Analysis of Berthollet) it may properly be answered, that this

this decomposition must really take place in the body, because neither Common Salt when swallowed, nor Muriatic Acid, is again excreted in its former state. For the farther confutation of this objection I refer to the fifty-first Paragraph.

LXVIII.

Besides the Sulphuric and Muriatic Acids, which surpass all others in intensity of strength, I have made use of other Acids for the sake of putting my principles to the test, and found them altogether confirmed. Nitric Acid was often very serviceable to me, particularly in Dysenteries, and chronic painful Diarrhœas; but as it is far inferior in volatility to Muriatic Acid; as it cannot be completely decomposed by any means, one part of the Oxygen being separated, and the other remaining in combination with the Azot as Nitrous Acid, in consequence of which it differs only in degree from the so frequent source, according to Mitchill's ingenious theory, of the most terrible Epidemic complaints; and as I saw that very considerable swelling of the whole body often followed its application; I now seldom use it. I have also often employed Phosphoric Acid, but have never yet discovered any particular good effects from it in urgent cases. Any remarkable advantage from its use must be the less expected,

as

as it is nearly the most fixed of all the Acids. Its high price is likewise a great impediment to its general exhibition. The Superoxydated Muriatic Acid is, on the contrary, one of the most pleasant and cheap internal remedies; which I have given with the best effects, particularly where a rapid communication of Oxygen was necessary; as, for instance, in Lethargic states. It must, nevertheless, be infinitely inferior to the common Muriatic Acid, because the Intensive quantity of Oxygen contained in it is infinitely more inconsiderable than in the latter Acid. I do not here lay any stress on the Vegetable Acids, because they contain in their elementary mixture much Hydrogen and Carbon; though their use in Febrile symptoms of a slighter nature has been confirmed by the experience of thousands of years.

LXIX.

All these Acids must, of course, operate most powerfully, when introduced immediately into the general organs of Nutrition of the human body; into the passages of Digestion. They operate principally in the Stomach. Next in salutary effect is their application in Clysters. They are also of great service, when applied externally to the Skin, whether in Baths or in Fomentations. It is obvious that, in the two latter methods, they must

must be diluted; and that in the last, with a view to œconomy, old woollen or linen cloths must be employed.

LXX.

Before I proceed to the more particular account of the use of Acids, an apparently well-grounded objection will present itself, that Fevers may be removed without the use of Acids, and by very different remedies, and that, therefore, their application is not so indispensable as I maintain; nay even that my whole fabric must, on that account, fall to the ground. In answer to this I observe, that the remedies known and used against Fever, from time immemorial, are either substances compounded of Mineral Bodies and Acids, or Vegetable substances containing more or less of free as well as latent Oxygen, and decomposed into their simple constituent parts by the peculiar powers of the body, either Chemically or Galvanically determined. How far substances of the first kind, the Mineral, may be salutary against Fever, may be easily determined from what has been before said; and for that very reason it is unnecessary to demonstrate how far Vegetable remedies, in which there is a portion of disengaged Oxygen, that is, of Acid, can remove Fever. All, therefore, which remains to be determined

mined is, how far Vegetable substances which contain no Acid are capable of checking that disease. First; it is necessary for me to remark, that Acid and Oxygen are two very different things; the former an already compounded, burnt substance; the latter, a simple, incombustible substance, not to be exhibited by itself; the existence of which we can only infer, because it cannot be perceived by the senses. Now as the Life of the Human organic body can subsist only under the constant reciprocal action of opposed principles, among which Oxygen is the only one which has a negative relation to all others; so also the Life of the Vegetable organic body can subsist only under this mutual alternate action. For Organism is in itself always subject to similar conditions; and as, in the former case, the Oxygen is received into the general mass as a constituent part, the same thing must happen in the latter case. These are general, immutable Laws of Nature for all Organism; and Man, himself Organism, if he would maintain his own dignity, cannot overthrow or deny them. All Vegetable substances therefore, according to their peculiar Organism, contain sometimes more, sometimes less, Latent Oxygen; as they all likewise contain Latent Caloric. So, according to the experiments of Fourcroy, Bark has a very considerable quantity

tity of Oxygen. This holds also with regard to the Domestic Barks, and the kinds of Wood substituted for the Fever Bark; in which the quantity of Oxygen appears, according to my experiments, to be always in direct proportion to their density. Aromatic plants and their educts, as Resin, Œthereal Oil and Spirits, particularly Spirits of Wine, Naptha, and Camphor, contain a great quantity of Oxygen. Even Opium itself has a considerable portion of it; as we have cause also to conjecture from its milky origin. The Natural Philosopher has, however, a wide field still open for the most interesting experiments respecting the determination of the state of Oxydation in Vegetables. Whether, however, these experiments can be made in the retort, is a question which he alone can answer, who can decide on all Natural Phænomena from the principles of a Chemistry of Nature. And whoever considers the constant changes of Separation and Re-combination of simple substances in the whole Organism of Nature in general, and consequently in the human body, and can estimate the influence of this continued play of simple and compound Affinities on the animation and temperament of the Organic Powers, sees, if not absolutely the clear light, at least a dawn and glimmering, on a point where the raw Empiric observes nothing but obscurity and darkness.

ness. By that change of Affinities, and their incontestible influence on the temperament of the Organic Powers, is shewn, not only the possibility, but even the reality, of the disengagement of the Oxygen Latent in the organic mass, and the consequent restoration of the general Equilibrium in the human body. Even the remedies exactly opposed to Oxygen can often so far operate in the body by means of Oxygen, that, by their nearer Affinity with those substances, in union with which the Oxygen was till then latent in the body, they can, in consequence of their Temperature, Moisture, Electricity, &c. unite with those substances, and thus disengage the Oxygen. In this manner principally operate the commonly called Volatile Stimuli, which are successfully given in Fevers, particularly towards their conclusion; as they have occasioned either the above-mentioned effect, or a different Temperament of the Organic Powers, which has ultimately produced it. If, however, on one side, it has been impossible to determine this effect rightly, because the means and conditions of its applicability are not accurately known, and it may often and easily happen, that, by the very principles which these stimulating remedies contain in their elementary mixture, the Excitability may be entirely suppressed; and if, on the other side, Nature, from absolute or relative want

of

of Oxygen, and a consequent faulty temperament of powers, is not always capable of producing this effect, and Art has means at hand immediately to remedy this want and faulty temperament; it appears to me more advisable to make use of the means which will immediately obviate the deficiency, than either to commit this business entirely to Nature, or to attempt to supply the want by remedies operating only mediately. If in the ordinary actions of Life, we endeavour to find the shortest way of obtaining our end, how much more should we do so in Practical Medicine, where our efforts are directed solely to the well-being and happiness of Mankind.

LXXI.

That there are, however, cases in which, in order to excite or multiply the play of Affinities, remedies acting mediately may be used alternately, or at the same time, with those which operate immediately, I very readily allow. The more accurate distinction of these cases belongs, however, to a particular therapeutical inquiry, in which, at some future period, I will ascertain it. I as readily confess that Emetics, Purgatives, and Clysters, are often preferable to all other remedies in Fever, because they at once clear away the substances from which a fresh stimulus to Fever would

would be continually developed; and, for the complete cure, it will not then be necessary to administer so many unpleasant Acids as would otherwise be the case. Baths and Fomentations likewise contribute infinitely to the cure of Fevers; as by these means Caloric is communicated or abstracted, according as the temperature of the Bath or Fomentation exceeds or is exceeded by that of the body, the due Equilibrium of the constituent parts of which may be thus so much the more easily restored. That the efficacy of these means may be increased by the addition of Acids, has been mentioned above (LXIX.)

LXXII.

The quantity of Acid which it is necessary to take internally for the perfect cure of Fever, cannot be precisely determined; because we can never exactly ascertain the sum of the stimulating substances existing in the body, by which the activity of all Organs is determined, and have no other measure to direct our practice than the good effects attending its use. It must, therefore, be left to the intelligent Physician to give the Acid in such a manner, as that the object, which is the Cure of the Fever, shall be duly attained, and that no single Organ, and thereby the whole body, shall be endangered. It is only the person

uneducated to Medicine, or the Physician dwelling in the low sphere of quackery, who will ask me to ascertain the dose by which every Fever must, of necessity, be instantaneously cured. The right application of the remedy will, on the whole, always remain the inheritance of judicious and wise Physicians only: the shallow head will use it with as much uncertainty as all other remedies.

LXXIII.

It is a general rule of Cure not to carry the use of a remedy on any occasion too far, but always to accommodate it to the circumstances—in a word, to the degree of existing Fermentation. Let the Mineral Acid above-mentioned (LXIV. LXVIII.) be, therefore, in the beginning and advance of Fever, used in moderate, but frequently repeated, quantities. For instance, let from a drachm to half an ounce be diluted with eight ounces of Water, mixed with one or more ounces of Syrup; and, in case of the existence of certain indications, long known to Physicians, let some drachms of a proper Spirituous or Stimulating substance be added. Of such a mixture let one or two Table-spoonfuls, or even half a Tea-cup full, be given every hour or every two hours, either mixed with more Water, or with Water drank after it. At the time of Danger, and at the

Critical

Critical Period, let one or two Drachms (40, 50, 60, to 100 drops) be given at once, and repeated according to necessity. We cannot give in the same quantity of the vehicle as much of the Concentrated Sulphuric Acid, as of the Common Muriatic or Nitric Acids, because it is intensively stronger than the two latter. The Hyperoxygenated Muriatic Acid must always be given in very large quantities, as from one to two ounces at a a dose, once or twice in an hour. I myself once took within four hours a whole quart bottle full; and several of my patients have taken, in the same space of time, twelve ounces or more. The only obvious occurrence which followed its use, was two or three watery evacuations.

LXXIV.

The intensive strength of these Mineral Acids makes, in fact, no difference; for as the consequent relief of symptoms, and the accession of favourable signs, are the only just rule by which the Practitioner can proceed, if forty or fifty drops do not produce the desired effect, the dose must be increased, or repeated, at the same intervals, till the favourable signs appear. The Acids, therefore, may be used indiscriminately, just as they are found in the Apothecaries' shops. In one shop more, in another they are less, con-

 centrated.

centrated. The want of strength must be compensated by larger doses, or more frequent repetition. Our practice will, however, be incontestibly much facilitated by using Acids which are always equally strong; that is, which contain as nearly as possible the same intensive quantity of Oxygen. Circumstances must determine with accuracy how long the use of Acids must be continued. In one case one hundred drops are as effectual as eight hundred or more in others. In proportion as the Fever has approached more nearly to the highest degree of the scale of Fermentation (LIX.), the less will be necessary for producing the Crisis and Cure of the Malady. In the second volume of the Cases of Disease which I am about to publish, I will mark clearly the doses administered in every Case.

LXXV.

The unpleasant and strong taste of the Acids often occasions the Physician insuperable impediments. Care, however, must be taken to dilute the dose, which a patient is to take at once, with a sufficient quantity of Water, and to sweeten it by the addition of Syrups, agreeably to the taste. How much Water or Syrup is used for diluting and involving it, is nearly indifferent. By Syrup, however, the power of the remedy is evidently weakened.

weakened. The tongue of the Physician can best determine the proper degree of strength; but he must not neglect to take into consideration the sensibility of the organ of taste in the patient. The greater the danger, the more easy it is to administer the remedy in strong doses. The more nearly the patient approaches to recovery, the more difficult it becomes to give him the same dose, or even to repeat a much smaller. The excoriation of the lips and inner surface of the mouth, which is sometimes, though not very frequently, observed, is partly the consequence of a want of proper precaution in the Physician with regard to the due envelopement and dilution of the remedy, but partly, and more frequently, the effect of the disposition to excoriation, occasioned by the violence and malignity of the Fever. There is no reason to fear excoriation of the stomach, provided the remedy be given in the proper place, and under the proper circumstances. If Horse-Radish, Cayenne-Pepper, Mustard, and other pungent spices, which produce vesications on the outer surface of the body, can be taken without injury, with much less may an Acid, as, especially when given in Water, it obeys its affinity with the liquid and gaseous substances always existing, during Fever, in the stomach and bowels, and is neutralized by them long before it can attack the

substance

substance of the stomach itself, by combination with the Carbon existing in its texture. It frequently happens, that from the use of Acids the teeth are set on edge. This is of little consequence, and even in no respect prejudicial to the teeth. The earlier this symptom happens, the sooner it is lost by perseverance in the use of Acids. In chronic cases it indeed serves, under certain circumstances, as a sign that the Acids are to be discontinued. I omit here the particular mention of these circumstances, as not belonging to this place.

LXXVI.

The signs of a favourable effect from the use of Acids in Fevers are different according to the difference of these diseases. Events directly opposite may, according to the difference of the state, indicate equally good consequences. Eructations, sometimes even with Vomiting at the moment of swallowing, Borborygmus, Wind passing downwards, Diarrhœa, often of a very violent nature, Rising and Sinking of the Pulse, Change of Temperature, Sweat, Salivation, increased Discharge of Urine, greater Repose and more Sleep, &c. are the most common symptoms, which, after circumstances of danger—for we are not speaking here of the usual course of Fever—may lead us to expect a favourable issue. The most favourable

sign

sign is when the Patient returns from a state of Coma, or Insensibility, to Sense, and remains so, or falls into a soft sleep, during which the Pulse becomes more slow, composed, and moderately full. Of the other signs, many may be present at the same time, without our being able to calculate on a certain recovery. Many, however, a great many, may be absent, without a certain loss of the Patient on that account. Farther notice on this subject is to be found in my "Cases" (Krankheitsfällen).

LXXVII.

According to my experience the following are the Signs of Death; if Petechiæ appear on the face; if one eye be half open, and the other paralytically closed; if the Cornea, which has been brightened after the application of the remedy, become again dull; if the Patient, after having come to himself, fall back again to a senseless state; if the Face acquire a Hippocratic appearance; if the Rattling in the Throat, instead of diminishing, or, at least, of remaining at the same point, increase; and if the Pulse, hitherto equal, become intermittent, wavering, and unequal. All other signs, hitherto considered as fatal, are, as far as my experience has gone, doubtful, and have often been signs even of the transition

tion from danger to recovery. In order to establish a just Prognostic, all symptoms must be balanced and compared. The true result will not be concealed from him who understands the great art of Individualizing; which can be acquired only by much and careful experience. He alone will possess the practical Look, which, in spite of all rules of cure, and prescriptions, be they ever so definite, must principally conduct the Physician, and will elevate him above the sphere of every proud Medicaster.

LXXVIII.

When by the administration of Acids we have brought the Fever to the Crisis, or removed the danger, it is generally in no other respect necessary to apply other remedies than in order, perhaps, more quickly to restore the impaired bodily strength. I have, in very few cases, given real medicines afterwards, but generally committed the whole recovery to Nature and a good Nutritious Diet; of which, as well as of my general practice, any one may satisfy himself by consulting my Book above-mentioned (Krankheitsfällen, Nürnberg, 1800, 8vo.)

LXXIX.

It is obvious that the principles communicated here are only the chief points of my particular

system of Fever, which are the most interesting to the Practitioner, and enable him to treat according to them all Fevers, whether they be of an Acute, Remittent, or Intermittent nature, and whether called Putrid, Bilious, Nervous, Pituitary, Inflammatory, Catarrhal, Intermittent, Puerperal, Slow, Scarlet, Purple; Measles, Small-Pox, Dysentery, Yellow Fevers, Plague, Hydrophobia. The large and complete detail of these principles must be kept for an entirely separate work, which will appear under the name of "The Doctrine of Fevers," (Fieberlehre). Its tendency may be learnt from this sketch, in reviewing and judging of which I intreat moderation and forbearance, as it is only the Epitome of what I could deliver. I am, however, well aware, that, as a mortal, I shall not be able to deliver any thing perfect, any more than I can flatter myself that I have done in this instance. I trust, nevertheless, that by the expression of my sentiments, I shall afford the Public all the benefit in my power. To be upright and perform my duty, readily to acknowledge the smallest merit in another, to be unwearied in the search after truth, and to avail myself of the good and useful wherever it is to be found, are the principles which have conducted me hitherto, and which, in future, I will never renounce. The object of my endeavours is the promotion of the welfare

of

of humanity. I will never lose sight of it; and on its account willingly suffer the unpleasant circumstances which usually fall to the lot of him who has the temerity to encroach too nearly on adopted opinions, and the indolence of others. Whether a single person allow any merit to my endeavours or not, will be perfectly indifferent to me. It will be sufficient that Truth, Science, and Humanity, are gainers by them. The safety, nay the relief, of a single Patient, is to me a sufficient indemnification for the censure, which, from one side or the other, I shall undoubtedly receive; and if among a hundred Physicians, only twenty acknowledge, that without the application of my remedy only one of their Patients would not have been preserved, or at least not snatched from danger so rapidly and completely, I am perfectly requited for the sacrifices which, from the first day I thought of this subject to the present, I have made of health, repose, and comfort. I do not shrink from the trial of my principles; nor do I fear to hear from an impartial Physician the objection of partiality in my system, since none is more calculated than mine to unite all parties and all systems. He, indeed, who does not know how much is comprehended under the word Chemistry, who knows no other Chemical process than that which goes forwards in the Retort or Crucible,

ble, relying on the assertion that the Body is no Alembic or Reverberating Furnace, and that all the knowledge of the Physician rests on what he calls Experience, will entirely reject my system as Chemical, and cross and bless himself lest the times of a Sylvius should return. Luckily, however, the voice of a Quack has no weight; and of these there are as many with Doctor's Hats, Offices, and Titles, as there are without these attributes. It is, without doubt, more convenient to attach one's self religiously to that which one has once learned, to deal in expressions void of sense, but of a very deep and learned sound, and to try, without discrimination, that which has ever been recommended against a disease. Not only to read, but to understand what Reil, Plaff, Von Humboldt, Schelling, Ritter, &c. have written, requires more than has hitherto frequently been found; and to understand these writings, in order to obtain from them progressive views into the science of Nature, which can only be Chemically determined, is the sole method of advancing the science of Medicine to that point which it must reach, in order to become of the greatest possible benefit to Mankind. I consider myself as fortunate in being able to contribute something to this end, by the publication of my principles on Fever. It will give me infinite joy if others should be thereby

induced

induced to tread in my footsteps, and advance a step beyond me, as I have beyond others. May they, however, always employ that precaution which has conducted me in all my investigations, and prevented my going astray!

LXXX.

I take the liberty of adding the several advantages of my Discovery in general, as laid before the Royal Committee appointed to examine into them. The first advantage is, " That it affords " Medicine a sure and firm basis, upon which, by " the endeavours of present and future Physi- " cians, may be erected a less faulty Edifice than " we have hitherto had." This is very obvious from what has been said in the preceding pages on the only possible view of Human Organism deduced from general Atomistico-dunamic principles. Whoever wishes for more clear ideas on this subject, will find his labour well rewarded by the study of the above-mentioned authors, (LXXIX.) who, since my discovery, have endeavoured, by more or less distant ways, to clear to the view the same path.

LXXXI.

The second advantage is, " That all Febrile " complaints, without exception, may be considered " in

" in a more proper point of view, and, so far, may " be more quickly and successfully removed; that " the danger in all those cases in which no parti- " cular complication exists, and the organs neces- " sary to Life are not too much injured, may be " removed, within a few hours, upon very rational " principles; that the disease may, on the whole, " be confined to a shorter course, the most com- " mon, dangerous, and in some respects terrible, " symptoms prevented, and the strength restored " in a more easy and expeditious way." Convinced as I am of the truth of this assertion, I am equally far from demanding the implicit belief of Physicians. I have laid before them, without disguise, the reasons why I flatter myself that I have considered Fever in a more just view than has hitherto been done. Let them put these reasons candidly and impartially to the trial, and suffer their own experience to determine how far they are rational and well grounded. To afford relief every where, and in all cases, will not, indeed, be possible. This would be requiring of mortals more than they will ever be in a situation to perform. It will, however, be possible in many cases, in which, according to our hitherto semiotic signs, no help could be expected, to effect, by the use of my remedy, the most complete cure. Let any one make such experiments as I have made,

and

and he will see that a few hours are sufficient to remove the danger. What we understand by Danger, every older system has taught. The idea which I have given of it (LXI.) is the same, except that in the latter the nature alone of the danger, in the former its form only, is considered. Determinate symptoms, as Subsultus Tendinum, Picking of Flocks, Singultus, Rattling in the Throat, Hippocratic Face, Meteorismus, &c. have always served us as signs of the presence of danger; and according to these symptoms, was the use of this or that remedy indicated. Now under these circumstances, in which Volatile, Stimulating, Antispasmodic, Antiseptic remedies have formerly been considered as proper and salutary, I never should have been able to have administered such large doses of the Mineral Acids, the use of which it appeared rather advisable to avoid, because they were considered as debilitating and productive of spasms, had I not, from inductions of Galvanism and principles *a priori*, and therefore in the most rational way, been led to the conviction that they might and would be salutary, even in these circumstances. If, therefore, I grounded my theory of the efficacy of this remedy on the above-mentioned signs, I did no more or less than every Physician has hitherto done; I used them, on subjective grounds, as hints for the

application

application of my remedy, just as the Physician who, under such circumstances, sees Spasms from Gouty or Rheumatic Acrimony or Accumulation of Fæces, or who always deals in the phrases, "Exhausted Vital Power, Excitability, Asthenia, &c." makes use of them as reasons for the administration of his last remedy. It is, indeed, a difficult thing to give the due precision, clearness, and applicableness to my idea of incurable Complication and Organic Læsion. But by the application of my principles of Fever to that state, which, according to all signs hitherto known, we have considered as dangerous, it is by no means rendered more difficult than it formerly was; and the objection to my system, drawn from these difficulties, is no better founded than it is to all other systems and remedies hitherto known. The very signs which, according to all other systems, have served as signs of danger, of incurable Complications, and Organic Læsions admitting of no farther relief, will and must serve us on all other occasions. As, however, there are cases (which every other Physician as well as myself must have often experienced) in which we have a right to infer the existence of such Læsions, and to expect no relief, but which, nevertheless, have ended in perfect recovery, I consider it as most proper, when the above-mentioned

tioned signs or symptoms are present, to administer remedies containing much Oxygen, on the due restoration of which the Re-establishment of Health and the Preservation of Life depend. Where, under such circumstances, these remedies have no effect, no others would have had any; and after death we shall discover by Dissection the proofs of the supposed Organic Læsions, as I have myself always found to be the case. If no Organic Læsions exist during the Fever, it will, on the due application of the Mineral Acids according to the rules which I have given (LXXIII), take its simple course without the accession of the dangerous symptoms, such as violent Delirium, Raving and Frenzy, great Heat, unquenchable Thirst, and Convulsions, which have formerly made Fever so alarming. The disease, if conducted according to the rules of art to the highest degree of the scale of Fermentation, and not interrupted or disturbed in its course, will finally arrive at the last Product, that is, at the Critical Evacuations by which the malady is terminated, without the necessity of observing, for a long time afterwards, the severe diet and precautions formerly used, in order to avoid the apprehended Relapse. If the Acids be not duly, that is not suitably, not properly, and not sufficiently administered, the disease will not, indeed, end so soon,

and

and may even have a fatal conclusion. No one, however, can entertain an objection to the remedy on that account. The blame, if it be completely demonstrated, can fall only on the Physician, who has made so injudicious a use of the means. If, however, we wish to pass an impartial judgment, we must not forget that the operations of Nature herself may, from various unknown causes, be defective; and that Man is far too short-sighted to be able to fathom her most concealed depths. He who pretends, from Philanthropy, to ascribe the death of a Patient to the conduct of a Physician, deserves all the contempt which belongs to the Hypocrite or Villain.

LXXXII.

A third advantage of my discovery will be, that "certain diseases, which have been considered ei-"ther as quite incurable or highly dangerous, and "for which, in many cases, only empirical relief "has hitherto been procured, will be judged of on "more correct principles, and may be compelled "to take a favourable termination, provided there "be the necessary patience on the part of the "Patient and attendants." This advantage, as the connection shews, relates merely to certain Febrile Diseases, namely, the Hydrophobia, the Plague, the Yellow Fever, the Phthisis or Con-

 sumption,

sumption, and the Slow Fever; but by no means to Diseases not Febrile, to which, by a strange confusion of ideas, it has been referred by the Royal Committee in their Report. Although I have not, since my discovery, had an opportunity of treating the three first-named diseases, yet I have the less doubt as to the favourable effects of their treatment with Mineral Acids, as I have found my Theory of Fever confirmed by a similar treatment of all other Fevers, which have presented themselves to me. The principles, therefore, which hold with regard to Fever in general, must hold when applied to this or that particular Species of the Genus; to which it may be added, that many points already adopted in the treatment of the Hydrophobia, the Plague, and Yellow Fever, indicate that Recovery depends on the restoration of that proportion of Oxygen, which is necessary for the general Equilibrium. If the disease be already too far advanced, as for instance, if, in the Hydrophobia, the madness have already appeared, I expect no farther advantage from the use of Acids. But in the beginning of these complaints, they must, if properly used, do all the service which any other remedy could do. I shall certainly obtain as powerful proofs of the infallibility of my practice in the treatment of those diseases, as I have already had with regard to Phthisis and Consumption.

sumption. Many Consumptive Patients have been already saved by me, merely by the use of the Mineral Acids. In this case, the constant Fever is the natural effect of the diminution of the due reception of Oxygen, in consequence of the destruction or unfitness of the Lungs; and the regular change for the worse towards evening and at night, in this as in other Fevers, is the natural effect of the accumulation of Azot in the Atmosphere. In consequence of this observation, I have ventured to give my Patients in this disease, frequently when Death has seemed already at the Door, Sulphuric or Muriatic Acid to the quantity of an ounce, nay, of the latter, even an ounce and a half in one night; and they have found themselves relieved the following day, and, by the moderate continuance of the same remedy, have recovered as far as the nature of their Lungs would allow. My Consumptive Patients must, therefore, principally observe an Acid diet, and take, as a common drink, sixty, seventy, eighty, a hundred, or more drops of Muriatic or Sulphuric Acid several times in the day; for instance, every two hours from fifteen, twenty, or thirty, to forty drops mixed with Water or Syrup, or what is still better, with some Spirit of Wine or Brandy; by which means they will find themselves relieved, and will become vigorous and strong, and, on the whole, as healthy

as the state of their Lungs will permit. It will, however, be impossible to save all Patients of this kind by such treatment. If a considerable part of the Lungs, that Viscus so essential to Life, be destroyed, little can be done, because we are not able, by any remedies, to replace or renew the part destroyed: or if a great part of the substance of the Lungs be knotty and hardened, it will be impossible to resolve this hardness, or to render the vessels again capable of performing their functions, which consist in the excretion, and perhaps likewise in the absorption, of certain Gaseous substances. It would then be useless to administer the purest Oxygen Gas in the greatest quantity, because the vessels destroyed, or rendered unfit, can neither convey any thing into the body, nor excrete any thing. To supply the want of Oxygen as much as possible by the internal use of Acids, remains, therefore, the only sure way of prolonging the Lives of Consumptive Patients: and this is as great advantage as one could reasonably expect. Among ten cases, however, some may perhaps be found, in which the disease is not gone too far, and which, therefore, may be completely cured. It is very easy to apply what has been thus far said to those Slow Fevers, the cause of which is the Destruction or Unfitness of other organs.

LXXXIII. The

LXXXIII.

The fourth advantage of my discovery is, that "Epidemic Putrid and Nervous Fevers (as they "are called), Dysenteries, and Camp and Jail "Diseases, which so often sweep away thousands, "may, in future, be treated with great facility "and certainty, and, at the same time, in an ex-"tremely cheap and simple way." From long and varied experience we already know what great advantages have been derived from the use of Sulphuric Acid in the above-mentioned Camp and Jail Fevers, even in the small doses hitherto given. This experience was, however, more empirical than built on rational grounds, such as are mine for the administration of Muriatic and other Acids. In the former instances those Acids were used only secondarily; and the relief, or cure, was expected only from the application of remedies stiled Strengthening-stimulating, and Strengthening-antiseptic, to which were chiefly ascribed the good effects which were observed, while the efficacy of the Acids, used at the same time, was not brought to account. If the latter had been administered by themselves in greater quantities, and their operation had not been checked by the addition of remedies containing Carbon and Hydrogen, it would long ago have been found that it is to the chief Principle in Acids, that the recovery must

must be ascribed; and thousands would have been saved, who are lost from ignorance of the just point in which the subject ought to be viewed. Unacquainted with the necessary and salutary operation of Acids, persons have ceased to used them if Meteorism or Diarrhœa have appeared; and yet these symptoms are the most necessary and certain sign of a favourable issue, as the over-stimulating substances present are thereby changed, rendered inactive, and excreted. If it had been known that very large doses of Acids promote this salutary end, and at the same time means check the disagreeable consequences necessarily connected with it, recourse would not have been had to remedies, which either increase those prejudicial substances, or, at least, retain them in the body. Now, however, that the Nature of Fever, and consequently of all Camp and Jail Diseases, is better known (XXXVII.), and Acids may be given in great quantities on rational grounds, we shall be able, for the reasons above-mentioned (LXXI.), to treat all these diseases (not excepting Dysentery, as a complaint connected with Fever) with Acids alone, or, at the utmost, by the addition of an Emetic or Purgative at the beginning, more simply, easily, expeditiously, and certainly, than has hitherto been the case. It is obvious, from paragraph the seventieth, that the cure may be accelerated by the addition of

the

the Volatile Spirit of Wine or Brandy, which abounds with Oxygen. That this method is relatively very cheap, admits of no doubt. With this advantage is intimately connected

LXXXIV.

The fifth; for "by the publication of my me-"thod of proceeding, and my principles, many "Physicians are enabled to prevent even the ori-"gin and propagation of such diseases, as far as "man can do it." They will give the Soldiers, particularly during fatigue, bad weather, and unfavourable circumstances, a sort of Halleric Acid as a daily Ration; and be thus enabled to prevent the bad consequences of those unfavourable circumstances, which generally exhibit themselves in Putrid and Nervous Fevers, Dysenteries, and Camp and Jail Diseases of that nature.

LXXXV.

The sixth advantage will be, that "by means of "my method of treatment, we shall be capable of "preventing far more certainly and easily than "has hitherto been done, the fatal consequences "of the most prevalent Epidemic diseases of "Children, as Small-Pox, Measles, Scarlet Fever, "Chin-cough, &c." and

LXXXVI. On

LXXXVI.

On the whole, seventhly, we shall, " by the pro-
" pagation of my principles, diminish the hitherto
" so disproportionately great Mortality of Chil-
" dren, and yearly preserve a considerable num-
" ber of Citizens, who would otherwise be lost
" to the state." I think myself entitled to reckon these two latter advantages as most important. This great and general mortality among Children has doubtless been occasioned, among other reasons, by the false supposition of Acid in the stomach, and the consequent administration of Alkalis or Absorbents, which is thus adding, as it were, oil to the fire. Among a hundred cases, there is, as I have found by so many experiments made partly on myself, scarcely one in which Acid exists, though indicated by those signs which are considered as the most sure. There is always Rancid Acrimony, or a Gas of that nature: Or a sort of combination with Carbonic Acid takes place in the Stomach, by which the Caloric is disengaged, and the sensation of Burning is produced. Alkalis, therefore, are useful only in so far as they absorb Carbonic Acid. The complaint, however, is not radically removed by this method. Since I have left off the use of Alkalis, I have lost only three children; and of these the mothers were too tender to vex their darlings with medicines at first so

nauseous

nauseous to persons of that age. I now use the Mineral Acid, not only in the Epidemic Diseases of Children mentioned above (LXXXV.), in which, when given in large quantities, they of are incomparable value, but also in all Teeth complaints, in Sickness, supposed Acidity, Convulsions of a certain kind, Diarrhœas, Stoppages, Flatulency, Crying, Chin-cough, &c.; and always with the best consequences. The medicines must, however, of course, be always made agreeable to the taste; and with them may be combined other suitable medicines containing much Oxygen. In these cases I generally prescribe some ounces of Syrup, an equal quantity of Water, from half a drachm to two drachms of common diluted Sulphuric Acid, or, according to circumstances, of Muriatic Acid, or even concentrated Sulphuric Acid; and half a drachm, or at most a drachm, of Liquor Anodynus, or Rectified Spirit of Wine; and I order one or two table-spoonfuls to be taken every hour, or every two hours, or, in case of necessity, more frequently. If there be any pain, I add some Liquid Laudanum of Sydenham, or Tinctura Thebaica. It is obvious that Clysters, and sometimes even Emetics or Purgatives, must be given in order more quickly to restore the Equilibrium, and to remove the noxious matter, from which much stimulus to Fever would develope itself; and these auxiliary

means

means are the more necessary in such cases, in order the more quickly to render inactive the noxious substances of a fixed and gasiform nature, as the bad taste of the Acids makes it difficult to administer them in a sufficiently large quantity to Children. I know of no better remedy even for suckling and new-born children; and the curdling of milk in the stomach is by no means to be feared. It is obvious, that, according to the difference of age and symptoms, more or less Acid must be added to the medicine; and that it must be given every quarter of an hour, half hour, or hour. There will be cases in which Children lie as it were already in the agony of death, become cold, and have intermittent respiration, &c. &c. In these the Acids often give the greatest relief; particularly the Muriatic Acid, mixed with some other volatile substance containing Oxygen, as the Naphtha* Aceti, or Vitrioli, Spiritus Nitri Dulcis, Spiritus Vini, and even Opium; and we must not be afraid of continuing duly to repeat the medicine. I conceive that I have said enough to call attention to so important a point.

LXXXVII.

As the eighth advantage, I added, that " even " the treatment of Diseases not Febrile, would,

* The different Æthers. Editor.

" in

" in many respects, undergo an important, happy " reform." This point has been in a most extraordinary manner misunderstood by the Royal Committee. They have referred it to the third advantage (LXXXII.) in a manner which does not exist; and have drawn from thence conclusions, which would undoubtedly have been very prejudicial to me, if their account had been well founded. It is evident, however, that in my declaration respecting this eighth advantage, I have not spoken of the application of Acids, but, on the contrary, have meant in it to ascertain the application of remedies opposed to Oxygen. I divide all diseases into two Classes only; General and Local. General Diseases are Fevers alone; Local Diseases, those which are not Fevers. The latter may, however, pass over into the former Class; and, when this takes place, they are also, of course, Fevers. In so far as they are Febrile, the use of Acids in them is justified. As, however, they still maintain the character of Locality, and must maintain it, so must the remedies opposed to the Acids, that is all other remedies, which, in contradistinction to the Acids, form one class, be, at the same time, applicable in these diseases. I will not, however, by any means say, that in Local Diseases no Acids can be used. In many symptoms of this kind they are, in reality, indispensable. But we

must

must say nothing of this subject here. That this view, which is so different from that of the Royal Committee, and by no means leads to the supposition of an universal remedy, must be very rich in consequences, will be evident from the nature of the thing, from the survey of Organism itself, which fundamentally consists of so few and simple substances, chemically modified however, and connected in different manners, but, for that very reason, presenting such innumerable variations to the intelligent eye. Now as Disease is merely a different modification of the Living state, the efforts of the Physician must be exerted solely in investigating the nature and ground of these different modifications, and in acting according to his discoveries. This business, which must always remain highly difficult, does not belong to this place; as I treat here merely of that Class of General Diseases, Fevers, and can, therefore, touch only in passing on the treatment of Diseases not Febrile.

LXXXVIII.

No doubt can be entertained as to the ninth advantage, " that all these benefits may be ob-
" tained at very little expence, in a much shorter
" time than by the usual means; and that it will
" not be necessary to send, as hath hitherto been
" the

" the case, great sums to foreign countries for dear " foreign remedies," if we gradually accustom ourselves to treat Intermittent and Malignant Fevers without Bark, Nervous Fevers without Virginian Snake-root, Asthmatic Fevers without Seneka, &c. Let it be the great endeavour of every Physician to be Simple. If he invariably follow this principle, internal satisfaction and copious blessings will accompany him in all his steps.

APPENDIX.

APPENDIX.

AS I have reason to suppose the preceding pages to be an accurate translation of a work, which has been so much sought for in Germany, that the Translator has not been himself able to purchase a copy, I shall not attempt to reconcile any apparent contradictions in the Theory, or make on it any farther remark, than that the operations on the human oeconomy, attributed to Oxygen and Azot, appear to be totally opposite to those which are assumed by the English Chemists. Which of these opinions is just, future experience must decide. The most important point is the matter of fact; whether the Acids are really capable of producing, in all or any Febrile diseases, those beneficial effects which are promised from their use. If this shall eventually prove to be the case, and it shall appear that the practice has been derived by fair deduction from Chemical principles, we

may

may congratulate ourselves on having at length extracted some gold from the ordure of Medical Chemistry.

In the work itself, there is a great air of earnestness and ingenuousness. The author candidly acknowledges, that the use of Acids in Fevers had been established by old and long experience; but he observes, that they were employed in very small quantities, and only as auxiliaries; far from being considered as of primary and essensial consequence in the cure. To this it may be added, that the Acids which have been chiefly exhibited, have been either the Vitriolic, or, more especially, those of the Vegetable kind. The use of the Muriatic Acid has been more rare, though not wholly unknown. As long ago as the year 1773, that Acid was highly recommended by our countryman, Sir William Fordyce, to be given internally in those Fevers which were called Putrid or Malignant; and to be applied externally in the form of Liniment or Gargle to the sloughs in the throat, which often accompany such Fevers. His Liniment consisted of twenty drops of the concentrated Acid to an ounce of Honey of Roses; and his Febrifugum Antisepticum contained five drops of the Acid mixed with two ounces of a strong decoction of Peruvian Bark.* In a subsequent

* New Inquiry into the Cauſes, &c. of Putrid and Inflammatory Fevers.

publication,

publication, which appeared in the year 1790, in form of a letter to Sir John Sinclair, bart. " concerning the virtues of the Muriatic Acid," he expressly recommends that medicine as the best remedy in " all our putrid diseases of the worst " kinds;" " in petechial, camp, and jail distempers, " as well as the malignant sore throat, so fre- " quently fatal in this country;" and afterwards in the small-pox and plague. In this letter, the Author acknowledges himself indebted for the Muriatic Gargle to Sir William Duncan; and quotes a pamphlet on the external and internal use of this Acid, published in the year 1664, by Constantine Rhodocanacides, a Greek Empiric, who calls himself Chemist to King Charles the Second, and who derives his theoretical presumption of its extraordinary power from the universality and approved value of common salt. He recommends the Acid mixed with food and drink to the amount, if necessary, of one hundred drops in the twenty-four hours, as a preventive and remedy for the Plague, and as a general antiseptic; and publishes, at the same time, several " certifi- " cates of the great benefit that had been received " from it." To this source Sir William Fordyce confesses himself indebted for the first hint, respecting the internal use of the Muriatic Acid in Putrid Diseases; and he enumerates some cases of

that kind, in which he attributes the cure chiefly to that Acid.

In the form of Glysters, I do not know that the Muriatic Acid has been prescribed in England by any other person than myself. In this manner I, seventeen years ago, employed it, mixed with Nitrate of Soda, apparently with very good effects, in several cases of the Typhus, in the Pauper Charity in this City. But as the administration of the Muriatic Acid in these instances arose merely from a chemical mistake, I never pursued that practice; nor have I learned that the publication of Sir William Fordyce has induced one single Physician in this Country to trust to the internal use of the Muriatic Acid for the cure of any Febrile disease.

Even in point of theory, this remedy was considered as applicable only to diseases tending to the putrid type; while the German Professor judges it capable, when properly administered, of generally curing all kinds of Fever, if they are unattended with any violent Organic Læsion.

I cannot help particularly pointing out to the reader's attention this latter distinction, as just and highly important; having myself, from long observation, been in the habit of considering Patients in idiopathic Fevers as being in general safe, even under the use of well-known remedies, if

there

there were no symptoms which indicated considerable derangement of parts essential to life, such as the Brain, the Lungs, and the Alimentary Canal. It must, however, be acknowledged that these symptoms are not wholly to be depended on. I had, some years ago, an opportunity of observing this ambiguity in the case of a young man, a servant of the late Earl Howe. This patient had been affected with acute Rheumatism, which was followed by a Pleuritic Inflammation of the right side, attended with the usual symptoms. As this local disease subsided, the pulse became quicker, the face more flushed, and great restlessness and delirium supervened. The blood, on being cooled, still continued to exhibit the inflammatory crust. In this state, with the pulse at 136 in a minute, I ordered eight ounces of blood to be taken from the jugular vein in the evening, and sixty drops of Laudanum to be given immediately afterwards. The blood flowed freely; the patient slept well, and the next morning awoke without delirium. Some hours afterwards I felt his pulse beating only 72 in a minute, his head perfectly clear, his skin cool, and every bad symptom gone. He rose out of bed without my consent; sat up for some time; in the evening was seized with a new and violent febrile exacerbation, accompanied with delirium and subsultus tendinum,

and

and died before morning. I could not but be extremely desirous to learn the cause of this patient's death; and his noble master, ever anxious for the promotion of science, and all the best interests of humanity, readily consented to gratify my wish. All the internal parts of the body were carefully examined. There were some slight remains of inflammation on the affected side, where there was an adhesion of the Pleura, of small extent; but there was neither inflammation, congestion, or extravasation in the Brain or its membranes, nor any perceptible disease of any of the Viscera. May it not be reasonably inferred, that this man died of the inaction either of the Heart or Brain, which followed the violent excitement of the last exacerbation? There are few, however, who would not, I think, have been disposed to attribute the fatal termination to some Organic Læsion of the Brain.

This ambiguity confirms the propriety of the Author's advice to administer powerful febrifuge remedies, even though Organic Læsion should be, from the symptoms, apprehended; and it must be acknowledged, that, as such Læsions are the consequence of the general morbid movements which constitute the Fever, and as they may occur during any part of its course, the discovery of any new and singularly efficacious means, by which those

morbid

morbid movements may be checked so as to prevent the consequent Organic Læsions, must be intitled to the best thanks of mankind.

There is no doubt that the power of the Muriatic Acid over these and other diseases, will soon be ascertained by experience the only geguine test of truth. Certain cases are subjoined, in which I have myself employed this remedy; and I shall still continue to try it as circumstances shall direct. The result of these experiments I shall probably make public; and I am ready to receive communications on this subject from those medical men who may be disposed to walk in the same path. But I must request, that whoever shall favour me in this respect, will be extremely particular in the narration of symptoms, and more especially will communicate the result of the unsuccessful as well as successful cases. I have neither time to make books of "shreds and patches," nor inclination to lead men astray by an ignis fatuus of my own imagination; and there is nothing which from my soul I more abhor, as repugnant to the principles of sound philosophy, and destructive of the reputation of the medical profession, and of the general happiness of mankind, than the present prevailing mode of collecting, and exhibiting to the public, select and flattering

tering cases of disease. I will not here enlarge on this subject; and, unhappily, the instances are too common to require particular citation.

CASES.

Miss C. H. aged 12, who was said to have had no communication with any person labouring under any description of fever, was affected on the 26th of December, 1800, with heaviness in the head, which the next day increased to violent pain, and was accompanied with various febrile symptoms. She had no soreness of the throat, but on the 2d or 3d of January began to be delirious. About this time a rash of a dull red colour, scarcely raised above the skin, appeared, principally about her breast, and the trunk of her body; and she began to take the usual tonic medicines.

I first saw her on the 6th, when she was at times delirious, with a quick and full pulse, great bounding of the carotid arteries, red eyes, flushed face, burning skin, laborious respiration, and incessant jactation. In this state I ordered four leeches to be applied to her temples, an effervescing draught to be given every four hours, and an opening

opening draught the next morning. It was desired that cool air and drink should be liberally administered, and that her face and breast should be washed with cold water.

JAN. 7.

The directions had been punctually followed. The leeches had bled well; the pulse continued much as before; but in other respects the patient appeared worse; the pulsation of the carotids being still greater than yesterday, and the affection of the head considerably increased. In this state, in which it appeared to me highly probable that, under the common method of treatment, death would soon ensue, I thought myself justifiable in trying that so strongly recommended by the German Professor. This sense of the impending danger made me, however, at that period, less solicitous to mark in writing the precise state of the symptoms than I now wish I had done.

The Muriatic Acid was, therefore, directed in the following way:

℞ Aquæ fontanæ ℥vii.
Syrupi Rubi Idæi ℥i.
Acidi Muriatici fortissimi ʒi. Sumat cochlearia quatuor ampla secundâ quâque horâ.

At the same time it was ordered that a glyster, with fifty drops of Muriatic Acid, diluted with half a pint

a pint of water-gruel, should be injected at five in the afternoon, and repeated at eight the next morning. Blisters were also applied to the thighs.

On the evening of the 8th, and the morning of of the 9th, the glysters were repeated, and in the course of about forty-four hours, she had taken nearly six drachms of Muriatic Acid. The remedies were directed to be continued.

JAN. 10. 5 P. M.

Pulse 120, and soft. Since last report she has taken two drachms of the Muriatic Acid; and has had three small loose motions, of a tolerably healthy appearance. Her night has been better than before; but she was then, and still is, at times delirious. Has had, for two days, some soreness of the throat, but swallows without difficulty. For some days she has coughed very hard, without expectoration, as if the membrane lining the trachea was somewhat inflamed. The rash is nearly gone. Tongue tolerably clean and moist. She appears rather deaf.

The Acid seeming to be rather weak, I ordered the quantity in each mixture to be doubled, and the glysters to be repeated as before.

JAN. 11.

Pulse 120, and full. Has taken somewhat more than half an ounce of the Acid; and has had two stools.

stools. Tongue dry. Flushing of the face gone, and she is now much less delirious, though considerably so during the night. Eruption gone.

Pergat in usu Misturæ et Gargarismatis.

JAN. 12. 8 P. M.

Pulse 96, and soft. Has taken half an ounce of the Acid, and had three motions. Was restless and delirious during the night.

Pergat.

JAN. 13. 5 P. M.

Pulse 92, and soft. Has taken three drachms and a half of the Acid; and has had two motions. Has suffered very little delirium, but is still rather deaf. Her skin is cool, and her cough better; her tongue clean, and of a proper colour. She has to-day begun to ask for food. Urine, made at seven o'clock this morning, has a lateritious sediment resting on mucilage, and is clear above.

Pergat.

JAN. 14. 9 P. M.

Pulse 92, and soft. Has taken three drachms and a half of the Acid, and has had one motion. Has hitherto taken her medicine well, but is now very averse to it. About five yesterday afternoon sweated a good deal about the head. Slept tolerably

rably well. Tongue clean. Complains of headach, and great pain of her legs, arms, and back, but is quite free from delirium.

℞ Aquæ fontanæ ℥vii.
Syrupi Limonis
Mucilaginis Arabici Gummi āā ℥ſs.
Acidi Muriatici ℥ſs. Sumat cochlearia quatuor ampla tertiâ quâque horâ.

JAN. 15. 8¼ P. M.

Pulse 88, and soft. Has taken about two drachms and a half of the Acid, and has had one motion, previously to which she had a good deal of pain in her bowels. Slept well till two in the morning; and has not been delirious. Skin cool. Tongue in the natural state. Urine of the natural colour, with a slight mucilaginous cloud. Has no relish for food.

Pergat in usu Misturæ, additâ Acidi Muriatici sedrachmâ.

JAN. 16. 5¼ P. M.

Pulse 72, and soft. Has taken about three drachms of the Acid. Had one large motion yesterday, and another this morning. Appetite good.

Through the whole of her illness, this patient was constantly changed and washed, her room was kept cool, and well ventilated, and she took fluid vegetable food and cold diluting drink.

On

On the first week of December last, the Nurse-maid of the Rev. W. M. aged 18, was seized with the Scarlatina, and died on the seventh day. On the 10th of the same month, four of the children were attacked with the usual symptoms of the same disease in a slight degree. Another child, Master W. W. M. aged $7\frac{1}{2}$, lived with his uncle at some miles distance, and had had no sort of communication with any one in his father's house till the 28th of December, when one of his sisters visited her uncle, and slept with this brother till the 4th of January. They came to Bath with their parents on the 2d of January, and on the 4th at midnight, Master M. having had no previous indisposition, was seized with sickness and bilious vomiting. On the morning of the 5th he was still affected with sickness, and complained of soreness of the throat. His skin was hot, and his pulse quick and hard. By the direction of Mr. Bowen, apothecary, he took an emetic, and some opening physic; both of which operated well.

On the 6th, two small ulcers appeared in the throat, and he suffered much in the act of swallowing. His pulse was 147 in a minute; his skin dry, hot, and covered with a red efflorescence.

On the 7th, the difficulty of swallowing was greatly increased; the skin burning hot, and all other symptoms much as before.

On

On the 8th, all the symptoms were aggravated.

On the afternoon of the 9th, he became delirious. Previously to this time, effervescing saline draughts and cool drink had been very assiduously given, the bowels had been kept open, and acids and astringent gargles had been constantly employed. A blister was now applied between the scapulæ. At midnight I saw him for the first time. He was then extremely delirious; his skin very hot, and his pulse 132 in a minute, full and hard. He was ordered to take two table spoonfuls of the following mixture every three hours.

℞ Aquæ fontanæ ℥v.
Syrupi Rubi Idæi ℥i.
Acidi Muriatici ʒi.

At the same time he was directed to gargle his throat frequently with a mixture, consisting of two drachms of the Muriatic Acid, one ounce of honey of roses, and seven ounces of water.

JAN. 10. 10 A. M.

Pulse 120, and soft. He has taken half of the mixture, and used one-third of the gargle. Has now little delirium, but his sleep is unquiet, and his breathing very laborious. His throat is clean, but his mouth and lips are red and excoriated. Urine of the natural appearance. No stool. The mixture gives him pain in swallowing, and seems rather too sharp.

℞ Aquæ

℞ Aquæ fontanæ ℥iv.
Syrupi Rubi Idæi ℥i.
Mucilaginis Arabici Gummi ℥ſs.
Syrupi simplicis ʒiii.
Acidi Muriatici guttas LX. Sumat cochlearia duo ampla tertiâ quâque horâ.

Pergat in usu Gargarismatis.

℞ Decocti Farinæ Avenaceæ ℔i.
Salis Marini ℥ſs.
Acidi Muriatici ʒi. Ft. Enema, horâ sextâ pomeridianâ infundendum.

9 P. M.

Pulse 116, and soft. He has had two motions of a natural appearance since the glyster, and has taken about one-third of his Mixture. He is now sleeping, though unquietly. He coughs rather hard at times. His skin is moist and moderately cool.

Pergat in usu Misturæ et Gargarismatis.

JAN. 11. 11½ A. M.

Pulse 108, and soft. Half the last ordered Mixture has been given, but mixed with a little water, it being still too sharp. The gargle has been regularly used. He has had scarcely any delirium, and slept at different times in the night pretty quietly. He has no flushing of the face.

Skin

Skin cool. Tongue less red. No motion since last report. Urine rather high coloured.

Repetatur Enema horâ sextâ p. m.

Pergat in usu Misturæ et Gargarismatis.

8. P. M.

Pulse 100, and soft. Three ounces and a half of the Mixture have been taken, and the gargle has been used thrice. The glyster was given at half past six, and has produced one good stool; since which he has had another evacuation, consisting of lumps of hardened mucus. He is now sleeping, and breathes something better than before. Skin cool and moist.

Cras, primo manè, sumat Haustum aperientem ex Infuso Sennæ, &c.

Pergat in usu cœterorum medicamentorum.

JAN. 12. 2½ P. M.

Pulse 96, and soft. Nearly half the Muriatic mixture has been taken, though with the greatest possible reluctance; but the patient would not take the opening draught till eleven o'clock. The gargle has been used thrice. He has slept tolerably well without delirium. Skin cool. Urine has a farinaceous sediment.

Infundatur Enema è

Salis Marini ℥ss.

Decocti pro Enemate ℔i.

Pergat in usu Misturæ et Gargarismatis.

JAN. 13. $3\frac{1}{2}$ P. M.

Pulse 96, and soft. Six ounces and a half of the Muriatic mixture have been taken, and the gargle used six times. He had a small motion before the administration of the glyster, which was, nevertheless, given, and returned in a quarter of an hour with a loose stool. Has slept soundly without delirium, and breathed well. Urine as yesterday. Skin cool. Has asked for bread and butter, but has not been able to chew it, on account of the general excoriation of the fauces and mouth. Has some swelling of the left parotid gland.

JAN. 14. $4\frac{1}{2}$ P. M.

Pulse 100, and rather full. During the last twenty-four hours he has taken eleven ounces of the Muriatic mixture, and used the gargle freely. He continues very hoarse, though without coughing; and his skin is rather hot. Has had no motion. Urine as last reported. Swelled parotid much as before as to size, but more painful. Wishes to get up.

From this time his appetite gradually mended. A desquamation of the skin now took place. The hoarseness continued, with cough and expectoration. The bowels were kept open, and the mixture continued with a slight variation as to form.

On

On the 16th, the pulse was 86, and soft, and there was a considerable moisture on his extremities. The urine was of a natural colour, and had a slight mucilaginous cloud. In every other respect he was tolerably well, except with regard to the parotid, which increased in size, tenderness, and redness, and on the 20th broke and discharged a large quantity of purulent matter.

When I first saw Master M. he had been taking occasionally a small quantity of weak chicken broth. As no injury appeared to follow its use, I allowed it to be repeated through his whole illness. The quantity was, however, very small; and for many days scarcely any other nourishment was swallowed.

Besides these cases of idiopathic Fever, I have tried the Muriatic Acid in one example of Phthisis Pulmonalis in an advanced stage, in the quantity of about a drachm and a half daily. It appeared to produce no particular effect either in this instance, or, given in about a similar dose, in a case of Pulmonic Inflammation, accompanied with spitting of blood, in an old person long accustomed to congestion in the lungs, who was soon afterwards essentially relieved by squills and opium.

I am now administering the same acid in the following case. A lady about forty years of age, of a thin habit of body, has been suffering for seven

years

years under Epileptic fits, which, during several of the last years, have attacked her on an average once in about eight or nine days. In the intermediate time she is more or less affected with many of those symptoms which are usually denominated Nervous, such as, occasional convulsive twitchings about the muscles of the face and tongue, palpitation of the heart, pain and giddiness of the head, and great susceptibility of impressions, so as to be incapable of any conversation during a considerable part of the day The tongue is slightly white, more especially at night. The urine is, for the most part, pale; the bowels and catamenia regular; the appetite moderately good; the feet usually cold; but the forehead often hot. The pulse in the forenoon has generally been about 86 in a minute, soft, and rather small; but in the evening it has usually increased to 98, and more frequently to 108, or even 116. Nine out of ten of the fits have been in the evening. After a fit, for about two days, the symptoms abovementioned are alleviated; but then begin gradually to increase till another fit arrives. During the interval, there have always been from two to four or five attacks of a slighter kind, not amounting to insensibility or convulsions, but apparently threatening them, and which the patient feels, but cannot well describe; and sometimes a direct

hysteric paroxysm takes place; which, as well as each threatening, seems to produce some relief of the general irritability, though for a shorter time, and in a less degree, than the Epileptic fits. Once in the course of last spring, there was an interval between the Epileptic fits of twenty days; but then there were several intervening attacks of the slighter kind, and one direct hysterical paroxysm; and the patient, through the whole interval, was much affected with the convulsive twitchings, and other uncomfortable symptoms. It is worthy of remark, that in these fits there is, at first, a sudden attack of violent convulsions, in which the patient intirely loses all perception. Then follows, for a very short period of time, perhaps one or two minutes, a state of quiescence and perfect stupor; which is immediately succeeded by another fit of violent convulsions. This had been the invariable mode of attack, in more than one hundred successive instances, till last spring, when I happened to be present at the beginning of a paroxysm. As soon as the state of first quiescence took place, while the patient was totally void of sensibility, I strongly compressed both carotid arteries; in consequence of which, as I had ventured to predict to the attendants, no second paroxysm of convulsions ensued. Since that period, the patient has had between

thirty

thirty and forty fits, and all with the second attack of convulsions. In this unhappy case, all the means, which theory or experience could suggest, had been tried without producing any evident relief of the more important circumstances. It is true that her nights, which were variable as to quietness, were rendered more constantly good by the habitual use of pills, each dose of which contained four grains and a half of extract of the white poppy. But this remedy had no sensible effect either on the pulse or general symptoms.

After what I have on various occasions published, it may be scarcely necessary for me to say here, that I have long considered the greater number of Nervous complaints, and, among others, the Epilepsy, as depending on a certain irritation of the brain, of which the common cause is the impulse or congestion of blood in its vessels. I could have little doubt that this was the case in the instance before us, when I was able to remark, that the fits occurred most when the tongue was most dry, the face most turgid, and the action of the heart greatest; and that, as had happened in many similar disorders, I had prevented the convulsions by compressing the carotid arteries. Under these circumstances, according to my principles, the cure or relief of this patient was to be sought among those remedies, which are usually called

Sedative,

Sedative, and of which the first and obvious operation is to diminish the action of the Heart. The operation of the Muriatic Acid being, according to the Author of the present work, of this kind, I thought myself justifiable in trying it in a case which had so long resisted all the usual means. Accordingly, on the 9th of January 1801, I began with giving during the day, at three doses, one drachm of the Acid, mixed with one ounce of syrup of raspberries, and three ounces of water. This was continued till the 18th; when, on account of the soreness of the mouth, it was changed to sixty drops of the Acid diluted with six ounces of the other liquids. On the 23d, the dose of the Acid was increased to seventy drops; on the 25th, to eighty; on the 31st, to a hundred; on Feb. the 3d, to a hundred and ten. The soreness of the mouth being now again troublesome, and some inconvenience experienced in the throat and stomach, the quantity of the Acid was, on the 5th instant, reduced to a hundred drops, and the liquid increased to half-a-pint. On the 7th, the Acid was increased to a hundred and twenty drops daily; on the 9th to a hundred and thirty, and on the 14th, to a hundred and forty. During this period the bowels were in general more costive than usual; and about the 17th, the patient complained that the medicine made her sick, and purged her; and

on

on the morning of the 18th, she vomited up her first dose. The afternoon dose, however, settled very well on her stomach. The periods of the six last Epileptic fits were as follow: 1800, December 24th; 1801, January 8th, 15th; Feb. 6th, 13th, 18th. The interval from the 15th of January to the 6th of February was the longest which had occurred for several years; the whole interval being accompanied with a remarkable exemption from suffering, and a total freedom from Hysteria, or any of the slighter attacks or threatenings, till the night before the fit, when somewhat of the latter kind occurred. The fit was much as usual. From the 6th to the 13th, there was neither Hysteria nor any threatening; and much calmneſs. On the 18th, in the morning, a slight threatening. As to other circumstances, her nights were on the whole good; her tongue less white; her urine less copious, and of a more natural colour; any mental attention, as in reading, infinitely less fatiguing; and her pulse reduced in the morning to a variation of from 84 to 72, and in the evening to that of from 90 to 80.

Whatever may be the future event of the administration of the Muriatic Acid in this case, a most obvious amendment, which has never attended the use of any other remedy, having very speedily followed its exhibition, it cannot be denied the merit

merit of having hitherto produced very remarkable effects. Neither was there in this patient, to the best of my observation, any impression of extraordinary confidence, or any other mental affection, which could in any degree have contributed to the salutary operation of the Acid.

On the subject of this medicine I have only farther to add, that it produces soreness of the throat and mouth, at least in an equal degree with the Nitric Acid; and that this effect sometimes occurs, though the mixture is swallowed through a glass tube. The proportion of 140 drops to eight ounces of the vehicle is certainly a great deal too much; and I wonder how such a mixture could ever have been swallowed by the last-mentioned patient, who, though requested to add water as she pleased, for some time preferred taking it in this state to the necessity of swallowing a larger bulk of fluid. Perhaps the soreness may be prevented by great dilution; or, in chronic cases, by well washing the mouth after each dose with a weak solution of potash in water.

CALEB HILLIER PARRY.

Bath, Feb. 20, 1801.

FINIS.

REMARKS AND CORRECTIONS.

Page 9, line 24, for ‘ the atmospheric mixture of air,”
r. *the mixture constituting atmospheric air*.

19, l. 1, insert the *comma* after *respiration*, instead of after ‘ only.’

37, l. 15, for ‘ offensive,’ r. *copious*.

44, It should seem that by the words ‘ free’ and ‘ disengaged oxygen,’ the Author means *sensible*, in con-tradistinction to ‘ latent;’ in which state it exists in the metallic oxyds.

51, l. laſt, for ‘ in one shop more, in another less,’
r. *in one shop they are more, in another less*.

Cruttwell, Printer, Bath.