A practical treatise on derangements of the liver, digestive organs, and nervous system. To which is added an essay on the prolongation of life, and conservation of health. Adapted to general perusal / [James Johnson].

A

PRACTICAL TREATISE

ON

DERANGEMENTS

OF THE

LIVER, DIGESTIVE ORGANS,

AND

Nervous System.

TO WHICH IS ADDED

AN

ESSAY

ON THE

PROLONGATION OF LIFE,

AND

CONSERVATION OF HEALTH.

(ADAPTED TO GENERAL PERUSAL)

By JAMES JOHNSON, Esq.

Surgeon to His Royal Highness the Duke of Clarence's Household; Author of the "Influence of Tropical Climates on European Constitutions," and Editor of the "Medico-Chirurgical Journal, or Quarterly Register of Medical and Surgical Science."

(SECOND EDITION IMPROVED)

Felix qui potuit rerum cognoscere causas.

——How best the fickle fabric to support
Of Mortal man; in healthful body how
A healthful mind the longest to maintain.

LONDON:

PRINTED FOR THE AUTHOR, No. 1, ALBANY, PICCADILLY;

AND SOLD BY T. AND G. UNDERWOOD, 32, FLEET STREET; HIGHLY AND SON, FLEET STREET; CALLOW, CROWN COURT, SOHO; AND ALL OTHER BOOKSELLERS, IF PREVIOUSLY ORDERED.

1818.

Printed by W. Woodward, Portsea, for the Author,
No. 1, Albany, Piccadilly, London.

To his Royal Highness

PRINCE WILLIAM HENRY,

DUKE OF CLARENCE,

&c. &c. &c.

May it please your Royal Highness,

Ever since I first had the honour of serving under your Royal Highness's immediate command, and of attending your Royal Highness professionally through a severe illness, I was impressed with a high sense of the noble and generous disposition which your Royal Highness evinced on all occasions.

The uniform kindness and condescension which, since that period, I have experienced at your Royal Highness's hands, have made a deep and indelible impression on my heart, while the flattering manner in which your Royal Highness has sanctioned this address, enhances all former obligations, and adds to the debt of gratitude already so largely incurred by your Royal Highness's ever

Devoted, and grateful

Humble Servant,

JAMES JOHNSON.

London,
Sept. 10, 1818.

TO THE PUBLIC.

THE following pages were not committed to the press till after full twenty years' observation and experience in almost every variety of Climate which the surface of this Globe presents—

——— A gadibus usque
Auroram et Gangem ———

The Horatian precept then, "nonum prematur in Annum," having been more than twice observed; and the sanction of the Profession having been unequivocally manifested by the most flattering testimonies of spontaneous approbation, and the rapid exhaustion of a large impression, of this and his work on Tropical Climates, the Author comes before the public, in a second Edition, with much gratitude for the past, and with some confidence in the future.

Having detached the article "GOUT," for separate publication, the Author has been enabled to remodel and greatly enrich this Edition by a vast body of original and important matter. Three entire sections have been added, on Asthma, Epilepsy,

and passive Exercise; and it is hoped that the book may now stand a classic Essay on the subject it embraces.

That division of the work including "*Practical observations on those derangements of the Liver, Digestive Organs, Heart, and Nervous System, resulting from climatorial influence, irregularity of living, mental anxiety, or sedentary habits,*" has been considerably improved, and now forms the basis or text of a comprehensive course of lectures on those important subjects, which the Author will shortly deliver in this Metropolis.

So wide a range of observation and personal sufferings (whence is derived the practical information contained in this volume, and in the proposed lectures,) never probably fell to the lot of an individual before—

> "Alternate change of Climate had he known,
> And felt the fierce extremes of either zone;
> Where polar skies congeal the eternal snow,
> Or equinoctial suns for ever glow."

The author can conscientiously aver that, in all his wanderings—in every vicissitude of climate, or circumstance—of adversity or prosperity—in the tumult of war, or in the bosom of peace, he never, for a moment, ceased to cultivate, with enthusiastic ardour, the principles and the practice of medical science—still cherishing the fond hope (often indeed

when reason might despair) that a period would yet arrive when, on his native shores, he might live to disseminate among the rising generation of the profession (perhaps with some advantage to society at large) the fruits of his long and hard-earned experience—

> Around his fire an evening group to draw,
> And teach them all he felt, and all he saw.

"*Hoc erat in votis*"— and these his humble anticipations will, he hopes, at last be realized. For the rest, the Author throws himself on the patronage of that Public whose health he has studied at the expence of his own—on the indulgence of that Profession whose dignity he has endeavoured to uphold—on the liberality of that science whose progress he has laboured to advance.

But if, in his journey through the checkered scenes of life, he has been taught humility in the school of adversity, and wisdom in affliction, he has, at the same time, learnt an important secret—the power and extent of—*one's own resources*, when exerted with energy, and directed with spirit through the dense cloud of difficulties, prejudices, and artificial barriers which weigh down the springs, and check the progress of human intellect, both in the study and practice of the healing art.

On *these* resources he has hitherto relied, and shall continue to rely, whatever may ensue. If they

have not proved passports to wealth or rank, they have led to better things—independence of mind—and the consciousness of having contributed something to the advancement of medical science, and the mitigation of human sufferings.

JAMES JOHNSON.

London,
No. 1. *Albany, Piccadilly*,
September 10, 1818.

TABLE OF CONTENTS.

PART I.

Nature, Causes, and Treatment of Diseases.

PART II.

THE

INFLUENCE OF THE ATMOSPHERE

MORE ESPECIALLY THE

Atmosphere of the British Isles,

ON THE

HEALTH AND FUNCTIONS

OF THE HUMAN FRAME;

&c. &c. &c.

PART I.

NATURE AND TREATMENT OF DISEASES.

THE ATMOSPHERE which surrounds the globe we inhabit, for many miles in height, is the most heterogeneous fluid in nature. Every species of substance, whether animal, vegetable, or mineral, dispersed over the surface of the earth, and which is capable of being dissolved by water, consumed by fire, or volatilized by heat, is diffused in endless variety and proportion through the different strata of air. When therefore we consider that, at every inspiration, this fluid is applied to an expanded tissue of the most delicate blood-vessels in the lungs,* we cannot but conclude that its ever varying properties, temperature, density, and impregnations, must have a predominant influence on the health of the human race.

The omniscient Creator, however, has not left us exposed to such a train of incidents without enduing the constitution of man with a pliancy, and power of resistance, which render the majority of atmospherical impressions comparatively innocuous. Hence from the Æronaut, who soars above the clouds, to the miner in the bowels of the earth—from the Alpine peasant to the submarine Hollander—from the sirocco-breathing African to the half-frozen Laplander, we find the different tribes of mankind inhaling every possible modification of atmosphere, with a wonderful, though not an entire similarity of result!—By habit, the most potent poison may be taken in doses that otherwise would

* Keill estimates the internal surface of the lungs at 21,906 square inches.

destroy life at once: so it is to *sudden* changes in the temperature, and occasional deleterious impregnations in the composition of the atmosphere, that nine-tenths of its injurious effects on the human constitution, are to be attributed. It is true that the degrees of rarity and density have considerable effect on the generality of constitutions, and that drought and moisture are still more important circumstances; but these may be fairly merged in one head.

Sect. I.—ATMOSPHERICAL VICISSITUDES.

THE sudden transitions from heat to cold, and *vice versa*; which we so frequently experience in this uncertain climate, though doubtless occasioned, principally, by the absence or presence, or rather the variations of solar heat, and electrical changes in the atmosphere, have not been satisfactorily accounted for by natural philosophers. It is our business, however, to trace their operations on the human constitution, and point out the most practicable means of obviating their effects.

The mean temperature of England being about 52 degrees of Fahrenheit, it is reasonable to suppose that when the mercury rises to above 70 in summer, or sinks below 30 in winter, the functions of those organs which are more immediately exposed to atmospherical impressions, must be considerably influenced. Observation confirms this reasoning. In summer we find the functions of the skin, or the process of perspiration conspicuously increased, and the urinary secretion diminished.—In winter it is just the reverse; the functions of the skin are then confined, and a vicarious augmentation of urine keeps up the equilibrium of the fluids.

The Lungs, which are ever in immediate contact with atmospheric air, experience the most unequivocal impressions from the change of the seasons. In summer, when the air is mild and warm, the skin in a perspirable state, and the fluids determined to the surface of the body, the lungs are free, and the chest expansive. In winter and spring the fluids are determined from the surface of the body towards the internal organs, and then the lungs become oppressed (particularly in delicate people) and the extensive catalogue of pulmonic Complaints attains its Zenith.

These, however, are only the first links in the chain of cause and effect. With the surface of the body some of the most considerable interior organs sympathize, particu-

larly the lungs, the alimentary canal, and the liver. The sympathy between the skin and this last-mentioned organ (which performs so important an office in the animal economy) or in other words, between the functions of perspiration and biliary secretion, has not been noticed, as far as I know, by any author, till I traced it in my work on the "Influence of Tropical Climates on European Constitutions;" though I trust that it will not be overlooked by future observers.

But the effects thus produced by the rotation of the seasons would occasion little inconvenience, were they regularly progressive, as the constitution adapts itself to the gradual revolution. It is the sudden *diurnal* rather than the slow *annual* vicissitude that induces such disturbance in the movements of the living machine, and renders the climate of England so disagreeable to foreigners, and deleterious to health.

By a wonderful innate power, implanted by the hand of our Creator, the human frame can preserve its mean temperature, (about 98° of Fahrenheit,) although that of the external air may range from Zero to 150. But rapid transitions, as I have before observed, derange the functions of the body to a great extent. Another point to be observed is, that the operation of heat or cold, predisposes the human frame to be more easily affected by the opposite state.—Thus a cold winter succeeding a hot autumn, or a hot summer succeeding a cold spring, will render the usual diseases of the season infinitely more severe; and when, in addition to these, we have rapid transitions within the twenty-four, or indeed within a few hours, then the effects will be conspicuous enough.

To take a nearer view of this important subject. The heat of the blood is generally far above the highest range of the thermometer in this country; but when in summer the mercury rises to 70 or 80 degrees Fahr. it is evident that the heat perpetually generated in the system [supposed to be in the lungs] cannot be so rapidly abstracted from the surface of the body by the surrounding air, as when the temperature of that air is low. The sluices of the skin, however, being opened, the superabundant heat is carried off by the process of perspiration, and the temperature of the body is maintained at its usual standard. But in proportion as the range of the mercury is above the mean level [52°] and also in proportion to the time it continues there,

so will the functions of the skin be preternaturally increased; and, when a transition to cold takes place, the exhalents on the surface are the more easily struck torpid, so as to fail in performing the important office in the animal economy, for which they were designed. On the other hand, when from exposure to cold, the vessels of the skin are rendered torpid, quiescent, or collapsed, a sudden application of heat excites them, on the principle of accumulated susceptibility, to inordinate action, or at least dilatation, which will be in all degrees, even to the destruction of organisation, as is exemplified in frost-bitten fingers incautiously applied to the fire.

These effects, especially those arising in consequence of transitions from heat to cold, will be greatly increased by the following circumstances. First, by the presence of *humidity* in the air. The human frame, and particularly the English constitution can sustain considerable atmospherical vicissitudes with a great degree of impunity, when the air is dry, clear, and elastic. But if these changes are accompanied by humidity or rain, every valetudinary, and many in health are sure to feel the effects. The reason appears to be this;—that moisture is a forcible conductor, and consequently at the moment of transition, the animal heat is most rapidly abstracted by such a medium, and all the injurious effects proportionally increased; as is exemplified every day when people catch colds and other complaints from not changing their clothes when wet with rain.

The second circumstance is *exhaustion or fatigue*, which, by rendering the circulation languid over the surface of the body, predisposes to the impressions of cold, which then more readily suppresses the perspiratory process, and disturbs the functions of the internal organs.

The third circumstance is *nocturnal exposure*. It would indeed appear that the two preceding circumstances are here combined; for not only is the air more humid in the night from the condensation and fall of dews or vapours, as well as the absence of the solar beams, but a universal lassitude and torpor seem then to pervade the animal and vegetable creation; so that at this period atmospherical impressions are doubly injurious.

Subsect. 1.—*Cutaneo-Pulmonic Sympathy.* Let us now trace more minutely the chain of associations whereby these external impressions of the atmosphere are connected with derangement of the most important functions

in the animal economy. We have shewn that their first effects are on the skin and lungs; but were the mischief limited to a mere suppression of perspiration it would be comparatively trifling, for in such cases, a vicarious discharge of urine, as we before observed, makes up for the deficiency. But in valetudinary, and where the transitions are violent, in the firmest constitutions, a morbid effect is extended by *sympathy* to the interior organs. In what manner this sympathetic association takes place, we are unable to explain; but the fact is certain, and therefore we shall not waste time in exploring the rationale. In this climate, one of the best marked sympathies is that between the skin and the lungs, which is familiarly exemplified by the cold bath.—On immersing the body in water many degrees below the temperature of the skin, the vessels on the surface are struck torpid, and the blood is determined to the interior. At this moment, a sympathetic torpor takes place in the capillary vessels of the lungs, so that the blood is with difficulty transmitted through them, occasioning that accumulation, and dyspnœa or panting for breath, which we observe in all, but more particularly in delicate people at the instant of immersion.

But here reaction soon takes place—the balance of the circulation is restored—the functions of the skin are renewed with increased activity (on the principle of accumulated excitability) and this temporary oscillation of the vital fluid is succeeded by an exhilaration of spirits and renovated energy. On the other hand, if, previously to immersion, there has been exercise to produce fatigue; or excess of perspiration by atmospherical heat, to weaken the extreme vessels on the surface, then the torpor of the vessels of the skin cannot be properly overcome by reaction—the balance of the circulation is not completely restored, and the lungs or some internal organ is injured, with more or less of fever, according to the state of the constitution, and the force of the operating causes.

Here, then, we have a true picture of the effects perpetually produced by sudden atmospherical transitions in this most changeable climate. The consent of parts between the skin and lungs, which we may denominate the "CUTANEO-PULMONIC SYMPATHY," explains the origin of the grand class of climatorial diseases in this country, on the same principle that the "*cutaneo-hepatic* sympathy" is applicable to the diseases of tropical regions, particularly the climate of India. For as in the torrid zone the biliary

organ is weakened by excessive secretion of bile, the consequence of a high range of atmospherical heat, and of course the *liver* predisposed to disease; so in cold and variable climates like this, the *lungs* are the organs which bear the onus of disease, as evinced by the prodigious havoc which pulmonary consumption annually makes among the inhabitants of Great Britain. For these atmospherical transitions, by occasioning repeated determinations to the respiratory organs, excite scrophulous tubercles there into a state of inflammation, and finally suppuration or confirmed phthisis.

And as in the fevers of India, where the heat is excessive, the liver has been found almost invariably affected; so in this country, where cold and moisture prevail, a greater or lesser degree of pulmonic inflammation or congestion accompanies almost every febrile attack.

This principle [Cutaneo-pulmonic Sympathy] explains the enormous waste of life occasioned by Aerial vicissitudes operating on the lungs of delicate females through the medium of the skin, in consequence of the lightness of their dress, and their frequent exposure to the chilling damps of night, after the perspiratory vessels have been over-excited in crowded rooms, or fatigue has been induced by the seductive exertions of the dance.

Subsect. 2.—Cutaneo-gastric Sympathy. The next association, or consent of parts, between the exterior and interior, is that subsisting between the skin and stomach; which, in uniformity with the former, we may designate the CUTANEO-GASTRIC Sympathy. This has long been observed and acknowledged by physicians; but its important influence on health has not been sufficiently attended to by practitioners. One of the most familiar and frequent instances illustrative of this consent, is, where cold or wet is applied to the *feet*, exciting pain or indigestion in the *stomach*; an occurrence which almost every individual, whether valetudinary or not, must have personally experienced. Now when we consider the influence which the state of the stomach [the primary organ of digestion sympathising extensively with the whole nervous system] must have on the health; and when we contemplate the frequency of the abovementioned occurrence in a climate for ever varying from heat to cold—from drought to moisture, we cannot but conclude that this contributes materially to swell the long catalogue of Stomach Complaints.

In this, as in the former instance, delicate females, with a languid circulation, light dress, and thin shoes, become the most common sufferers; and hence, although they are infinitely more temperate in food and drink than the other sex; yet are they considerably more subject to the whole tribe of dyspeptic complaints, particularly heart-burn, flatulence, pain in the stomach, and want of appetite.

Subsect. 3.—*Cutaneo-intestinal Sympathy.* The third medium of Influence between the surface of the body and the viscera, is intimately combined with, and seems a continuation of the preceding. It may be denominated the CUTANEO-INTESTINAL Sympathy, and is generally evinced in the same manner as the Cutaneo-gastric, when cold or wet is applied to the lower extremities. But the intestinal canal sympathises readily with every part of the skin, and the most common origin of bowel complaints is checked perspiration, as all valetudinaries can affirm, especially those whose digestive organs have been weakened by residence in hot climates, where fluxes are of frequent occurrence.

Subsect. 4.—*Cutaneo-renal Sympathy.* The fourth, or CUTANEO-RENAL Sympathy has already been glanced at; and occurs in health, where it appears as a *vicarious* increase of urine when cold weather, or the cold bath contracts the pores of the skin, and diminishes perspiration. It is, however, the medium of disease also; for frequent determinations of this kind to the urinary organs, where there are any calculous or nephritic affections, considerably increase irritation, and induce inflammatory tendencies in the bladder and kidneys.

Subsect. 5.—*Cutaneo-hepatic Sympathy.* The fifth and last, though not least, is the CUTANEO-HEPATIC Sympathy, which I have traced minutely in my Essay on Tropical Climates, as elucidating more clearly the influence of a high range of atmospherical heat on the European Constitution, and shewing in what manner the biliary system is, under such circumstances, so peculiarly liable to derangement.

It may at first sight, appear strange, that if a sympathy existed between the skin and liver, it should have been overlooked, while a consent between the surface and the lungs, the stomach, the intestines, and kidneys, was observed and acknowledged by the most eminent Physiologists. And yet it appears equally strange, that such an

organ as that for the secretion of bile—occupying so large a space, and performing so important an office in the animal economy, should be almost the only viscus exempted from a sympathetic communication with the surface.

Several causes have conspired to prevent the discovery of this sympathy. In the first place, it is well known, that the biliary organ is peculiarly insensible, and that even structural derangement may go on to a vast extent, without exciting much pain or apprehension. In the second place, derangements in the *functions* of this organ are still more obscure, and require the minutest attention to symptoms and feelings, which hardly any but the patient himself can comprehend, and that too, when his attention is excited to the subject, and when he is himself acquainted with the structure of the human frame. For instance, unless the consistence, colour, &c. &c. of the fœces are assiduously attended to, (which, of course, is rarely the case) the state of the biliary secretion cannot be ascertained.

In the third place, the symptoms attending derangements of the biliary system, are so easily mistaken for, and so generally accompanied by derangements in the other digestive organs, as to mislead the patient himself, and too often his Medical adviser.

Fourthly, it is only in tropical regions, where hepatic diseases force themselves upon the most inert observation, that the sympathetic connection between the functions of the skin and liver would be likely to arrest attention, particularly where the personal sufferings of the observer might be the means of exciting a more than usual degree of accuracy in the investigation. Such was the case, when I traced the sympathy in question; and by which I have been enabled to delineate the nature, the causes, and the treatment of diseases in hot climates. I shall here only give a mere outline of the *result* of my observations on this interesting subject, referring to the various parts of my Essay for a more extended elucidation.

It is admitted that in summer and autumn, when atmospheric heat has attained its maximum, the secretion of bile is more copious than in winter and spring. It is also known to those who have lived or practised in hot climates, that among the Europeans who migrate thither, the redundant secretion of bile is a prominent feature in the animal economy, whether in sickness or in health, during the first years of residence there, and while the constitution is becoming

assimilated to the new climate. The most superficial observer will acknowledge that in summer and autumn *here*, and during the period alluded to, in hot climates, the perspiration is greatly increased. Here then are two effects steadily produced by the same cause, viz. perspiration and biliary secretion augmented by a high range of Atmospherical temperature. Now it is admitted by the most ingenious physiologists that *contemporary action* in any two organs will, in time, produce such an association that when the impulse is given to *one*, the other will act by what is termed sympathy. Allowing then, that there is no original consent between the functions of the skin and liver, surely this synchronous state of excitement, produced by the same general cause, in all climates and ages, must form one; and this is all that is contended for; as it is of little consequence to know *how* the sympathy has been produced, provided we know that it really exists, and of this fact, I trust I have adduced sufficient proof in my former Essay. By the Sympathy in question, the whole range of effects resulting from the influence of tropical climates on European constitutions, becomes easily explicable, and what is of more consequence, it points directly to those means of prevention and cure which the most extended experience has proved to be most effectual; a circumstance that adds no inconsiderable weight to the evidence of its truth.

I have shewn in the Essay alluded to, that the increased secretion of bile, though a matter of considerable inconvenience, would be of comparatively trifling consequence, did it not predispose to a much more serious event—a *check* to the secretion; in the same manner, that after a profuse perspiration the salutary discharge from the skin is more easily suppressed, than if the perspiratory vessels had not been thus inordinately excited So in this country, the augmented secretion of bile and also of perspiration, during the heat of summer, is attended with few bad effects till the *autumnal vicissitudes* commence, when frequent checks to both secretions derange the functions of the digestive organs, and render the biliary and gastric secretions both *irregular* and vitiated, for a considerable time afterwards. Here then, we see that *our own climate* has considerable effect on the Hepatic system, by means of the sympathy in question, though such a circumstance has been little suspected; and if the influence of climate is not so powerful as to frequently drive the biliary organ into a state of

inflammation or suppuration, as between the tropics, it is quite sufficient, in conjunction with certain causes, which I shall hereafter trace, to occasion or increase that extensive class of *chronic* and *functional* derangements of the hepatic system, which have so long been falsely designated by the vague epithets—nervous, dyspeptic, and hypochondriacal.

Subsect. 6.—*Internal Sympathies.* Besides these sympathies between the surface of the body and various internal organs, there is another train of sympathies, not less remarkable, between the organs themselves. That between the stomach and brain (Gastro-cerebral) has been long observed by Physicians, a familiar instance of which occurs in what is not inaptly termed the sick head-ache.

The stomach indeed seems the centre of sympathies; for besides the above-mentioned, it sympathises with the liver; (Gastro-hepatic sympathy) on which account the diseases of the latter organ are often referred to the former. With the kidneys it sympathises very evidently, since irritability of the stomach is a very common symptom of calculous affections of the kidney or ureter; this may be termed the *Gastro-renal* sympathy. The consent between the stomach and womb (Utero-gastric sympathy) is evinced during pregnancy by morning sickness in the earlier stages, and the whimsical appetites or longings which, in particular constitutions, appear at more advanced periods of Gestation. The latter symptoms have been ridiculed by modern physiologists, as imaginary or knavish, (as was indeed the whole doctrine of sympathy) but—

"Naturam expellas furca, tamen usque recurrit."

The foregoing considerations will induce the medical sceptic to pause before he pronounces those cravings to be *unnatural* or fictitious, because they are sometimes assumed for selfish purposes. We see then, that the insalutary impressions of the atmosphere transmitted from the surface to the central parts of our bodies, may be there reproduced and transmitted from organ to organ, by means of the sympathies above-mentioned, till various and complicated maladies, accompanied by a tribe of obscure and anomalous symptoms have arisen, that are as embarrassing to the Physician as they are distressing to the patient!

Subsect. 7.—*Scrofula.* The inhabitants of this country have long been considered as more affected with scrofula

than those of almost any other climate; and there is every reason to believe that this national infirmity is attributable to the mutability of our atmosphere. That the delicate structure of the lymphatic vessels, distributed through all parts of the body and so widely spread over the surface, should suffer from aerial impressions requires little stretch of belief, and the subject has lately undergone so able a discussion by Mr. Goodlad, that it is unnecessary to dwell upon it here, and therefore I shall merely adduce a short extract or two from Mr. G's Essay, in corroboration of what I here advance.

"Scrofula, says Dr. Cullen, generally shows itself at first, at a particular season of the year; and at some time between the winter and summer solstice, but commonly long before the latter period. It is to be observed further, that the course of the disease is usually connected with the *course of the seasons.*" vol. 4th. p. 364. "The Influence of the atmosphere, (says Mr. Goodlad, Essay, p. 95) over the actions which constitute scrofula appears, even from this author's (Cullen's) account much too general and extensive, to have enabled him to attribute every phenomenon of this unpleasant complaint to the "acrimony of the fluids"; and this view of the subject swells into greater importance when we consider that the disease occupies those parts, which in children are most exposed to the action of the atmosphere; that it is most frequent in those countries where the *climate is most variable, and at the most variable seasons*, and that we can only attribute its very frequent occurrence in this kingdom to the *climate* which has become proverbial."—Mr. Goodlad elucidates his reasonings by striking facts; among others he adduces the well known circumstance of scrofula being so uncommonly prevalent at Manchester, and accounts for it thus.

"The children from a very early period of life are cooped up in cotton mills, where the atmospheric heat is seldom below 60°; ventilation is not, or cannot be, sufficiently attended to; the constitutional powers are thereby weakened, and the frame rendered less able to resist those effects which the application of any external agent is calculated to produce. After the day's confinement in heated rooms, the children are exposed to cold and wet; they are generally without shoes or stockings, and the rest of their clothing is little calculated to defend them from this sudden transition." p. 136.

This disease, therefore, being clearly traced to original influence of climate, while the predisposition is transmitted from parent to child, enables us more easily to explain the prevalence and fatality of *pulmonary consumption*, which, in so great a majority of cases, depends on scrofulous tubercles in the lungs, excited to inflammation by aerial vicissitudes

Subsect. 8.—*Recapitulation.* Let us now briefly recapitulate the leading features of the foregoing preliminary discussion

1st—The climate of England is remarkably variable; the mean temperature being about 52° Fahrenheit.

2ndly—Sudden atmospherical vicissitudes are very prejudicial to health.

3rdly—The transitions are injurious to the constitution in proportion as the temperature has been much above or much below the medium heat of the time and place previously, and also in proportion to the length of time it continued at the opposite extreme: because the operation of heat predisposes the human frame to be more easily injured by sudden transitions to cold, and *vice versa.*

4thly—Atmospherical impressions are primarily made on the skin and lungs

5thly—There is an intimate sympathy between the skin and lungs, which becomes the medium whereby atmospherical transitions occasion or increase the extensive class of *pulmonic* complaints, from a common catarrh to a confirmed Phthisis. This class may be termed the national or climatorial disease, in the same manner as derangements of the *biliary* system form the most numerous class in tropical climes.

6thly—The sympathy between the skin and stomach (cutaneo-gastric) leads to the production or aggravation of many complaints in the functions of the latter organ, from aerial vicissitudes acting on the surface.

7thly—The *cutaneo-intestinal* sympathy, or consent between the skin and intestines, occasions derangements of the bowels in the same way.

8thly—The "*cutaneo-renal* sympathy," or consent between the surface and kidneys accounts for the vicarious increase of urine, when the pores of the skin are constricted, and perspiration diminished.

9thly—The "*cutaneo-hepatic* sympathy," or consent between the functions of the skin and liver, accounts for the mode in which atmospherical impressions on the surface occasion or increase hepatic derangements, which have too often been mistaken for, and misnomered—nervous, dyspeptic, and hypochondriacal.

10thly—The interior organs themselves when once affected through sympathy with the surface, sympathise unequivocally with one another, producing various anomalous and complicated symptoms.

11thly—Aerial vicissitudes produce scrofula, the taint or predisposition to which is transmitted from parent to progeny.

It may be observed here, that if the various organs abovementioned sympathise so sensibly with the surface, so also do the skin and its functions sympathise in turn with them. Rarely, if ever, are the skin and perspiration natural, when any derangement is going forward in the structure or functions of the aforesaid viscera.

We now proceed to an important subject, the means of counteracting, as far as in our power, the deleterious impressions of the atmosphere that surrounds us; and which we see, by means of the sympathies pointed out, are communicated to internal organs of vital importance in the animal economy. If to some readers the investigation has appeared too minute, let it be remembered that a lucid explanation of *causes* suggests to every intelligent mind a variety of ideas relative to the prevention of *effects*, which could hardly be conveyed by the most elaborate didactic rules. In this respect all our popular medical works are lamentably deficient.

To treat in detail, however, of the principal prophylactic measures here, would be to anticipate the observations which will come in, more appropriately, under the head of *dress*, and other subdivisions of the work. I shall confine myself therefore to a few remarks on the nature and medical treatment of those diseases resulting from the influence of our variable climate on the English constitution, particularly in their incipient stages, when indeed their progress is most easily checked, and their sequelæ avoided.

If the delusive, but ingenious speculations of the Brunonians have produced infinite mischief in their attempts to simplify too much, and reduce diseases within the nar-

row boundary of two classes, sthenic and asthenic; it must also be confessed, that their predecessors, by wild theories and endless distinctions, had created confusion and difficulty, where a little attentive observation of Nature and facts might have led to simpler doctrines and more uniform practice.

The Phantoms of "*debility and putrescency*," resuscitated in the Brunonian school, and there arrayed in colours truly alarming, have held, to this day, in imaginary chains, their widely disseminated votaries on the continent of Europe; and although the more enlightened practitioners of this country reject the tenets of Brown, it is sufficiently evident that many of his most erroneous doctrines, still paralyse their arms and haunt their imaginations.

Within these few years, however, the trammels of medical authority have been broken, and a mental emancipation has led men of genius and observation to deduce *doctrines from facts*, instead of bowing in silent acquiescence to the dogmas of antiquity, and suffering themselves to be chained to the footstool of prejudice.

To these Phantoms and prejudices we owe the exclusion of the cool breath of heaven from the parched and fevered patient labouring under Eruptive and other acute diseases;—To these, the rejection of purgatives in typhoid fevers;—To these, the proscription of the Lancet in every febrile complaint, not unequivocally accompanied with topical inflammation! But modern experience has proved that *cold water* may be applied with advantage to the burning surface of fever, and that instead of laxative glysters, at long intervals, daily and repeated purgatives do not weaken but refresh the patient labouring under typhus.

Dearly purchased experience has also shewn, that in those terrific endemics, which occasionally sweep off whole ranks of our countrymen beneath the burning skies of the Indies, the rapid abstraction of blood—the cold or tepid affusion of water—the most prompt evacuations from the bowels—and the liberal administration of mercury, have snatched thousands from a premature grave, where the scholastic doctrines of debility and putrescency, with their inseparable attendants, *Bark*, *Wine*, and *Opium*, would have precipitated them inevitably into the jaws of death!

It is only by minutely investigating the various links in the chain of cause and effect, or, in other words, the "*Ratio Symptomatum*" in diseases, that we can arrive at satisfac-

tory doctrines and successful practice; nor should this mode of proceeding be branded with the epithets Theoretical or Speculative. The deductions are legitimate, because they result from observation and facts; and the reasoning is practical, because it is the offspring of experience.

We have shewn that atmospherical vicissitudes acting on the surface produce, by a chain of sympathies, considerable derangement in the functions or even structure of internal organs. Now although the identity of cause leads to a considerable similarity in the means of *prevention*; (as will hereafter be shewn) yet, the impressions having once produced their morbid effects, a variety in the means of *removal* is essentially necessary. We shall therefore examine the effects in the order of their causes.

Sect. II.—CUTANEO-PULMONIC SYMPATHY, AS ELUCIDATING THE ETIOLOGY AND PATHOLOGY OF CERTAIN DISEASES OF THE RESPIRATORY ORGANS.

If we survey the whole tribe of pulmonic complaints, from a common catarrh to a confirmed phthisis, we shall be constrained to acknowledge that, of all organs, the lungs are by far the most frequently affected, independently of their participating in the effects of fevers, in common with other viscera.

Pulmonary consumption alone is computed to carry off fifty-five thousand British subjects annually, or cause one-fifth or sixth of the whole mortality. If to this we add the deaths from inflammation of the lungs, asthma, water in the chest, &c. the catalogue becomes frightful: though, as I remarked before, a consideration of the texture and office of the organ in question, and the climate we inhabit, will sufficiently account for the peculiar prevalence and mortality of pulmonic complaints in this country.

It is not meant by this to attribute *genuine Phthisis*, or turbercular consumption to the *direct* influence of the climate. I believe the remote, predisponent, or as some term it, the hereditary cause to be a scrofulous taint in the constitution, or nascent turbercles in the lungs; but I believe also that in four cases out of five, this taint is excited into action, or these turbercles into inflammation and suppuration, by the effects of climate, and principally by often repeated and neglected colds, together with the higher

degrees of pulmonic inflammation.—If therefore I have been successful in proving that scrofula itself is produced by climate, the whole class of pulmonary complaints may then be referred, directly or indirectly, primarily or secondarily, to atmospherical transitions.

If we narrowly observe the operation of these, we shall in most cases, find the functions of the skin first deranged. That diapnöe or insensible perspiration which just keeps the skin soft and of a natural temperature and feel, is checked. The balance of the circulation is slightly disturbed. It oscillates from the surface to the centre and back again, as is manifested by the slight chills and flushings, that succeed each other. But that the balance is chiefly broken by a determination to the interior or larger vessels, with a torpor of the capillaries on the surface, is proved by the almost constant sense of chilliness and inclination to keep near the fire which we feel in catarrhal and other pulmonic complaints. The capillaries in the lungs sympathising with those on the surface, the blood is not transmitted through them with the same facility as before; and hence a plethora is kept up in that organ, till the complaint is removed. Nature seems to effect this by an increase of action in the exhalent vessels and glands spread over the mucous membrane of the bronchial tubes, where an effusion or secretion takes place in the form of an expectoration which gradually relieves the turgescence in the lungs, as it is brought off by coughing, till the functions of the skin and respiratory organs at length resume their healthy standard.

It is easy to conceive that from this lowest grade of pulmonic disorder, denominated catarrh, up to the highest state of inflammation or pneumonia, the effects will be in proportion to the violence and duration of the atmospherical causes, already pourtrayed, and also according as the constitution, and particularly the lungs, have suffered deterioration by previous attacks.

The rationale here attempted points directly to the measures of relief—viz. to determine to the surface, restore the functions of the skin, and relieve the respiratory organs.

Thus in the milder degrees of pulmonic disorder, resulting from atmospherical vicissitudes, tepid, diluent drinks, moderately warm clothing, and a certain degree of abstemiousness, effect the two first objects. But whenever the balance of the circulation is so far broken as to cause any

considerable degree of pulmonic inflammation, marked by pain in the chest, cough, and want of freedom in respiration, accompanied, of course, by febrile symptoms, then the lungs are to be relieved by more active measures; otherwise the most serious consequences may ensue, directly by the inflammation itself, or indirectly by exciting scrofulous tubercles into a state that may ultimately give rise to pulmonary consumption.

In all inflammatory affections of the lungs, it appears that Nature attempts the cure by *expectoration*; but in the severer cases she is seldom successful, for besides that the discharge is inefficient, the cough and fever attending this process, are harrassing and dangerous to the patient, who seldom escapes without consequences resulting from this natural attempt at a cure, which lay the foundation for future illness.

The most obvious, and what is more essential, the most certain plan of relieving the organ of respiration in these cases consists in a rapid diminution of the circulating mass of fluids; first by bleeding from a large orifice till the inflammatory action is interrupted by syncope, or at least a sense of fainting, which will often render a repetition of this species of evacuation unnecessary. Secondly by purgations, which by acting on the intestinal canal, abstract from the general circulation a very considerable proportion of fluid, besides clearing the bowels, and thereby allowing a freer course to the blood through the great vessels distributed to the various abdominal viscera, as well as to the lower extremities. The pernicious doctrines of debility, rather than any popular *prejudices* against these *decisive* measures at the commencement, have too often rendered the surest means of relief comparatively inert, if not actually prejudicial. It appears to be the aim of practitioners rather to moderate than subdue the inflammatory action, trusting to the *natural* process of expectoration for the completion of cure, instead of exterminating, as it were, the inflammation, and rendering the tedious, uncertain, and sometimes dangerous process of expectoration unnecessary.

That the most violent pulmonic inflammation may be subdued in the manner above-mentioned, without a particle of expectoration, many practitioners of eminence could bear witness; but it requires discrimination to hit the mark in safety; for if we go blindly beyond a certain point, an

effusion will take place in the lungs from too *copious* as well as too *scanty* depletion.

In whatever manner we proceed, at first, it is certain that after expectoration has commenced, evacuations both by bleeding and purging are to be cautiously employed. They are the more safe in proportion as the expectoration is scanty, the cough dry and troublesome, and the surface fevered. On the contrary, when the expectoration begins to come more copious, and the surface relaxes, although considerable pain accompanies the cough, the lancet and purgatives are seldom necessary to conduct to a safe termination. Antimonials at first, and gradually increased expectorants, as the febrile stricture goes off, will, in general, succeed, with blisters to relieve local uneasiness. But the common mode of applying a blister almost as soon as evacuants are prescribed, produces great mischief. The stimulus of a blister generally proves hurtful during the first thirty-six or forty-eight hours of pulmonic inflammation, unless the most prompt and decisive evacuations are early had recourse to; a mode of practice that I would strongly recommend from undoubted evidence of its utility.

In recovering from most acute diseases, but particularly from one where so important an organ as the lungs has suffered; the greatest presence of mind is necessary to restrain the patient's appetite, which almost invariably exceeds the power of digestion, and produces a tendency to return of the febrile state. But this is not all; blood is formed in such abundance by the new supply of food, that the excretions are not adequate to keep a proper equilibrium in the circulation; hence the slightest degree of plethora is apt to oppress the weakened organ, and relapse is the consequence. This caution cannot be too strongly impressed on the practitioner's mind, since any sanction which he may give to the solicitations of the patient or friends will certainly be remembered when the sinister occurrence takes place, and all the bad consequences will be laid to his charge.

Subsect. 2. Asthma.—This disease has been very uselessly divided into almost as many species as there are exciting causes or morbid complications. There is but one species of convulsive, or periodical Asthma, although it may be combined with various diseases which obstruct the free function of the lungs, occasioning more or less of

permanent dyspnœa or difficulty of breathing, which difficulty is always greatly aggravated during the proper asthmatic paroxysm. Thus there may be organic disease of the heart combined with asthma, and then we have Angina Pectoris. The lungs of an asthmatic individual may become, as the weak point, the seat of irregular gouty irritation; then we have Asthma Arthriticum, or gouty asthma. There may be dropsy of some of the pectoral cavities, forming a dangerous complication; or there may be tubercular disease of the lungs themselves; for there is nothing in asthma to forbid Phthisis, or *vice versa*.

There is no disease which presents a finer specimen, or a more decisive illustration of atmospheric influence over the human functions; or of that broken balance in the excitement and circulation, which thence results, than asthma. The whole symptomatology, predisposition, and consecutive phenomena give evidence to this statement.

Symptomatology.—Preceding sense of fulness, tightness, flatulence in the *epigastric region*—with yawning, and discharge of pale urine. These symptoms are followed in the night by the above sensations in the *chest*, thus shewing the incipient oscillations of the vital power or excitement, accompanied, of course, by vascular derangement. It is remarkable that the first *warning* symptom is often a sudden *inclination to stool*, or intestinal irritation, which as quickly shifts its seat to the stomach, and then flies to its favourite station, the chest. Now come on convulsive dry cough—difficulty of inspiration—heaving of the chest and shoulders—wheezing—pallor or livor of the countenance—inability to lie down—coldness of the extremities—gasping for fresh air—great perturbation in the pulse, which is weak or throbbing—intermitting or redoubling. Head-ache next succeeds in most people—feverishness—belching of wind, and discharge of the same downwards, especially when the paroxysms are taking the turn. All this time, the patient's mind is greatly agitated—often there is horror or apprehension of death. The unhappy sufferer indeed is the picture of distress, and experiences the agonies—worse than the agonies of death. The fit gradually declines with deposition in the urine—and a slight or copious secretion from the mucous membrane of the lungs, which depositions and secretions appear to be either the cause or the effect of a returning equality of balance in the

excitement and circulation. The duration of the paroxysm is very various; and so are the returns of the fit. The *latter* often seem to tally with the phases of the moon; but this, in all probability, is owing to the atmospherical perturbations and vicissitudes which so generally happen at these epochs. It is more frequently immediately *prior* to the aerial change, that the asthmatic patient feels himself menaced or attacked. Thus approaching falls of snow, or rain, changes of wind, thick fogs, electrical phenomena, &c. exert a powerful influence on this complaint.

Terminology.—Here, as in many other instances, *effects* have been mistaken for *causes*. Asthma may harrass the patient to a very old age, and produce no organic lesion. At other times, however, when inveterate, it may terminate in pneumonic inflammation, phthisis, hydrothorax, or apoplexy.

Pathology.—In uncomplicated asthma, death discovers no trace of organic disease. In respect to the proximate cause therefore, it must be *functional*, and not *structural*. Some people deny that there can be any lesion of the one without lesion of the other. But to those derangements of organization which offer no visible trace we may say—

De non apparentibus et non existentibus eadem est ratio.

Every phenomenon, however, of the disease evinces the great breach which is made in the balance of the excitement, and consequently of the circulation. We see the whole vital energy concentrated, as it were, about the lungs, the grand seat of irritation and temporary engorgement of the vascular system. Whether spasm may or may not exist in the respiratory organ at this time, I shall not attempt to ascertain; but no person who has attentively observed the phenomena of an asthmatic paroxysm, can fail to perceive that the vessels of the lungs are overpowered with blood, as well as the seat of inordinate irritation, while the skin, the extremities and various other parts of the body are deprived of their share both of the excitement and circulation.

Etiology.—Hereditary conformation, atmospherical influence—certain *irritations*, as from dust, smoke, offensive odours, &c. Wandering gout—irritation in the stomach and bowels—profuse evacuations—intense study—retrocession of cutaneous eruptions—strong mental emotions, &c.

are among the principal predisposing and exciting causes of asthma.

Therapeutology.—In the paroxysm, perpendicular posture in a spacious apartment—free, but not too cool air. Feet to be immersed in warm water. If at this time an emollient injection, with a large portion of tincture of castor, and tincture of assafætida, were thrown up, it would be of great service; but it should be done with as little motion or inconvenience to the patient as possible. But our grand dependence is on laudanum, æther, camphor, assafætida, valerian; and antimonials or ipecacuanha to encourage expectoration. I can speak from observation, however, that opium is given, in general, with too sparing a hand, as well as æther, camphor, &c. The abdominal viscera are in a state of *torpor* proportioned to the intensity of orgasm that exists in the lungs. The antispasmodics then, as in tetanus, may be given in doses which would produce serious mischief, if the balance of excitement and the circulation were justly poised. In such cases, I have given 60, 80, or 100 *minims* of laudanum before any sensible effect could be produced.

Where there is suspicion of organic disease accompanying asthma, still we must use the same remedies, though when the lungs are threatened with suffocation from the engorgement of their vascular structure, we must occasionally endeavour to restore the balance by local, or even general bleeding—sinapisms, blisters, &c. in short, by every kind of *counter-irritation* both internal and external.

In the intervals, the great thing is to avoid the various exciting causes—to keep the digestive functions in a proper state—to guard against atmospherical vicissitudes, and to keep up a regular and uniform excretion from the pores of the skin by flannels; lastly to maintain as even a state of mind as possible; remembering that asthma is more alarming than dangerous, and that it rarely proves fatal unless when complicated with, or in very inveterate cases, terminating in, some organic disease of a vital organ.

Subsect. 3.—Phthisis.—We shall now take a very cursory survey of that singularly melancholy species of pulmonic disease, denominated *Phthisis* or pulmonary consumption. It is certain, that notwithstanding the extensive prevalence of genuine phthisis, yet a great many diseases, accompanied by wasting of the body, hectic fever, and

cough have been classed with pulmonary consumption, both by the medical attendants and friends; hence a number of pretended cures have been performed, and nostrums have been extolled, when the complaint was only long protracted catarrh, or abscess in the lungs from inflammation, where no scrofulous taint lurked in the constitution. The numerous cases that have been published of pulmonary consumption cured by Digitalis also were probably abscesses in the lungs from pneumonia, which will frequently heal under common treatment, where no scrofulous tendency existed previously. It will be found that where the disease approaches insidiously on young people with "*light hair, fair skins, blue eyes, florid complexions, contracted chest, and high shoulders,*" especially if any of their progenitors have fallen victims to the same malady, a cure will rarely be effected, though the progress of the disease may be long protracted, where the patient's circumstances will admit of unremitted attention to regimen. In such cases the slightest determination to the lungs should excite anxiety and claim our attention; for often when the cough is so trifling as to be only a slight heck, as if occasioned by mucus or phlegm in the throat, we shall find the circulation deranged and considerably accelerated after meals, especially of animal food. There will not be the same degree of ease in lying on one side as on the other;* and in females about the age of puberty the catamenia (menses) will not come on. Hæmorrhage from the lungs, under such circumstances, is always suspicious, for although it often appears to be an effort of nature to relieve the local congestion, yet the ulcer which succeeds does not always heal, and too frequently terminates in confirmed phthisis. The wandering pains and anomalous symptoms which so often accompany the incipient stage of pulmonary consumption are embarrassing to the practitioner, nor can any thing decisive be prognosticated from the expectoration, for pus does not appear till the disease is far advanced—too far alas for cure! When phthisis is regularly established, it forms one of the most distressing pictures which the human frame exhibits in its progress to corruption! The hectic flush on the cheeks, the vermillion lips, the burning heat in the palms of the

* Dr. Parr asserts that if the patient can lie on the side where the pain is felt the disease is *not* phthisis.

hands and soles of the feet, with evening fever, are periodically changed for cold colliquative sweats, hollow, pale, languid countenance, sharpening features, augmented expectoration, and progressive emaciation! Such is the series of heart-rending symptoms which are daily presented to the agonized friends, whose distress is heightened by the never dying hopes which perpetually spring in the hectic breast! Whether it is that the delicate organization which predisposes to this destructive disease contributes to amiability of temper and sweetness of disposition, is doubtful; but certain it is, that the malady in question falls in general on the best, as well as the loveliest part of the creation.

The following condensed outline of what the experience of ages has found the most efficacious means of resisting the progress (who can say effecting the cure?) of this remorseless enemy to the British constitution, in particular, may not be undeserving of the *professional* as well as the general reader's attentive consideration.

As the predisponent, or what may be termed the hereditary causes of consumption are beyond our control, we can only look to those which usually excite the disposition into action; and as the state of the *atmosphere* has been shewn to influence scrofula, and, in general, to produce catarrhal complaints, so our principal object must be directed to the regulation of this important agent.

We must take care, however, in sedulously guarding against colds not to render ourselves enervated exotics by heat. The only effectual means of resisting any injurious impression to which we are unavoidably exposed at times, is by careful, gradual exposure to its operation. By attention to dress, however, we can defend ourselves, in a great measure, from sudden vicissitudes, particularly from heat to cold; and, where circumstances will admit, a removal to a mild and warm climate, will obviate the necessity of being ever on the watch. A tropical climate is not the safest asylum for the pulmonary invalid. There, the transitions of temperature are often rapid, and the lungs are apt to participate in diseases to which other organs, particularly the liver, are peculiarly prone beneath the torrid zone. In the warmer countries of Europe, though the houses are, in general, well adapted towards obviating atmospherical heat; yet from their construction, the pulmonic invalid is there peculiarly liable to catch cold; so that,

perhaps little advantage is gained, on the whole, by emigration abroad. It is certain, however, that *pure* air and elevated situations are prejudicial, and that those who live in the vicinity of marshes, where hydrogen abounds, are not so subject to pulmonary consumption; and it has even been suspected that *hectics* have increased as intermittents have disappeared. The more equable temperature of the sea has long been known as favourable to phthisical patients. The southern and western counties of England and Wales afford secluded vallies where the bleak north-east can hardly penetrate, and where the surface of the earth is not long bound in frost. There a limited indulgence in gentle horse exercise, by visiting the neighbouring shores, in fine weather; guarding against every stimulus in diet, and yet admitting a small proportion of light animal food, with *moderately* warm dress, will often prevent the predisposition from coming into action for a long time—perhaps till the phthisical period has elapsed altogether.

In what may be termed *incipient* phthisis, and especially where local affection is evinced by pain in some part of the thorax, the permanent drain of a series of blisters, perpetually travelling round the chest, a number of issues, or a seton, in conjunction with the foregoing measures, will be productive of excellent effects. A strong prejudice exists against bleeding in phthisis, principally, perhaps, because it has been used at too late a period, when every remedy would have failed; and where, of course, it has exhausted the strength without subduing the disease. But for the purpose of checking those determinations to the lungs in catarrhal and hæmorrhagic affections of the respiratory organs, the abstraction of blood, at proper periods, especially by leeches, will be found an invaluable prophylactic against phthisis.

Occasional emetics, by determining to the surface and keeping up an action in the extreme vessels, are also useful; though they must be so managed as not to pass into the bowels and occasion purging, which always renders expectoration difficult.

As for the various remedies which have acquired an ephemeral reputation only to disappear like "wave succeeding wave," it is needless even to name them. Digitalis and hydrogen gas are recent examples. Prussic acid and the vapour of tar will soon evaporate into "air, thin air."

In respect to diet, the extremes of Sangrado and Brown are to be equally avoided. Early hours, in rising, a light breakfast with whey or asses' milk, gentle exercise, particularly gestation, till one o'clock, when a single dish of light animal food should constitute the dinner, are to be succeeded by an hour or two's repose. Water is undoubtedly the best drink at dinner, and tea in the afternoon. It is needless to say that supper should be of the lightest nature imaginable.

Phthisical invalids, in general, err by covering themselves with too much flannel and warm clothing. They certainly should defend themselves carefully from sudden applications of cold, but in doing so, they should not elicit too much perspiration from the skin by warmth; for they are thereby not only enfeebled, but rendered doubly liable to suppression of the cutaneous discharge. As the weather gets warm, calico may fairly supply the place of flannel, but the feet should be sedulously kept dry and warm.

In the advanced stages, opiates judiciously managed, may *soothe* the sufferings of those whom we vainly endeavour to save from the ravages of this insatiable disease. The superacetate of lead also, when joined with an opiate, restrains, in a very powerful manner, the morning perspiration, which wastes and harrasses the patient. I have seen very good effects from it in this complaint; and some have gone so far as to say it has *cured* Phthisis.* It has also been proposed and even tried with success, to send Phthisical patients to the fenny counties, as Essex and Lincoln, where it is said an attack of ague has suspended Phthisis. In these ulterior stages, a more generous diet, and even some wine may be allowed. These instead of increasing the fever and expectoration, will often check both. The compound powder of Ipecacuan at night will often restrain the morning perspiration, if given in doses of 12 or 15 grains. The Sulfuric Acid will also be useful.

Before taking leave of this melancholy subject, it may not be uninteresting to hint at a preventive check to phthisis, which I believe has never been acted on in this country.

It is well known that the pathology of hæmorrhoids

* Transactions of the College of Physicians—Vol. V.

(piles) has met with infinitely more attention on the Continent, than in England; and it has been well observed by Sir T. Morgan, that "The extreme irregularity of our insular habits of life, and the mutability of our climate, are by no means favourable to the observation of those great movements in the system, which the continental pathologists describe. We are not therefore to accuse them of exaggeration." *Ed. Journal, No. 53.* In fact, I think there is no doubt but that the hæmorrhoidal flux or movement is of *more frequent* occurrence on the continent than in this country, and that Phthisis, on the contrary, is *less frequent* there. Now without going the length of coupling these as cause and effect, I conceive there is much foundation for the German and French doctrine of hæmorrhoids being, when moderate, a salutary operation of nature, and a *preventive of Phthisis.* This idea is strongly countenanced by the well known fact that a particular disease of the rectum attended with a discharge (fistula in Ano) almost uniformly suspends Pulmonary consumption for a time; and that, on the other hand, when a fistula is suddenly cured by an operation, or spontaneously, in unsound constitutions, a determination to the lungs is often the result. The father of Physic indeed plainly speaks of the anti-phthisical effects of the hæmorrhoidal discharge. "Qui sanguinem per ora venarum quæ sunt in ano, perfundere solent ii neque lateris dolore, neque pulmonis inflammatione, corripiuntur."—*De Humor.*

Montegre, the latest and the best writer on Hæmorrhoidal affections, is of opinion that this sanguineous movement preserves thousands annually from the ravages of pulmonary consumption. The two following cases are quoted from the French of Larroque and Montegre in support of the foregoing observations.

Case 1. A young lady, prior to the age of puberty, had all the symptoms of pulmonary consumption; but as soon as the menses were established, these symptoms disappeared, although several distinguished physicians had pronounced the case incurable. From this time till the cessation of the menstrual evacuation, at the age of 45, no complaint of the chest was manifest, but at the turn of life, the symptoms of Phthisis were again renewed. Fortunately at this epoch the hæmorrhoidal flux appeared, and the thoracic affection instantly gave way. Between the age of sixty and seventy

the hæmorrhoidal discharge ceased, and again returned the cough and expectoration of which she died. The following case was communicated to Dr. Montegre by Dr. Bodson.

Case 2. A man, 25 years of age, married two years, tall and thin, became affected with constant and severe pain between the shoulders, accompanied by cough and copious expectoration, emaciation, and progressively increasing debility. Notwithstanding various means, these symptoms got worse and worse, and the young man was considered to be in a confirmed consumption. The attending physician happening to recollect that the father of the patient had been hæmorrhoidinary, conceived that the establishment of such an affection might be serviceable to the son, and consequently applied six leeches to the fundament. The effect was so rapid and decisive that it appeared as though the pulmonary disease was destroyed by a single blow. The hæmorrhoidal movement became irregularly established, he recovered flesh and strength, and continued in good health.

From these considerations it would appear desirable, in the incipient stages especially, of pulmonary consumption, to induce piles by aloetic medicines, or the periodical application of leeches to the verge of the anus. This hint may be more useful to the patient than to the physician; for unfortunately the latter is seldom consulted till the disease is too fast seated, for any remedy to remove.

Dr. Armstrong, in a recent work, has called the attention of the faculty towards the use of the Harrowgate and Dinsdale sulphureous springs in pulmonary consumption. He states that he lately saw two most remarkable cases of confirmed Phthisis cured by these waters. This proposition from such an authority is well worthy of serious consideration and trial.

Sect. III.—GASTRIC COMPLAINTS; OR, THOSE AFFECTIONS OF THE STOMACH ORIGINATING IN, OR THROUGH SYMPATHY WITH THE SKIN—CUTANEO-GASTRIC SYMPATHY.

NEXT to the lungs, the stomach, in this country, appears to be the organ whose functions, at least, experience the greatest variety of deviations from a healthy state. This

cannot excite surprise, if we consider how extensively it sympathises not only with the surface of the body, but with the brain, the liver, the kidneys, &c.; and also how frequently its natural digestive functions are deranged by the variety of "dishes tortured from their native taste," and inebriating materials in our drink. To these must be added the wide range of mental emotions, which invariably disturb the digestive operations of the stomach, whether they be of a joyful or a sorrowful nature, unless restrained within philosophic bounds, which few are able to effect in these times of anxiety and conflicting interests.

When we again consider that a due action in this important organ is essentially necessary to the support of the human frame, and that its derangements must, of course, affect the whole system, which depends on it for immediate and hourly support, we may conceive some idea of the influence which stomach affections must exert both on the mental and corporeal functions. In fact, it is quite certain that every organ, (particularly the brain, liver, and skin, with their functions,) participates in, and is influenced by derangements of the stomach.

The effects which external, or atmospherical impressions make upon the organ in question, through the medium of the skin, are not very analogous to those on the respiratory organs, inasmuch as inflammation of the stomach from this cause, more rarely takes place. I have seen three distinct cases, however, where inflammation of the stomach was induced by sudden cold applied to the surface of the body, and several where cold drinks have produced the same inflammation. The sympathy between the skin and the stomach is equally remarkable in a high as in a low temperature; but still more so in sudden transitions of temperature, as well thermometrical as barometrical and hygrometrical. In a high range of atmospherical heat, the vessels of the skin are unusually excited, and the process of perspiration is greatly increased. In consequence of this, if it be continued for any time, a subsequent debility of the perspiratory vessels ensues, as has been explained and proved by the ingenious Dr. Currie, and we then clearly observe the consent between the skin and stomach, as evinced by the want of appetite, and desire for the stimulus of fermented or distilled liquors. These effects are greatly increased, if to the external stimulus of high temperature

we add fatiguing exercises, whereby the perspiration is morbidly excited, and the indirect debility of the subcutaneous vessels, and stomach (by sympathy) induced. Hence, after pedestrian exercise in the forenoon, during the heat of summer, and after the perspiratory vessels have become relaxed, we find a sense of fainting at the stomach, accompanied by want of appetite, and desire for some gently cordial and diluting drink, which, by giving a temporary spur to the organ of digestion, brings on the ability to take solid food. The insalutary effects of these proceedings are almost obvious, and they will be noticed hereafter, in the sections on food and drink. The circumstance is so familiar to general observation, that it cannot fail to elucidate the present subject.

In a mild temperature with gentle exercise, we find the skin and perspiration in a natural healthy state, and the stomach not appearing to have any connexion with the surface. But as the weather becomes cool, constringing and bracing the vessels of the skin, we perceive the sympathy in question immediately, for a stimulus or tone is quickly communicated to the stomach, and the appetite is keen.

When the air becomes still colder, uneasy sensations are produced on the surface from the too rapid abstraction of heat, and we are prompted to motion and exercise to counteract them, which by keeping up a due action in the vessels of the skin and stomach, conduce to the same effects as are produced by *moderate* cold—an increase of appetite.

When, however, the degree of cold is so great as to induce any torpor in the vessels of the surface, and this is not immediately counteracted by exercise or clothing, the stomach, as well as other organs, inevitably sympathises, and the imporant process of digestion is interrupted.

These morbid effects will be increased and rendered more dangerous, in proportion as the cold is suddenly applied, after the vessels have been excited by much previous heat or exercise: and particularly if the cold be *partially* applied, and accompanied with wet. The reason of this is plain, from the foregoing observations. Much previous heat or exercise will have excited the vessels of the skin, (and by consent of the stomach) beyond the medium and healthy standard, and of course will have rendered them the more predisposed to torpor and sudden collapse, whereby the functions of the surface and stomach are more easily disturbed. If the previous heat and exercise have con-

tinued so long that a subsequent debility is now taking place, independently of a sudden transition, then the application of the latter will operate with double force; whereas, if the heat and exercise had not produced any disposition to fatigue or weakness, then the constitution will resist a very considerable shock from the application, as is evinced by men and animals plunging into cold water, while heated (but not fatigued) by exercise, without any bad consequences; and hence the propriety of recommending a certain degree of exercise previous to the application of the cold bath, in delicate and debilitated people, which enables them to sustain the shock with impunity; whereas, if the exertions of the muscles have been continued to fatigue, and the pores have been much relaxed by perspiration, the consequences will, in all probability, be dangerous

In a most extensive class of diseases, whose treatment has been hitherto very puzzling, the stomach, in company with the liver and intestines, sympathises to an extent that is little imagined. I mean the variety of cutaneous and eruptive complaints. From the mildest to the most inveterate of these, there is scarcely one which is not more or less connected with derangements of the above-mentioned organs, but particularly the liver, and consequently under the control or influence of remedies directed to them. It is entirely through the medium of this sympathy that the practice of Abernethy and some other ingenious physicians has been so successful, where the local or external affection has been considered as only symptomatic of a more general and internal disorder. If we observe the effects which a single glass of a warm stimulating liquid has upon the surface of the body, when taken into the stomach, we cannot wonder at the various and complicated affections of the skin produced by error in food and drink. Indeed the connexion or sympathy in question has not escaped even vulgar observation, since rashes and eruptions on the skin, are (with great truth too) every day ascribed to peculiar kinds of food and drink disagreeing with the stomach. Familiar examples are hourly exhibited, in what are called surfeits; and if we examine those who have delicate skins, the day subsequent to a debauch, when the functions of the stomach, liver, and bowels, are all out of order, we shall find the most marked corresponding alteration in the feeling, appearance, and function of the surface of the body; an

alteration which cannot easily be described by words, but may be readily detected by an observant eye. By this mark alone, I have often been able to trace the origin of febrile illness to debauches, where it was the object of the patient to deny any such cause. This subject will be resumed again when we come to the *Cutaneo-Hepatic Sympathy*, as it is one of the utmost importance; but it may be here remarked that the sympathy in question (Cutaneo-Gastric) helps to explain the success of certain remedies in syphilitic and Pseudo-syphilitic diseases affecting the skin; for instance the celebrated Lisbon Diet drink of old, and the modern decoction of Sarsaparilla with antimonials;* which, by acting on the stomach, and through sympathy, on the skin, have contributed so much to the removal of cutaneous defœdations.

This sympathy between the surface of the body and the three important organs above-mentioned, illustrates more clearly the operation of cold water and cold air, as well as of the tepid and vapour baths, on the skin in fever. When the external surface is constricted by febrile heat, the perspiration is checked;—the internal surface of the alimentary canal is in an analogous state—the gastric, intestinal, and hepatic secretions are all suspended or deranged. Cold water and cold air (independently of their effects on the senses) by reducing the febrile heat, bring the skin to a perspirable state, when an instantaneous and corresponding effect is produced on the secreting surfaces and organs internally. The tepid and vapour baths, by relaxing the sub-cutaneous vessels, have a similar power in ameliorating the state of the external and internal secretions, through the sympathy in question;—a sympathy that is proved by the well known facts, that in the above operations, the moment the healthy perspiration breaks forth, the *ardent* thirst is assuaged and the discharges from the bowels become more natural. These circumstances, which are evidently of more importance than any effects produced on the *senses*,† have not attracted the notice of former authors, though I hope the subject will in future excite some interest in the minds of medical men. When the above-mentioned agents are applied to the stomach, the external surface exhibits analogous appearances, demonstrative of the association in

* Vide Carmichael on Pseudo-Syphilitic Diseases.

† Vide Currie, Jackson, &c.

question. Hence the propriety of cold drink in fevers, and as solutions of neutral salts are found to increase the effects of gelid potations, the common effervescing draughts with nitre, while they excite the contempt of the young medical sceptic, are evidently salutary upon the principle investigated, a coincidence of reasoning and experience that must prove gratifying to the inquisitive mind.

But to return. I have remarked that those disordered states of the stomach resulting from atmospherical impressions on the surface, do not often partake of an inflammatory nature, as is the case in the organ of respiration; and indeed this observation may apply pretty generally, when the causes are traced to other sources than the climate, as intemperance, depressing passions, &c. The primary symptoms, in short, are those of derangement of *function* rather than of *structure*, for when the *latter* takes place in any of the digestive organs in particular, it is in most instances, from a long continuance of the *former*, for instance, scirrhous pylorus, induration of the liver, &c.

This derangement of function in the stomach appears principally to consist in either a suspension of digestion, or imperfection in that important process. We shall not stop here to theorise respecting the *modus operandi* of gastric digestion, or enquire whether it is performed by "solution," "fermentation," or trituration; it is sufficient to be assured that whenever this living machine ceases for an instant to perform its proper office, its contents suffer chemical combinations and decompositions which are both troublesome and injurious to the individual. The extrication of air, and the generation of acid, are among the first symptoms of deranged gastric digestion; and hence flatulence and heartburn result. But these are trifling evils.—The aliment, instead of being formed into a bland chyme preparatory to a second digestion in the duodenum, passes from the first to the second stomach in an unfit state for the important change which is to be operated upon it when mixed with the bile and pancreatic juice. Hence proper chyle is not formed in the intestines nor conveyed into the circulation; of course the whole tract of the alimentary canal becomes disturbed, and the frame itself languishes.—The mind will now feel the influence of corporeal derangement (for all parts of the system will sympathise with the digestive organs) and consequently despondency, irritability, vapours, and the whole train of Hypochondriacal infirmities will gradually advance.

The features of these complaints, originating in disturbed digestion of the stomach, will be those of debility; and the routine practitioner, in his attempts to obviate *this* by tonics, bitters, &c. will give temporary rather than permanent relief. To obviate or remove the *cause* will be both more easy and more effectual than to combat the *effect*, but it requires a nicer discrimination and minuter investigation, than the other plan.

A very general and extensive cause I have here traced to atmospherical impressions on the surface, communicated through sympathy to the organ of digestion; the others will be duly pointed out in succeeding sections, as will also the means of counteracting them. At present, a few observations on the *Medical* treatment of these effects may be properly introduced here. When the occasional causes are removed, little remains for the physician, since nature will, in general, restore the functions of organs when the impediments are taken away. But the disorders of the stomach produce such lesion of function in the other digestive organs, particularly the liver, and intestines, that some remedial measures are necessary as well as preventive.

These chiefly consist in evacuations and tonics, alternated or combined. The stomach and bowels are generally oppressed with mucus or indigested matters; and therefore an occasional emetic, though an old fashioned, is a useful remedy. It not only clears the stomach, but agitates the whole of the abdominal viscera, increasing the secretion of bile, pancreatic juice, and succus intestinalis, which are almost invariably deficient and inert, or acid and ill-formed. On this account, the warm bath, and warm water drank in the morning, are beneficial. They both promote the healthy secretions, and improve the digestion. As costiveness and irregularity of bowels are generally present, the warmer purgatives are esentsially necessary, and they may be combined with tonics, as the Pil. Aloes. Comp. or laxative pills and bitter infusions may be taken at the same time. But as the complaints in question are seldom unaccompanied by chronic obstructions, or at least a torpid secretion in the liver, a mercurial added to those aperient medicines which are designed to act slowly on the bowels, becomes a necessary measure; for this purpose pills composed of Pil. Hyd. Pil. Aloes. c̄ Myrrha. and Ex. Col. Comp. taken in such doses as to keep up a regular peristaltic motion in the bowels will, in conjunction with bitter infusions, prove more serviceable, than all the catalogue of boasted stomachics. But

this subject will be more clearly elucidated when we come to the section on Cutaneo-Hepatic Sympathy. An attention to dress, and particularly to the warmth and dryness of the feet, need scarcely be insisted upon, and the observations on atmospherical impressions will point out the necessity of avoiding the night air. In the section on sleep will be noticed the sedative effect of late hours on the digestive organs, and these are to be avoided. A small blister on the back, or at the pit of the stomach, continued for a considerable time, will, from the sympathy here traced out, prove a stimulus to the digestive organs. Acidity will be best counteracted by improving the state of the digestion generally; but a temporary remedy must be sought in absorbents and alkalis, warmed with some aromatic as the Pulvis Cinnam. Comp. Magnesia, with Ginger or Cinnamon, is perhaps the best antacid, as it subsequently proves laxative, and a small piece of Rhubarb chewed an hour before dinner, will excite the salivary and gastric secretions, so as to prove very beneficial to the subsequent digestive process. Indeed too much attention can scarcely be paid to the complete mastication of food, for a torpor seems to prevail through the whole secreting surface of the alimentary canal, and where any part of the tube is excited, the impulse is communicated to the whole.

For that painful affection of the stomach termed Gastrodynia, the Oxyd of Bismuth, taken in doses of four grains three or four times a day in any aromatic mixture, is certainly very efficacious.

Sect. IV.—CUTANEO-INTESTINAL SYMPATHY; OR OBSERVATIONS ON THOSE DERANGEMENTS OF THE INTESTINES OCCASIONED, OR AGGRAVATED BY ATMOSPHERICAL IMPRESSIONS ON THE SURFACE.

THERE is certainly no cause of functional disorder in the bowels so general and frequent as that resulting from external impressions on the skin, whether operating by direct sympathy, or as producing lesion of function in the stomach and liver, and thereby affecting the intestines secondarily. Suppressed perspiration, and cold or wet applied to the feet producing diarrhœa and colic, afford familiar but convincing proofs of the intimate sympathy subsisting between the organs in question. We shall therefore proceed to notice the principal diseases produced in this way.

Subsect. 1.—Enteritis. [inflammation of the bowels] This dangerous complaint is generally brought on by atmospherical vicissitudes, or cold applied to some part of the skin, during or subsequent to, a state of perspiration; it is also occasionally produced by cold drink taken when the body is heated, in the same way as inflammation of the stomach.

It is not so much my object to describe the symptoms of diseases, as to illustrate their causes, and add some observations on the means of cure. When we find a fixed pain in any part of the abdomen, especially near the navel, attended with fever, quick, but small pulse, gastric irritability, obstinate costiveness, and pain on external pressure, we may be pretty certain that there is inflammation in the *external* coat of the intestines; for when it is situated in the villous coat or mucous membrane, then it is generally attended with dysenteric symptoms. The danger need not be pointed out; the distress which is painted in the countenance of the patient is sufficiently alarming. While the warm bath, or, if this cannot be procured, warm fomentations are preparing, blood should be taken in a full stream from the arm, regardless of the *apparent* debility in the patient and pulse. If fainting occur, a relaxation in the intestinal canal will probably ensue, so as to favour the operation of *cathartics*; for on these our principal dependence must be placed after bleeding. Calomel and cathartic extract, followed by castor oil or salts are the best; but the Gastric irritability which soon comes on, causes all cathartic medicines too often to be rejected. On this account a considerable dose of laudanum combined with the cathartic has an admirable effect; especially if the warm bath, or, warm fomentations are applied at the time, so as to produce a determination to the surface, with an approach to fainting. If the bowels can be opened and kept free, with a large blister to the abdomen—the patient is safe; but till real stools are procured, the prognostic is doubtful, if not unfavourable.

It is perhaps of more importance in this, than in any other inflammation, that the great object of venæsection should be attained by the *first* bleeding; for if the inflammation is not quickly subdued, mortification rapidly advances, and the abstraction of blood only hastens the catastrophe. After a decisive bleeding, and the use of the bath with fomentations, and blisters, our chief, I might

say only reliance must be placed on purgatives. Emollient injections are of course highly useful, as they not only act as an internal fomentation, but promote the operation of the purgative medicines.

The experiment of dashing cold water on the thighs and legs, or of ordering the patient to walk barefooted on a cold pavement, cannot well apply to regular inflammation of the Peritoneal coat of the intestines. It is more applicable to spasmodic constrictions of the colon producing violent colic and costiveness. In this case, the consent between the lower extremities in particular and the intestinal canal leads occasionally to an immediate relaxation of the muscular fibres of the colon, by what Darwin terms a reversed sympathy, and is productive of instantaneous relief.

Subsect. 2.—DYSENTERY. Although this disease is by no means so common in Northern, as in Southern Climates, yet its occurrence in this country is sufficiently frequent, and its treatment so difficult as to entitle it to a considerable share of attention in this place, more especially as the nature of the disease and the principles of cure are by no means decided on by medical men. To be convinced of this, it is only necessary to glance at one of the latest treatises on the complaint in question (Harty on Dysentery, for instance) where the clashing opinions and opposite practices of modern physicians are fairly set forth, and are, in truth, admirably calculated to puzzle the inexperienced. "In the descriptions given by them of dysentery, says Dr. Harty, they scarcely agree in *any one article* excepting the *name* of the disease."—p. 17.

This is the more strange, as in the whole range of Nosology, there is not a disease more unequivocal in its symptoms, or less difficult of discrimination than dysentery. It may be almost as well described in a couple of lines as in a quarto volume. "Fever, mucous or bloody stools, accompanied with much griping, and followed by tenesmus; the alvine fœces being for the most part retained." This is the definition of Cullen, leaving out the epithet "Contagious" which he coupled with fever, but which a more extensive knowledge of the disease would have induced that great man to strike off from the definition.

The disease that approaches most nearly to dysentery is Diarrhœa, which, may always, when in a mild degree, be distinguished by the fœcal smell and appearance in the stools; circumstances which rarely take place in dysentery,

except from the effect of medicine. Severe and obstinate Diarrhœa, however, becomes so blended in nature and symptoms with dysentery, as to be with difficulty discriminated; but then discrimination is so much the less necessary, since the treatment will be similar.

The same observations will hold good in regard to inflammation of the bowels; for if inflammation of the mucous membrane of the intestines accompanies dysentery, or if dysenteric symptoms accompany, as they generally will, a decided inflammation of the villous coat of the intestines, then the treatment will be the same in both cases.

The appearances on dissection, in those who have died of dysentery, have led some authors to consider its *proximate cause* as inflammation of the mucous membrane of the intestines, but they have here, as in many other instances confounded effects with causes. Others having observed that dysentery was generally preceded and accompanied by a suppression of perspiration, concluded, that the disease was merely a vicarious afflux of fluids to the bowels, and they were in some measure right; but they stopped short of the mark. For although these circumstances for the most part take place in, and are sufficient to account for Diarrhœa, they are inadequate to the explanation of Dysentery.

Others again, from observing that rings or strictures in the colon and other parts of the intestinal canal were frequently found on dissection, set this phenomenon down as the proximate cause of dysentery; an hypothesis still more untenable than the former, as it certainly confounds cause and effect.

Our late extended acquaintance with equatorial regions, and particularly with the Eastern world, where liver and bowel complaints are so prevalent, has given rise to another theory of the disease; that it is a symptom of disordered function or structure in the liver. This assertion also was grounded on the fact, that in most of the fatal cases of dysentery in that climate, the liver was found in a deranged state, and also that in unequivocal Hepatitis there, a dysenteric state of the bowels was a very constant attendant. This hypothesis, however, is untenable; though it approaches towards the truth, inasmuch as it is very certain that the *function* of the biliary organ is invariably disordered in every case of dysentery; but still this cannot be taken for the sole cause, but rather as a concomitant effect or symptom of the disease.

The other hypotheses are equally unsatisfactory; such as dysentery being a "Rheumatism of the bowels," as maintained by Akenside, Stholl, Richter, &c. For although a metastasis of Rheumatism from the joints to the bowels may occasionally take place, as to other internal organs, yet out of some thousand cases of dysentery which I have seen, there was not a single instance of metastasis either to or from the bowels. As to Sydenham's idea of its being "a fever turned in on the bowels," (febris introversa) it is perfectly unintelligible; and Zimmerman's notion of dysentery being produced by *putrid bile*, may be accounted for by the purgative plan pursued, which by bringing down occasionally the depraved secretions of the liver and digestive organs, seemed to justify the theory he had established.

It appears to me that the reason why all writers on dysentery have failed in ascertaining the proximate cause, is, that, in fact, there is no such thing appertaining to the disease; the whole phenomena forming *a series of causes and effects*, no one state of which can be selected for what is usually termed the "*proximate cause*." Hence it is clear that the only plan of acquiring any insight into the nature of the disease, is to accurately observe the different links in the chain of cause and effect; or, in other words, to investigate the "*ratio symptomatum*" with patience and impartiality. Nor is this a fruitless task; for assuredly it is the most certain method of fixing the *treatment* on a rational and solid basis.

It is therefore necessary to begin with the *remote cause*; and here the most accurate observers are sufficiently agreed in attributing it to atmospherical impressions operating through the medium of the skin; or, in other words, to aerial vicissitudes. It is almost needless to state here, that we are treating of *genuine dysentery* uncombined with typhoid fever, or visceral obstructions, which of course will modify the nature of the disease. We are speaking of dysentery as it affects an individual or a thousand individuals without any *obvious* cause, but more particularly in Autumnal seasons, when atmospherical transitions are most frequent.—If the writings of those authors who have witnessed dysentery on a large scale, and particularly as it affects fleets and armies, be examined, we will have reason to believe that STHOLL was perfectly correct in his assertion that—"Nunquam accidisse hunc morbum vidit nisi si

corpori sudore mananti incaute admissum frigus fuerat." This observation is amply confirmed by the testimony of Pringle, Grimm, Hillary, Moseley, and various other practical writers.

The state of predisposition, and the class of people whom the disease most frequently attacks are all corroborative of the remote cause above-mentioned. "They (dysenteries) says Pringle, are always most numerous and worst after hot and close summers, especially in fixed Camps, or when the men lie wet after a march in warm weather."—And Grimm describes dysentery as chiefly affecting those—"pedibus nudis incidentibus, in conclavibus angustis, obscuris, madidis mox frigidulis, mox vehementer calefactis viventibus."

Having already explained how the operation of heat predisposes the human frame to be more readily affected by sudden transitions to cold, and having traced out the sympathies that exist between the skin and several internal organs, the way is cleared for an explanation of the *ratio symptomatum* in this important disease.

After an attentive observation of the phenomena of dysentery as it affected great numbers under my care, and also as it affected myself in person, I can confidently affirm that two functions appeared to be invariably disordered from the very beginning, and which either soon produced or were accompanied by other derangements. These were the functions of the skin and liver; or perspiration and biliary secretion. Let a dysenteric patient be accurately examined, and if these two functions be found in a natural state, at any period of the disease, unless from the effects of medicine, or when the symptoms are giving way, I consent to be termed a superficial observer. Partial sweats are sometimes seen on the surface, and occasionally an admixture of bilious matter in the stools; but these will not be considered *natural*, and excepting these, the regular perspiration is suppressed, and the healthy secretion of the bile stopped.

These then appear to be the two first links of that morbid chain which connects the remote cause with the ostensible form of the disease; and if this chain be severed by an early restoration of the two functions alluded to, the disease will be checked. Although an accurate observer might detect, in his own frame at least, these nascent movements, and by prompt measures extinguish them, yet we can

rarely be consulted at such an incipient stage of the disease. Some other links of that chain of causes and effects denominated "*proximate cause*" are now to be noticed.—The equilibrium of the circulation becomes disturbed. In consequence of the torpor or contraction of the extreme vessels of the surface, the volume of blood is directed to the interior, and the balance is still further broken by the check which the portal current meets in the liver, from a corresponding torpor in the extreme or secreting vessels of that organ; the effect of which is that the plethora in the cæliac and mesenteric circles is now greatly augmented and febrile symptoms commence. The perspiration being stopped, a vicarious discharge of mucus and acrid serum is thrown from the extremities of the turgid mesenteric vessels upon the internal surface of the intestines, which by this time is in a state of irritability.

This circumstance of one part being in a state of morbid irritability, while a neighbouring or remote part is torpid, has not sufficiently attracted the notice of physicians, since the days of the illustrious Darwin, whose keen penetration contributed so much to unlock the secrets of nature.

I have long concluded that, as in the grand class of febrile complaints an *inequilibrium in the balance of the circulation* bears a conspicuous share in the phenomena of those diseases, so in a large class of what are termed nervous or convulsive diseases, an *inequilibrium of the balance of excitability* or vitality, is the prominent feature in the ratio symptomatum. In febrile complaints, both these irregularities almost invariably take place, and their association appears as a general law of nature. Instead of asserting with Brown, that each individual has a given portion of excitability assigned, at his first formation, it would perhaps be more conformable to accurate observation, if we said, that in each individual, when in health, there is a certain quantum of excitability, vitality, or tonicity diffused in certain proportions through the various organs and other parts of the human frame, together with a certain power of restoration by sleep, rest, &c. when exhausted: and that various causes conspire occasionally to disturb this equilibrium, by throwing an undue share of excitability, tonicity, or irritability on one part, while another or other parts are deprived of their natural quantum of the same principle. This reasoning will be more fully illustrated hereafter, but in the mean time, the disease we are treating of affords a fair example.

Thus there being clearly a torpor of the perspiratory vessels on the surface, and, by sympathy, of the secreting vessels in the liver, an undue degree of excitability is thrown on, or accumulated in the intestinal canal, and the disease begins to exhibit itself unequivocally, by the uneasiness in the bowels, the frequent desire to stool, and the mucous discharges. We may now plainly perceive how all those *consequences* which have so often passed for *causes* can arise. If the plethora be great, blood itself will be poured from the mouths of the distended mesenteric vessels; hence ulceration and inflammation may ensue. If any hardened fæces lurk in the cells of the colon, they will be grasped by the irritable circular fibres of the intestines, and rings or strictures will augment the tormina and griping in the bowels.

In this situation nature evidently attempts to restore by reaction, the balance of the circulation and excitability, with the cuticular and hepatic functions; but she rarely succeeds, her abortive efforts too often aggravating, instead of relieving the symptoms. Thus we sometimes see a partial, ill-conditioned sweat on the surface, which is productive of no benefit; while from the liver an occasional secretion of vitiated bile throws the irritable intestines into painful contortions, and then the tormina and tenesmus are insufferable!—Nature to say the truth, is but a sorry physician in dysentery. "In hoc enim (says Sir George Baker) corporis affectu *aliquod* certe in *medicina* opus est, haud multum in Naturæ beneficio." Where she ultimately gains her end, it is where the local plethora is reduced by the discharge from the mesenteric vessels, without occasioning much organic derangement in the bowels. This being effected, she more easily restores the equilibrium of the circulation and excitability with the functions before alluded to. But in a great majority of cases, when the disease is violent, her exertions either hasten the fatal catastrophe, or produce such lesion of structure and function in the Chylo-poietic viscera a sinduces a tedious chronic state of the complaint, which is very difficult to manage.

The febrile symptoms will, at first, be in proportion to the *general* disturbance in the balance of the circulation and excitability; they will afterwards be kept up, or modified by the extent of the organic derangement sustained during these oscillations. The discharge of blood by stool, on the other hand, appears to be proportioned to the *local*

plethora in the portal and mesenteric circles, and to the permanence and degree of torpor in the liver occasioning that plethora. Hence we see that in tropical climates, where the biliary organs are so generally deranged, either in function or structure, dysentery is almost constantly attended with great discharges of blood from the bowels, in consequence of the check which the portal circulation meets in the liver; and hence also the liver itself, from a state of congestion and torpid secretion, runs suddenly, and with very few premonitory symptoms, into a state of suppuration or irrecoverable disorganization. *See my Essay on Tropical Climates, and Dr. Robertson's Medical Topography of New Orleans in the same.*

This doctrine if impartially considered and fairly applied will, I think, satisfactorily account for the greater number of phenomena attendant on dysentery, and what is of more importance, it will point to the surest means of effecting the cure, a subject on which we are now entering.

The practitioner who has set down an inflammatory state of the intestines as the cause of dysentery, on finding that besides the tormina and tenesmus there is a considerable discharge of blood with the stools, which consist of little else than that and mucus, bleeds copiously as his paramount measure, and prescribes laxatives or sudorifics as auxiliaries. He finds that by these means the flow of blood in the stools is much reduced—that the tormina are mitigated, and that something more than mere mucus comes away after the laxatives, with considerable relief to the patient. Nothing can be more plain than the *rationale* of this benefit, on the principles already stated. Venæsection lessens, at once, the plethora in the mesenteric vessels, and consequently checks the effusion from their mouths. A general relaxation throughout the whole system follows—intestinal strictures give way—Scybala and fæcal accumulations pass off, and nature, thus relieved, attempts a restoration of equilibrium in the circulation and excitability, evinced by some degree of action in the extreme vessels on the surface, and by a mitigation or cessation of the pain and irritability of the bowels.

Thus far the physician has greatly assisted the spontaneous efforts of the constitution; and, if the latter be equal to the task of keeping things in this salutary train, all will be well—if not, the morbid state returns, and with it a fearful debility which paralyses his arm and embarrasses his mind!

He who confides in purgatives [and a great number do, who know little of the complaint] from an idea that stricture and retention of the natural fæces are the essence of dysentery, treads on very tender ground. He undoubtedly assists nature in her most ostensible but dangerous method of cure. If, by a course of purgatives, he can lessen the local plethora, and excite the healthy action of the liver (both of which objects, evacuating medicines, particularly of the mercurial kind, are, without doubt, calculated to effect) before any material injury takes place in the intestinal canal, he will succeed; because the general balance of the circulation and excitability will be soon restored, when the portal and mesenteric plethora is removed; and the sympathising function of the skin will participate in the healthy action of the liver. But in a large proportion of cases, he will have the mortification to find, that such organic derangements occur, before he can obtain his object, as will either hasten the fatal termination, or prove a fruitful source of misery in the chronic stage of the disease, which is but too sure to ensue.

The rationale of the emetic and sudorific plan on the principles in question, is sufficiently obvious. They not only determine generally to the surface, but, by exciting the healthy action of the liver, they locally relieve the mesenteric plethora (a circumstance which their employers did not calculate on) and thus restore the balance of the circulation and excitability with the functions of perspiration and biliary secretion. But however applicable this plan may be to sporadic cases of dysentery in private life, or a well regulated hospital, it is impracticable in fleets and armies, particularly beneath the torrid zone, and what is of greater consequence, it is too often inefficient.

The mercurial practice is of more easy application; and the surprising relief which so generally follows the excitement of ptyalism was sufficient to produce a strong bias in favour either of some specific power in that remedy over the disease, or that the liver was the primary seat of dysentery. But the empirical use of mercury is objectionable, inasmuch as the practitioner is occasionally foiled by his inability to raise a ptyalism, when his resources are gone, or at least the most valuable period of time is elapsed, and inflammation, ulceration, or even gangrene may supervene.

Thus we see that any of the above methods when set up as a *principal*, to the exclusion of others, is attended with

inconvenience, and (excepting perhaps the last) with repeated failures, particularly in hot climates, while unskilful combinations, or a wild succession of them, without any controlling principle which is ever to be held in view, would be worse than an obstinate adherence to any one.

The *principle*, then, which I propose to govern us, is, "*the restoration of healthy perspiration and biliary secretion, with an equilibrium of the circulation and excitability.*" To effect this I shall point out a plan which I have put to the test of experience in almost every parallel of latitude, and with as perfect success in this, as in hot climates. A plan somewhat similar has been tried by numbers of respectable practitioners, though not under the guidance of any fixed principle, nor involving such provision against the various symptoms of the disease, as the simple one I am now to detail.

The practice I would recommend from much experience is, the introduction of mercury in comparatively small doses, either alone or combined with an opiate, or, which is preferable, with an opiate and diaphoretic, in such a manner that at least twenty-four grains of calomel (I have lately used the Hydro-Calomel) or even more, if the symptoms are urgent, may be exhibited, in divided portions, and at three, four, or six hour intervals, during the course of the day and night. In the same space of time, from two to four grains of opium, and from ten to fifteen grains of antimonial powder may be administered with advantage, in combination with the calomel. One or two doses at least, should be given before a laxative is prescribed; and an ounce or more of castor oil is an admirable medicine for this purpose. It will often bring away hardened fæcal, or vitiated bilious accumulations, when the irritability of the intestines is previously allayed by the calomel and opium, in that manner soothing the tormina and tenesmus. But although it be repeated every day, it is never to interrupt the progress of the main remedy. When blood appears alarmingly in the stools, whether the fever run high or not, bleeding may be employed without the smallest apprehension of the bugbear debility. Emollient oily glysters may also occasionally be thrown up to lull the tenesmus. A flannel shirt is to be put on, and a bandage of the same applied round the abdomen, which is to be rubbed once or twice a day with a liniment composed of mercurial ointment and tincture of opium well incorporated. By a steady

perseverance in this plan for a few days, the mouth will become sore and every bad symptom vanish.

Thus in less than a page, is detailed a practice which, being founded on principle, is applicable to almost every stage and degree of dysentery (unless it has gone beyond the reach of medicine) and contains within itself, resources against most emergencies.

While we proceed directly towards our final object—The restoration of the cuticular and hepatic secretions, with their accompaniments, an equilibrium in the balance of the circulation and excitability, by a combination of mercury and diaphoretics, medicines which clearly produce those effects, we lull the pain and relax strictures, at the same time, by the opium. To guard against inflammation of the intestines and its consequences, we have the lancet on one side—to carry off diseased or irritating accumulations, we have laxatives on the other; while the fever, being merely symptomatic, will cease with the cause. For the successful issue of this treatment, *in general*, I appeal to the rigid experience of others, perfectly conscious of its matchless efficacy from my own.

I am now to mention a practice which, in some cases of emergency, I tried with unexpected success, and which was tried by a few others without any communication of ideas, and with similar results. It consisted in the exhibition of submuriate of quicksilver in scruple doses twice or three times a day, without any other medicine, and which was found by myself and others to be unproductive of griping or Hypercatharsis; on the contrary, it almost invariably eased the tormina and lessened the propensity to stool, bringing on ptyalism sooner than any other plan of smaller and more frequent doses. In one or two instances, however, it produced great nausea and sickness at stomach, with spasmodic affections of different parts of the body, which were soon removed by an opiate combined with a diaphoretic. Having given the most authentic proofs of the truth of the above statements in my Essay on hot climates, I shall not adduce them here; but I may add that I have, in several instances, pursued the same plan in dysenteric cases occurring in this country, and the same has been tried by others, at my suggestion, with much felicity of result. I did not indeed adopt this practice *generally*, being quite satisfied, in ordinary circumstances, with the plan before detailed; but whenever I had occasion to push boldly on for ptyalism, in cases where time appeared extremely

precious, and when the symptoms were such as indicated the danger of rapid destruction of organization internally, I hesitated not to exhibit calomel in scruple doses [an experiment I first tried on myself] which I found by repeated trials to sit easier than either a larger or smaller quantity of that medicine—a curious, but a certain fact.

It may here be proper to notice some particular remedies which have been used in dysentery.

Opium has been highly applauded and unconditionally condemned. I have no doubt, but that both its admirers and condemners are equally deceived. The *former* in attributing all the success to the opium, when it was principally owing to the combination of that drug with others of a diaphoretic or purgative nature; the *latter* in exhibiting opium uncombined, which will most indubitably be injurious; whereas its junction with other medicines which determine to the surface and improve the hepatic and intestinal secretions, would be found to give the most decided ease and efficacy to their powers.

I can therefore state from unequivocal experience, that opium, in combination with calomel and a diaphoretic, will be found an important adjuvant; and, excepting in cases where the most decided marks of intestinal inflammation prevail, (which should be removed by the lancet) its use can rarely be contra-indicated.

In warm climates, and particularly in secondary attacks, where the weakened tone of the digestive organs appears to keep up the disease; the diluted nitrous acid has proved useful, taken in doses of a drachm every twelve hours in barley-water or gruel, which will be found to diffuse an agreeable sensation of warmth through the whole line of the alimentary canal. An infusion of quassia, however, or some light bitter should be immediately commenced on leaving off the more active medicines, and continued till the stomach and bowels have recovered their vigour.

It is hardly necessary to remark, after the principles which I have laid down, that flannel next the skin is indispensible; and that the most scrupulous attention in avoiding dews, damp night air, or sudden atmospherical vicissitudes, is necessary during convalescence, to prevent a relapse. Where the patient's circumstances will permit, the tepid bath every evening may be employed with the most decided advantages; it will not only bring the circulation to the surface, but take off that morbid irritability of the bowels which tends so much to keep up the disease.

In no disease is patience, on the part of the sick, a greater virtue or more calculated to forward the good effects of medicine, than in dysentery. If obedience be paid to every call of nature, the straining which ensues is highly detrimental, and I am convinced, in many cases, augments the discharge of blood—every motion of the body, indeed, increases the desire to evacuate. As little else than mucus and blood comes away in four efforts out of five, we should endeavour to stifle the inclination to stool, and, as I know by personal experience, we shall very often succeed; for the tormina go off in a few minutes, and by these means we elude the painful tenesmus which continues so long after every fruitless attempt at evacuation. This circumstance, though apparently of a trifling nature, is of considerable importance, though it is little attended to, either by authors or practitioners.

The diet in dysentery must, of course, be of the most unirritating and farinaceous nature; such as sago, arrow-root, rice, &c. A very excellent dish for chronic dysenterics, is flour and milk well boiled together, which, with a very little sugar and spice is highly relished by the debilitated patient.

But there is one important remark which ought to be strictly attended to, in this, and indeed in every febrile complaint, whatever may be the organ most affected; namely that when convalescence takes place, the appetite too often outstrips the digestion, and so do chylification, and sanguification exceed the various excretions, so as to occasion a dangerous inequilibrium between assimilation and secretion; the consequence of which is, that the weakest viscus, or that which has suffered most during the previous illness, becomes overpowered, and relapse ensues. This is the great error of inexperience, and it is generally seen too late. I appeal to clinical observation for the truth and importance of these remarks.

In chronic dysenteries, and particularly among people who have returned from hot climates, the treatment is exceedingly difficult and tedious. In such cases all those precautions and directions which will be found detailed under the head of "*Chronic Hepatitis*," with which indeed the complaint in question is usually associated, are to be strictly attended to, and particularly the use of flannels, and opiates combined with laxative diaphoretics.

Subsect. 3.—Diarrhœa. Although a common diarrhœa may be easily distinguished from a common dysentery, yet when the former is violent or long continued, it blends by such imperceptible degrees with the latter, as to be with much difficulty discriminated. This indeed is not of much importance, since it will be found that the remote cause is the same in both cases, and consequently the treatment will be nearly similar.

It is not my intention to dwell on the various causes which give rise to a temporary diarrhœa, when acrid or disagreeable substances irritate the intestinal canal, as after a debauch, or where ill-conditioned bile, acidity, drastic purgatives or translated morbid matter, or diseases from other parts keep the bowels in an undue degree of irritability. In these cases it is plain that the offending matter must be removed by laxatives alternated or combined with opiates, aromatics, absorbents, &c. till the first passages are cleared, and the morbid irritability removed. But I would here notice that diarrhœa which is by far the most frequent of occurrence, originating in partial suppression of the perspiration, and very often from cold applied to some part of the surface, and particularly the feet.

Here a torpor of the skin is followed by an increased action of the mucous membrane of the first passages, with some slight inequilibrium in the balance of the circulation, evinced by the paleness of the countenance, coldness of the feet, and sense of chilliness on the surface, which so generally accompany bowel complaints; while an evident determination of fluids to the portal and mesenteric circles is evinced by the increased secretion from the internal surface of the intestines, and increased irritability of the parts. Now it is quite evident, both from reasoning and experience that when the irritability arises to that degree which produces rings or strictures in the intestines, so as to retain the fæces; and when the balance of the circulation is so far broken as to occasion blood to be poured from the portal and mesenteric vessels into the cavity of the intestines, we have in reality dysentery. In the method of treatment reason and experience coincide, and elucidate each other.

We have only to poise the balance of the circulation and excitability, by restoring the functions of the skin and hepatic system, by the means already pointed out in dysentery, and we shall soon see our efforts crowned with success.

Subsect. 4.—*Cholera Morbus.* Although this rapid and distressing complaint might perhaps, with stricter propriety be ranged under the "CUTANEO HEPATIC SYMPATHY," which is shortly to be considered, yet, as the whole line of the intestinal canal is generally affected, it may come in here without any violation of order.

That an "overflowing of bile" has, in all ages, been considered as the cause of Cholera Morbus, is known to those who are conversant with the medical literature of ancient and modern times. "Bilis sursum ac deorsum effusiones," says Hippocrates; "Bilis supra infraque erumpit," says Celsus, and "Cholera Morbus, says Dr. Saunders, may very properly be considered under the head of those diseases which depend on the *increased secretion* of bile."

Of the very few passages in my work on tropical climates, which have given offence to criticism, that, in which I have attempted to controvert this generally received opinion, has been most severely handled.* But as the critic has not, in my opinion, undermined any of my positions on the subject, I shall beg leave to remain "tenax propositi."

From a very excellent description of the disease, as it appears in this country, contained under the word, in Rees's Cyclopædia, I shall take the following passage for my text:

"The attack of this complaint is generally sudden. The bowels are seized with griping pains and the stools which are at first *thin and watery*, as in common diarrhœa, are passed frequently. The stomach is seized with sickness, discharges its contents, and rejects what is swallowed. In the course of a *few hours*, the matter vomited, as well as that discharged by stool, appears to be *pure bile*, and passes off both ways in considerable quantities. The griping pains in the intestines now become more severe, in consequence of the extraordinary irritation of the passing bile, which excites them to partial and irregular spasmodic contractions. These spasms are often communicated to the abdominal muscles, and to the muscles of the lower extremities. The stomach is also affected with considerable pain, and a sense of great heat, in consequence of the same irritation. There is usually great thirst, and sometimes a severe head-ache, from the sympathy of the head with the stomach. The pulse becomes small and frequent; a great

* Vide New Medical and Physical Journal, September, 1813.

degree of debility, languor, and faintness, amounting even to syncope, speedily comes on; sometimes attended with colliquative sweats, coldness of the extremities, and "such like symptoms, 'says Sydenham,' as frighten the bye-standers, and kill the patient in twenty-four hours."

Now it does appear something singular, to me at least, that if an "increased secretion of bile" were the *cause* of the disease, we should see nothing of it till "*a few hours*" after the *effects* become obvious! Where is this increased secretion all the time? Not in the stomach, for it "discharges its contents and rejects what is swallowed," long before; it is not in the intestines, for the stools are at first thin and watery." At length, however, "pure bile" appears, and it is accused of being the *cause* of all the mischief.

It is true, that we find this disease most prevalent in the months of August and September; a season when the high range of temperature is apt, without doubt, to occasion an increased action in the hepatic system. But are there no particular attendant circumstances? Yes, says the author of the foregoing passage, "it has been remarked, that both in hot climates, and in the hot seasons of mild climates, *occasional falls of rain* have been particularly *followed* by an "epidemic cholera" ibid. Indeed! Can a fall of rain be supposed to *increase* the secretion of bile? But again "In some places it is probable that the heat of the season may give only a *predisposition*, and that certain ingesta, *sudden changes of temperature*, or other causes, in this state readily excite the disease." Can these causes, I say again, be considered as *increasing* the secretion of bile? But let us return to Dr. Saunders. "At other times, says this eminent physician, it is evidently connected with a *sudden change of temperature* in the atmosphere during those months (August and September) or brought on by drinking *cold* liquors, or by any thing else that *suddenly chills the body*, especially when overheated by exercise or labour."—*On the Liver, p.* 181.

As Dr. Saunders throughout his treatise asserts (and truly) that *heat* acts as a spur on the secretory vessels of the liver; and as the above passages are in diametrical opposition to this doctrine, he attempts not to explain the contradiction. But an application of the principles which I have laid down in this work, reconciles these apparent inconsistencies, and unties the gordian knot.

The autumnal season of the year, in which cholera appears, is not merely remarkable for a high range of atmospherical heat, but for sudden transitions from heat to cold, especially in the evenings. If therefore we consider that the functions of the skin and liver are *inordinately* increased during the heat, and of course rendered more liable to a check on the application of cold, we shall easily conceive how a sudden atmospherical vicissitude, at this period, by inducing a torpor of the perspiratory vessels on the surface, and secretory vessels in the liver, will unhinge at once the balance of the circulation and excitability, and that while a great plethora is induced throughout the portal and mesenteric circles, the torpor in the liver is succeeded by an increased irritability of the stomach and intestines; and that this increase of excitability in one organ or set of organs, while the excitability of others is decreased, is the mean by which nature effects the restoration of the balance. In short the very action of vomiting determines the blood, as is well known, to the surface, and restores the suspended functions of perspiration and biliary secretion. It is at this time that a deluge of bile naturally bursts forth, as the *consequence* of the previous suspension of secretion in the liver, and turgescence of the mesenteric vessels; and thus we see that the very last link in the chain of *effects*, and that too, a *salutary* one, has, for ages, been set down as the cause of cholera, "*increased secretion of bile.*"*

This explanation shews us also, that a modification of the same general causes which in one person produce dysentery, will in another give rise to cholera; the latter indeed appearing to be a violent orgasm by which nature endeavours to overcome the disease or perish in the attempt, while in dysentery the "vis medicatrix naturæ," is more slowly exerted, though perhaps not with better success.

The disease in question is said to be occasionally produced by violent fits of passion, and also by acrid or irritating substances taken into the bowels. In these cases, it is equally clear that the increased secretion and discharge

* Since the first edition of this work, I have been gratified by seeing the following passage in one of the ablest works of the present day. "So far as my observation and reading have extended, there is no author ancient or modern, who has taken so correct a view of the nature of Cholera Morbus as Dr. James Johnson; and considering his illustration of that disorder among the most successful efforts of modern pathology, I refer the reader to his work on Tropical Climates."—*Armstrong's Illustrations of Scarlet Fever, &c. p.* 87.

of bile are merely the consequences of the vomiting and general irritability of the primæ viæ and hepatic system from the offending matter; of course, it would be absurd to attribute the phenomena to bile. It is to be remembered, however, that the increased secretion of bile, during a high range of temperature, renders the intestinal canal more irritable than usual, and the secretion itself more easily checked; which check, at the beginning, occasions the flow of bile to be more copious towards the acme of the disease.

The spasms can only be accounted for by the great disturbance in the balance of the circulation and excitability, particularly of the latter, which, in general, is followed by convulsive or irregular motions, as in Epilepsy, &c. They cannot be attributed to bile, since I have clearly proved that in the worst cases of cholera morbus, named *Mort de Chien*, the patient is often carried off amid the most violent spasms, where not a drop of bile is either vomited or found on dissection in the primæ viæ.—*Vide Curtis on the Diseases of India.*

We are so rarely called in to cholera, before reaction has commenced, that our principal indication is to moderate the orgasm by which nature is effecting the cure; but which is sometimes so violent as to destroy the life of the patient in the attempt. The plan of giving warm water or even emetics to unload the first passages, was probably founded on the erroneous opinion that the lurking *collections* of bile were the sources of the mischief. But that this is not the case may be proved from the fact, that at the beginning the appearance of the bile is *natural*; but in proportion as the disease continues and becomes dangerous, the discharges assume a darker and more vitiated hue, till blood appears to be poured from the hepatic ducts, in company with such acrid secretions from the liver and digestive organs as contribute to the destruction of the parts through which they pass. Where the disease is not violent, mild tepid drinks, at the beginning, may not be injurious; but emetics can rarely be taken with impunity. From experience in warm climates, where the disease is infinitely more terrific than here, the best practice will be found to consist in allaying the gastric and hepatic irritability by pretty large doses of solid opium, combined with calomel; (say for a grown person from five to ten grains of calomel, with two or three of opium) and to immerse the patient, as soon

as possible, in the warm bath, which will bring the circulation to the surface, restore the balance of excitability, and check the vomiting and purging. As an auxiliary, a tea-spoonful of *Tinct. Camph. Com.* may be swallowed frequently, which being expended about the fauces and œsophagus, gradually produces a sedative effect on the stomach; and to produce the same on the intestinal canal, a couple of drachms of laudanum may be exhibited by clyster. As soon as the latter object is obtained, a mild laxative will assist the calomel in carrying off any diseased secretions, which might have been formed during the paroxysm, so that this invaluable medicine will thus be found to answer a double purpose, to wit, that of allaying the gastric irritability, in the first instance, and in the second, of correcting and evacuating any morbid secretions in the line of the alimentary canal.

The foregoing discussion respecting the proximate cause of cholera morbus, will not be deemed speculation, if it elucidates a remedy (the warm bath) which has seldom been employed; but which I have repeatedly seen productive of the best effects, both in tropical and temperate climates. In hot countries, it is often fatal, from the violent oscillation of the blood from the surface to the interior, and by the great inequilibrium which takes place in the balance of excitability, in the system. The extreme vessels on the surface and those of the liver are struck completely torpid, as is evinced by the death-like paleness and shrinking of the exterior, while the abdomen, and particularly the epigastrium, is preternaturally tumid and tender, in consequence of the extreme turgescence of the mesenteric vessels, and all those which form the portal circle, as dissections have repeatedly shewn. All this time, where the disease is fatal, no bile is secreted; but in proportion as this fluid, (which has been considered the cause of the disease) appears, so much greater is the chance of recovery for the sufferer.*

Although the warm bath is found to increase the secretion of bile, when the liver is torpid, as will hereafter be shewn, in consequence of the sympathy between the cutaneous and hepatic vessels; yet, in cholera morbus, it will check the *inordinate* secretion of bile by restoring the circulation

* Vide the section on mort de chien in my work on Tropical Climates, and Curtis on the Diseases of India.

and excitability of the surface, and of course relieving the orgasm of the chylopoietic viscera.

As a tendency to relapse occasionally follows an attack of this disease, it is necessary to restore the tone of the intestinal canal, and lessen irritability by bitter infusions, particularly of columbo, with gentle opening medicines, that may carry off any disordered secretions, while all irritating substances in diet are to be avoided. But above all a minute attention is to be paid to the functions of the skin, by flannels or other warm clothing, while the night air and sudden alternations of temperature are to be strictly guarded against.

Sect. V.—CUTANEO-HEPATIC SYMPATHY; OR OBSERVATIONS ON THOSE DERANGEMENTS OF THE HEPATIC SYSTEM, WHICH ARE INFLUENCED BY, OR CONNECTED WITH THE ABOVE MENTIONED SYMPATHY.

DERANGEMENTS OF THE BILIARY ORGANS.

"From serving as the point of termination for the abdo-
"minal system of black blood, as the lungs do for the general
"system of the same description, the LIVER derives a
"degree of importance, which does not belong to any other
"secretory organ. The organ exists in almost all classes
"of animals, even where some other important viscera are
"very imperfect. Many of the passions affect it: some of
"of them have an exclusive effect on it. It performs in
"disease as prominent a part as any of the important vis-
"cera of the economy. In hypochondria, melancholia, &c.
"its influence is very considerable. We know how easily
"its functions are disturbed. If it be unconnected with
"many affections called bilious, and which have their seat
"in the stomach, it is certainly essentially concerned in the
"greater part. The yellowish tint of the face, in many of
"these affections, must be produced by the same cause,
"which, in a higher degree, produces jaundice. The
"affections of this organ, observed after death, are more
"numerous than those of any similar part. It is a matter
"of common observation, that this organ has a great influ-
"ence on the temperament. Its predominance communi-
"cates to the external habit of the body, to the functions,
"to the passions, even to the *character*, a peculiar tint,
"which was observed by the ancients, and the reality of
"which has been confirmed by modern observation."—
BICHAT.

The more we study and observe the phenomena of diseases, and the rationale of their treatment, the more fully will we be convinced that BICHAT has not overrated the importance of the biliary organ in the animal economy.—Great and numerous as are the morbid alterations of *structure*, which take place in the liver, they sink into comparative insignificance, when compared with the derangements of *function*, in the same organ. Yet strange as it may appear, the attention of the medical world, till very lately, has been directed chiefly to the organic, in exclusion of the functional affections of the hepatic system. Even now, if the right hypochondrium is soft and the eye untinctured, nine in ten of our medical Nestors are utterly at a loss to conceive how any affections of the *liver* can exist; and if any purgative or mercurial medicines be suggested, immediately talk of "Theories," "Prejudices," "Hypotheses," &c. the modern ignes fatui of the medical world! Happily for the patient, as well as for the practitioner, the success which attends the man who thinks and reasons on what he does, will very generally be conspicuously superior to that of the routinist.

For the sake of pursuing more freely the less beaten track in this investigation, I shall pass hastily over the more obvious *organic* derangements of the liver, before entering on the wide field of functional disorder.

Subsect. 1.—*Acute Hepatitis.* The liver, like the lungs, or any other internal organ, is liable to active inflammation, though, in this country, such form of disease is comparatively very rare, for reasons which will be hereafter adduced. Like other inflammations, it is generally ushered in with some degree of shivering, followed by increased heat, and other symptoms of pyrexia, with pain in the region of the liver. From the size of the organ, however, and its contiguity of surface with so many other important parts, the seat and kind of pain vary so considerably, as often to occasion some doubts as to the real organ affected. Sometimes the least degree of pressure under the margin of the ribs will give exquisite pain, while at others (as was once my own case) the seat of the pain, and also of the enlargement, will be in the centre, or even to the left of the epigastrium. When that part of the liver is inflamed which lies in contact with the diaphragm, the concomitant cough and pain on inspiration, may lead to a suspicion that the pleura or lungs are the seat of the disease.

The pain in the shoulder and the *decubitus difficilis* are extremely fallacious tests, inasmuch as in some violent hepatic inflammations, there is no pain in the shoulder, and the easiest posture is on the back, as was also my own case. A pretty general attendant on Hepatitis, both acute and chronic, is a scalding in making water, which appears to be occasioned by bile, and has not, I believe, been noticed by authors.

Although a yellow suffusion on the skin or eyes indicates obstruction in the liver, its absence is no proof that inflammation of that organ does not exist.

At the very commencement of the disease, the diagnosis of Hepatitis from inflammation of any contiguous part may not be of vital importance, since the speedy reduction of vascular excitement by copious venæsection is the main spring to be acted on in either case. But in the choice of purgatives, much discrimination is necessary; for however the modern scholastic physiologist and routine physician may laugh at the idea of cholagogues, hydragogues, &c. Those few who personally observe the effect of purgatives on the fæcal discharges, have no doubt about the peculiar power which some medicines have in evacuating particular fluids, from their disposition to act on certain sets of secreting vessels.

On this account, it will be advantageous to ascertain hepatitis, and distinguish it from inflammation of surrounding organs. It has been suggested that a gradual inspiration will not augment the pain of hepatic, as it does of pulmonic inflammation; and that in the former the tenderness on pressure, under the margin of the ribs, will be much more sensibly felt; it is also remarked that whereas the cough is at least coeval with the pain in pneumonia, it generally succeeds it in hepatitis.

From gastric inflammation, it may be distinguished by the absence of that great irritability and sensibility which render inflammation of the stomach so distressing and evident.

The strong febrile symptoms and various other circumstances will easily distinguish inflammation of the liver from spasm of its ducts. The state of the bowels too, will greatly assist the diagnosis; for in all inflammatory states of the liver, and particularly of the parenchymatous substance, the bowels are either constipated or dysenteric, and the appearance of the fæces will always indicate a

greater derangement of the biliary secretion, than in inflammation of any contiguous organ. Another circumstance, unnoticed by authors, is the state of the mind, which in hepatic inflammation, both acute and chronic, is more perturbed than in almost any other inflammation, excepting of the brain itself. This results partly from a direct sympathy which exists between the head and liver, but principally from a suspension or derangement of the biliary secretion, which will hereafter be shewn to exert a peculiar influence on the mental functions.

The practitioner who in conformity with the rules laid down by authors, prescribes saline cathartics in hepatic inflammation, upon the score of their producing many liquid discharges, without irritating, will err most egregiously. In truth, the comparative rarity of the disease in this country must incapacitate all ordinary practitioners, who have not seen it on a large scale, and especially in the eastern world, from appreciating the merits of particular remedies, in the disease in question.

Indeed acute inflammation of the substance of the liver is very uncommon in this country; though in the inflammation of its membranes, the parenchymatous structure must, of course, in some degree always participate.

The peculiarity of the circulation in the hepatic system, causes the inflammation and diseases of the biliary organ to assume a character, and require a treatment that are, in some measure, specific.

However rapidly the tone of the whole system be lowered by large and repeated bleedings, both general and topical, yet, till the healthy secretion of the biliary organ be restored, which cannot be completely effected by the above means, the patient is in danger of at least infarctions, if not suppuration in the liver. That mercurial preparations have the effect of exciting the secretory vessels of this organ, is as certain as that they increase the flow of saliva from the glands of the mouth; and that, too, totally independent of their cathartic powers. Indeed their action on the biliary gland is weakened or diverted if they produce a full cathartic effect themselves, or are conjoined with other medicines which operate in this way. He therefore who will most successfully combat this disease, will endeavour, first to check the inflammatory action, as much as possible, by copious venæsection from the arm, and scarifications or leeches succeeded by blisters to the side, while mercurial

purgatives are employed to clear the whole line of the alimentary canal. When by these means the vascular excitement is reduced to a certain level, which point is indescribable by words, and can only be judged of by experience, then a restoration of the secretion in the organ will be the surest safeguard against future lesion both of structure and function in this important viscus.

It is true, that if we attend only to present relief, without bearing in mind the future sufferings of the patient, we may succeed well enough in subduing the acute Hepatitis of this country, in the same way we subdue pneumonia; but to restore the organ to its proper function, a certain period of the inflammatory attack is to be chosen, when the judicious exhibition of mercurials conjoined with antimonials, or even opium will have the most happy effect.

As the stomach, and sometimes the bowels are in a state of morbid irritability, the Hydro-calomel, is a good preparation of mercury, if taken in three or four grain doses, every three or four hours, conjoined with a grain of Pulv. Antimonialis, and if necessary, a quarter or a half a grain of opium. If by these means a mild diaphoresis is brought out on the surface, and bile is brought down in the stools, every thing is in a favourable progress. That a hurried secretion of ill-conditioned bile occasionally takes place in acute Hepatitis, I have often had occasion to observe; but in general, even in this species, there is a deficiency of bile, apparently from the thinner parts of the fluid being quickly taken up by the absorbents, during the inflammatory state of the organ, while the more viscid parts remain gorged in the pori biliarii and biliary ducts. Hence the object of purging is twofold; first, to reduce the plethora of the portal circle; and secondly, to clear the tubes of the liver and to restore its secretory office.

From these considerations, the propriety of keeping up a due action in the liver and digestive organs, for some time after any degree of active inflammation, will be sufficiently obvious; and for this purpose, small doses of calomel and tartrite of antimony conjoined with the Extract. Colocyn. Comp. will answer better than almost any other remedies. Their operation should be limited to one or two copious stools in the twenty-four hours, which, when effective, will be succeeded by peculiarly agreeable sensations and freedom of spirits, a sure criterion of their salutary influence on the hepatic system in particular. To these admonitions

may be added the strict necessity of avoiding the remote and exciting causes which brought on the disease, and which are now to be noticed.

Subsect. 2.—Causes of Hepatitis. The predisposing and exciting causes of acute Hepatitis are, many of them, the same as those which are stated under the head of pulmonic and other visceral inflammations; for instance, a plethoric habit, and the application of cold when the body is heated or fatigued. But there are some which are more peculiarly connected with hepatic than other inflammations. Of the predisposing, may be mentioned the sex and temper. Acute inflammation of the liver is much less common in women than in men, and among the latter the irritable or *choleric*, as was observed by the ancients, are more especially liable to hepatitis; another corroborative proof of the close sympathy which exists between the mental and hepatic functions, as will be more fully shewn hereafter.

The exciting causes may be divided into external and internal. Authors, and particularly Dr. Saunders, have set down atmospheric heat as a stimulus which acts particularly on the hepatic system, deranging its functions, and occasioning, especially in hot climates, inflammation of the biliary organ. I have shewn at great length, in my Essay on Hot Climates, that the stimulus of atmospherical heat is communicated from the surface to the hepatic system through the medium of the *Cutaneo-Hepatic Sympathy*, first investigated by myself. I have there also shewn that although a high range of temperature deranges much the biliary secretion, it is generally owing to sudden transitions of temperature that inflammation of the liver is brought on. It may be very easily conceived how this happens. A high range of temperature by augmenting the cutaneous and biliary secretion, debilitates the vessels by which these processes are carried on, and renders them more easily struck torpid on any sudden application of cold; the consequence of which is a temporary obstruction to the free transmission of blood from the portal to the general circulation, the frequent repetition of which is the paramount source of hepatic inflammation, especially in hot climates.

In this country, among the internal exciting causes of hepatic inflammation, the ingurgitation of inebriating liquors, and particularly ardent spirits, has been always ranked foremost; but I am convinced that the acute species of the disease now under consideration, is seldom brought

on in this way, though chronic derangements, particularly of *function*, are, in a great measure, occasioned by those injurious potations, as will be explained hereafter.

Partial applications of cold or wet, when the body is heated, or over fatigued by violent exercise, will be found, in five cases out of six, to be the exciting causes of acute Hepatitis, excepting of course, those instances where the disease is brought on by blows or other external violence, an instance of which lately fell under my notice. A gentleman fell from a height of ten or twelve feet, and struck his right side against the end of a ladder; but no attention was paid to the accident for some months, though there was more or less of pain in the hepatic region during that period. At length violent Hepatitis came on, and was subdued by blood-letting and other evacuations. Six months after this attack, or twelve from the accident, another attack of inflammation came on which terminated in abscess that burst through the diaphragm into the lungs, and destroyed the patient the ninth day after the developement of the abscess.

Subsect. 3.—Chronic Hepatitis. It is not my intention to enter into the consideration of those various derangements of *structure* to which the liver is subject, but which can seldom be discriminated from each other till after death. Unfortunately when *organic* affections of this important viscus have gone the length of manifesting themselves by visible or tangible alterations from the natural state, our exertions are rarely of any avail; and although we may prognosticate the appearances on dissection, and exhibit specimens of the same in well executed plates, it is little consolation to the patient or his friends, when we are unable to arrest the fatal progress of the disease, or alleviate the sufferings of its victim!

The great object of our investigations, therefore, must be the means of ascertaining and counteracting those disturbances of function, and incipient derangements of structure in this organ, which while within the power of medicine, are, at the same time, laying the foundation for, or more or less rapidly advancing to, those organic lesions, and symptomatic diseases which bid defiance to our art.

This is a wide field for the exertion of our faculties and discrimination, and I am thoroughly convinced that it is one which will reward us, more than any other, for our labour. I trust that the path here explored will ultimately

lead to important discoveries in the healing art, though I am well aware that the attempt will be stigmatised as visionary or fanciful by the indolent and prejudiced part of the medical community.

When we survey the immense size, the complicated structure, and the peculiar circulation of the liver, we cannot but be forcibly convinced that it is an organ of great importance in the animal economy. As a gland receiving *venous blood* from the most important viscera of the abdomen, the state of its functions must have a decisive influence on *them*, independently of the qualities of its secretions, according as it affords an easy or difficult transmission of blood from those organs to the heart. The extreme vessels of the vena portarum which terminate in the capillary system of the venæ cavæ hepaticæ are so intimately connected with those which terminate in the pori biliarii, that any preternatural activity or torpor of the latter must have a corresponding effect on the former: and that various causes are perpetually influencing, that is, quickening or retarding the function of secretion in the liver, cannot well be doubted. Thus the external stimulus of atmospheric heat, will, by the "*Cutaneo-Hepatic Sympathy*," augment the secretion of bile, while a low temperature will, in the same way, diminish it; consequently the frequent *vicissitudes*, in this climate, must be perpetually varying the function of the liver. But the causes which operate in decreasing or keeping below par, the biliary secretion, are infinitely stronger and more numerous (as may be well believed) than those which increase, or keep above the healthy standard, the same secretion; and hence, it is, that on accurate investigation, nine-tenths of those diseases dependant on, or connected with, hepatic derangement, will be found to be characterized by paucity or vitiation of the biliary fluid.

Physiologists are by no means agreed respecting the nature of the bile; some considering it as an excretion, others as a secretion essentially necessary for the elimination of the chyle from the chyme, and for the expulsion of the fecal remains from the intestinal canal. Much discussion has also taken place whether the bile be secreted entirely from venous blood, or from venous and arterial together. But certainly the probability is much in favour of the former opinion, else why should nature so far deviate from her usual plan of sending arterial blood to secreting organs, since it would have been extremely easy to have enlarged

the hepatic artery, and caused the vena portarum to open directly into the inferior cava, instead of pouring its vast current of venous blood through the biliary organ. It has been triumphantly stated by the opposite party that Mr. Abernethy's case of a child apparently well nourished, where the vena portæ opened into the cava, proves that arterial blood is as well adapted for the biliary secretion as venous. But let it be remembered that in this case, which however is a lusus naturæ, whatever peculiar principles or properties are contained in the portal current of blood, and which render it more adapted for biliary secretion, were distributed through the general circulation, and of course a *proportion* of them still found their way to the liver by the hepatic artery. Now it is distinctly stated by Mr. Abernethy that in this case, the bile contained in the gall-bladder was *thinner and lighter coloured than natural*, which circumstances coupled with the foregoing considerations will invalidate the force of the reasonings founded on the solitary case in question.

It is not, however, of much consequence to know from what description of blood the bile is produced; it is more interesting to ascertain whether there is any thing excrementitious in the fluid, whose stay in the system would prove injurious. It must be extremely difficult to decide this point, because, in cases where there is a paucity of bile secreted, the various morbid symptoms may be ascribed, and with plausibility too, rather to the absence of this fluid in the alimentary canal, than to the presence of those principles which would otherwise constitute it, in the general circulation. On the other hand, when we compare the size of the organ with the diminutive quantity of fluid elaborated in it, we would be led to conclude that nature, who does nothing in vain, employs this vast apparatus for the purpose of separating something from the blood which would be as detrimental to the constitution, by remaining in the circulation, as it is beneficial and necessary to the functions of the alimentary canal. This is surely no unreasonable assumption, and on it we shall proceed in the investigation of our subject.

When we examine the system of the vena portæ, it appears truly astonishing how the circulation is carried on! We see the veins which form the great trunk arising from capillary tubes, and terminating again in a capillary system, with only *vis a tergo*, but without muscular propulsion or any

other visible impulse to the current. If again, we consider that the capillary system, in which the vena portarum terminates, is a gland secreting a viscid fluid, and liable, from its sympathies with other organs, to be very frequently disturbed in its function, we see that in this way the portal circulation is perpetually liable to checks and interruptions.

The association between the skin and liver, as evinced more clearly in hot climates by increased secretion of bile keeping pace with the augmented cuticular discharge, is, in this variable climate, the *paramount cause* of those checks to, and frequent diminutions of the biliary secretion. The next in order of importance is the habit of ingurgitating spirituous and fermented drinks, deranging the functions of the stomach and intestines, and, by sympathy, the hepatic system. A third cause, of perhaps equal magnitude with the preceding, is "*the play of the passions.*" The people of England, from their geographical situation, their mercantile, and their political character, experience a more energetic excitement of the mental faculties than any other people on the globe. This is speaking collectively, but when we examine the different classes of society more minutely, we shall find that the nature of a mercantile and manufacturing life, involves its votaries, for obvious reasons, in a train of doubts, anxieties, and agitating passions, which have a decisive influence on the biliary and digestive organs in particular. The effects of strong and sudden mental emotions, as fear, surprise, grief, &c. on the functions of the stomach and liver are subjects of every day's observation; and the same causes operating more slowly and less apparently, at length effect the most serious derangements in the organs and functions alluded to. From the known sympathy which exists between the sensorium and chylo-poietic viscera, we may reasonably infer, that when intellectual operations are carried on with immoderate zeal, or the mind kept in a harrassed and anxious state, a portion of excitability is, as it were, withdrawn from those organs with which the brain sympathises; in consequence of which, their functions become disturbed or even suspended. A familiar example of this may be seen in all degrees among the class of sedentary *Literati*, whose biliary and digestive organs are torpid in proportion to the overstrained exertion of their mental faculties.—But the tradesman and artizan, though they have somewhat more corporeal, and less of mental exercise than the class

alluded to, yet, we may assert that their exercise is of a confined, and a partial nature, while their minds are very generally on the stretch, respecting their individual interests, and wavering prospects; so that, on the whole, they participate, more than would be suspected, in the very same diseases which affect their more illumined brethren.

We are now to trace the consequences of those checks and interruptions of the biliary secretion. It is conjectured, for it cannot be accurately ascertained, that in ordinary states of health, about six ounces of bile are secreted in the twenty-four hours. It has been demonstrated also, by direct experiments, that this secretion does not go on uniformly; on the contrary, during the time our food is digesting in the *stomach*, the pylorus is closed, and biliary secretion is *diminished*; on the other hand, whenever the chyme begins to pass into the duodenum, the biliary secretion is rapidly *augmented*. These facts sufficiently prove that the fluid in question is necessary towards the elimination of the chyle from the chyme, during its passage along the track of the small intestines. As a highly animalised fluid, it is more than probable that a part of it or its constituents combines with the chyle, and passes on to the general circulation; since it will hardly be contended that six ounces of bile are daily voided *per anum*, in combination with the fecal residue of our food. "One important use of this bile, says Dr. Saunders, "is unquestionably that of stimulating the intestines, and performing the office of a *purgative*." The idea of its being merely a *purgative*, conveys a very erroneous conception of this important office of the bile, particularly when coupled with the following sentence. "We shall afterwards observe, that where it (bile) is defective, its place may be supplied by artificial means with advantage; and in no instance has the application of chemistry to the cure of diseases appeared more successful than in suggesting the use of proper remedies in cases of diseased and defective bile."

Those who have felt the effects of a torpid secretion in the liver, and observed them in others, can best judge of the difficulty experienced in combating these effects, and supplying the place of the natural fluid by artificial means!—The consequences indeed of this want of natural stimulus to the intestinal canal, independently of all other considerations, are truly momentous! In the first place, a defective, or at least, irregular assimilation must ensue,

when the peristaltic motion of the intestines is unnaturally slow; because the chyme is not presented in a proper manner to the mouths of the chyliferous tubes. From this source alone must arise a considerable share of that debility and emaciation, so generally attendant on complaints of this description.

In the second place, many prejudicial chemical changes, and extrications of injurious principles must take place during the retarded progress of the alimentary fluid through the intestines, partly from the *remora* itself, and partly from the deficiency of bile. From this source arise those flatulences, eructations, acidities, &c. which create such uneasy sensations throughout the whole of the alimentary canal.

In the third place, the extraordinary remora of the fecal remains cannot but be prejudicial to the general health, as every one must have observed in his own case, during even a temporary confinement of the bowels. From this source arise Hæmorrhoids; partly from the mechanical obstruction of the hardened feces, and partly from the impeded circulation in the liver, preventing a free return of blood from the Hæmorrhoidal vessels. From this source also arise, in part at least, those head-aches so frequently attendant on constipated bowels, and which seem, in many instances, to be ocasioned by the masses of hardened colluvies in the bowels pressing on the descending aorta, and causing an unusual quantity of blood to be thus distributed to the head, with pain, vertigo, and various other uneasy sensations in the sensorium.

In the fourth place, a deficient secretion of bile and torpid state of the bowels, admit of, or give rise to, accumulations of mucus throughout the whole line of the primæ viæ, which prove exceedingly prejudicial to the gastric and intestinal digestions, and aggravate all the symptoms before enumerated. This mucus occasionally becomes so viscid as to obstruct, in a very considerable degree, the passage of chyme and feces along the line of intestines, and also the elimination of bile from the ducts into the duodenum; in consequence of which, this fluid itself becomes inspissated, and gorges the pori biliarii. At other times, this mucus, by preventing the bile from passing out of the duodenum *downwards*, causes a regurgitation of it into the stomach, which either brings on sick-head-aches, or bilious vomitings, that are taken by the patient, and indeed by the medical men themselves, for indubitable proofs of

redundancy in the secretion of bile, when the original evil was, in reality, a deficiency of this fluid, and a torpor of the organ which secreted it.

Fifthly, the torpid action in the liver, by proving a check to the portal circulation, and of course preventing the same quantum of blood being transmitted through the cæliac and mesenteric arteries, in a given time, as when the office of secretion is going on briskly, must, of necessity, produce an unequal distribution of blood, giving rise to various anomalous symptoms, but particularly head-aches, hæmorrhoids, flushings, and irregular determinations to particular organs, according to the idiosyncrasy of the individual, and his peculiar habits of life.

Sixthly, although, in general, while a torpid secretion of bile obtains, this fluid will be insipid and inert, yet, from various causes, and particularly from atmospherical influence, the biliary organ is occasionally roused, for short periods, from its lethargic state, at which times, a comparatively inordinate secretion takes place, but of a very depraved quality, as evinced by the dark and variegated colour of the stools—by their peculiar fetor, and by the various uneasy sensations produced in the line of the alimentary canal.

Seventhly, in a torpid state of the biliary secretion, there is very frequently an absorption of this fluid into the general circulation, (probably during the remora in the pori biliarii themselves) giving either a decided tinge to the eye or even to the skin, or else that peculiar sallowness, denominated by Dr. Darwin *Bombycinous*, from its resemblance to the colour of the silk worm. The absorption of genuine and healthy bile, as in simple obstruction of the ducts causing jaundice, is accompanied, as is well known, by a peculiar lassitude and despondency of mind;—and from this we may judge of the effects produced by that habitual state of absorption, when a *depraved fluid* is constantly draining into the circulation, and diffusing its deleterious influence over every function of the body, and even of the mind. The effects resulting from this cause are, in all probability, greatly aggravated by *non-secretion*, or the delay of those principles in the blood which, in a state of health, would have been converted into bile.—To this source, may, in part, at least, be traced the origin of those symptoms, hitherto, and perhaps not improperly, termed *nervous*, which are as distressing to the patient as they are

puzzling to the practitioner; the latter indeed generally treats them as *ideal* or imaginary, but from this and the following consideration, they may be probably classed as real, and severe affections of the nervous system.

The absorption and non-secretion of bile, while they account satisfactorily for the peculiar tinge of the eye and skin, explain another circumstance, which has been hitherto unnoticed, viz. the pain which is very frequently experienced in passing urine, when the biliary system is deranged. This symptom is almost constant in all severe hepatic affections, in tropical climates; and, though in a less degree, in this country, where it is principally the *function* of the liver that is disturbed; yet, in a majority of instances, it may be detected, and it will assist in the diagnosis of the disease.

The furred tongue, and bitter taste in the mouth, though in general dependent on a disordered state of the stomach, may frequently be attributable to this absorption and non-secretion of bile.

Eighthly, the torpor of any organ, but particularly an organ of such magnitude as the liver; must, by its sympathies or associations, occasion considerable derangement in the balance of excitability throughout the system.—"This torpor, says Dr. Saunders, 'is diffused by sympathy over *every part* of the system, and langour and lassitude prevail."—*4th Ed. p.* 151. I conceive that this idea is not founded on accurate observation; and that it will appear on a closer view of the subject, that if the torpor in question be diffused to *some organs*, it will cause a state, the reverse of this, or an overplus of excitability, in *others*. "It frequently happens," says the same author, "that bile is secreted in too small a quantity, as in Hypochondriacal complaints, and Chlorosis, in which diseases, an unusual degree of torpor takes place, expressed in the one case by dejection and despair, in the other by inactivity and langour."—*p.* 154. Now if one of these Hypochondriacal persons, whose biliary and digestive organs are confessedly in a torpid state, be placed in the same room with one whose biliary and digestive organs are in a state of activity, and if, unknown to both, a pistol be fired off in an adjoining apartment, we shall see this same Hypochondriac, where, says Dr. S. "torpor is diffused over *every part* of the system," start from his chair, and exhibit, by the most violent agitation, unequivocal marks of *greater irritability* of nerve,

than his companion. Is this not a proof that the torpor of one organ destroys the balance of excitability, rather than diffuses itself over all the system? Or in other words, that while the torpor is diffused from the liver to the alimentary canal, partly by sympathy, and partly from deficiency of bile, a morbid excess of irritability accumulates in the nervous system, which inequilibrium of excitability explains, in a great measure, those mental symptoms accompanying a disordered state of the biliary and digestive organs.

It must here be remarked, however, that all those *effects* on other organs and parts of the system, resulting from sympathy with the liver, become, in their turn, *causes* or reagents, reflecting back upon their source, an aggravation of those ills which were originally disseminated thence. This is so clearly evinced in the action and reaction between the biliary and nervous systems, that in many instances it is difficult to say where the malady commenced. Indeed any great degree of grief, anxiety, or other depressing passions of the mind, will as certainly derange the functions of the liver and digestive organs, as the derangements of those organs will produce despondency, irritability, fickleness of temper, and other disturbances of the nervous system.

This principle or inequilibrium in the balance of excitability in the system, from the torpor of one set of organs, is applicable to an explanation of several diseases in the class *Neuroses*, which have hitherto baffled all speculations. In *Chorea*, [St. Vitus's Dance] for instance, there is as invariably a torpor of the uterine system, or biliary and digestive organs, as there is an inordinate excitability in a particular class of muscles and nerves, where nature appears to exhaust or expend the morbid accumulations, by what appear ridiculous and extraordinary motions. This seems the natural cure of the disease, and of course requires a long time; but the most effectual artificial cures are conducted exactly on the principle in question; viz. by a course of cathartics, tonics, and emmenagogues, to re-establish the balance of the circulation and excitability, and restore the energy and action of the biliary, digestive, and uterine systems.

On this principle, also, may be explained many cases of Epilepsy, where the balance of excitability is occasionally or periodically disturbed, and a morbid excess of it thrown on the brain and nervous system, in consequence, very fre-

quently, of a torpor in the genital organs. Hence the Lytta in particular, by its peculiar effect on the urinary organs, in bringing on strangury and a specific determination to those parts, has been singularly successful in restoring the balance of excitability and preventing the paroxysms of this intractable disease.*

In Hysteria, the morbid irritability is evidently accompanied, and we may fairly presume, occasioned by a defective energy in the uterine, biliary, or digestive organs, and hence by restoring their functions we subdue the disease.

Does not Hydrocephalus [water in the brain] in a great majority of cases, depend on previous torpor or inactivity of the liver in children, evinced by the white, green, and otherwise unnatural stools, which so generally precede and accompany the disease? Independently of the sympathy which is acknowledged to exist between the brain and liver, any obstruction to the free circulation through the latter organ, will occasion plethora and congestion in the former, and thus lead to effusion in an organ so soft and delicate as the brain of a child. Does not the cure illustrate this reasoning, if the premonitory symptoms of Hydrocephalus be noticed, and the biliary organ be unloaded by leeches externally, and the prompt use of mercurials and purgatives internally?

I trust that under these eight heads, a rational explanation has been given of those symptoms depending on, or connected with *derangement of function* in the biliary and digestive organs, without any hypothetical speculations; and if this be granted, we have thus insensibly delineated the whole range, not only of what are termed Bilious, but of Nervous, Hypochondriacal, and Hysterical Complaints. Whether we consider the latter as causes or consequences of the functional derangements in question, we shall find that our best remedial measures must hinge on this view of the subject; and that, considering the hitherto mysterious and intractable nature of these disorders, our success will be as superior to the old *farrago practice*, as the ratio symtomatum here sketched out, is more simple and satisfactory than the loose and indefinite ideas so long prevalent in regard to the class of human infirmities under consideration.

Before entering on the causes and treatment of biliary derangements, I shall add a few words on an interesting subject that has been little investigated.

* See the Section on Epilepsy farther on.

Ninthly, I have already observed that the "*Cutaneo-Hepatic Sympathy*," or consent between the skin and liver has never been noticed till I traced its influence in the production of tropical diseases. I there hinted, that I could have extended my Essay by explaining the inveteracy and indeed mortality of ulcers in hot climates. During the last seven years, my observations on a large class of cutaneous defœdations have tended to confirm me in the idea there broached; namely, that not only those local sores, which Mr. Abernethy has traced to disordered states of the Chylopoietic viscera, but also a very great proportion of cutaneous eruptions and defœdations are dependent on derangements of the biliary secretion. Purgatives, diaphoretics, and mercurials, the three grand means of cure in the greatest number of cutaneous complaints, are, in reality, the most effective measures we can use in augmenting and ameliorating the biliary secretion. The success which has attended my efforts for removing numerous defœdations of the skin, (so minutely, but sometimes so needlessly classed and distinguished by systematic writers) while acting on the principle in question, emboldens me to appeal to the test of experience for a corroboration of the statement here advanced.

Subsect. 4.—*Causes of Biliary Darangements.* If the high range of temperature in tropical climates, broken occasionally by vicissitudes, can produce such lesion of structure in the hepatic system, so in our own climate, the rapid transitions, the humidity, and the coldness of the atmosphere, operate most powerfully, though unsuspectedly on the functions of the liver, as well as on those of the other digestive organs. The partial application of cold or wet to the body, and particularly to the lower extremities, when for any length of time continued, has a powerful influence on the biliary secretion, diminishing and deteriorating this important fluid, and consequently disturbing the functions of the whole intestinal canal.

This is the principal operating cause in the production of bilious disorders among the lower classes of society, where want of clothing and bedding exposes them to the influence of cold and dampness. It has been generally supposed, even among physicians, that it was scarcely possible to sleep too cool; but in fact, there is much greater danger from the application of cold when scantily covered with

bedding at night, than there is from any superabundance of the same. In the one case, the sleep is frequently broken by the disagreeable sensations of cold, and the refreshment is very incomplete. In the other, even if there should be an increase of the perspiratory functions of the skin, the sleep is followed by vigour and refreshment,

The Russians, who are every night bathed in sweat, from the circumstance of their sleeping on their ovens, resist the severity of their climate, and are more exempt from pulmonic complaints than almost any other nation. A large class of artizans in this country suffer from biliary derangements by the application of cold and dampness to their feet, while employed in sedentary occupations.

The next cause, in order of importance, is intemperance. By this I do not merely mean excess in drink, but also in food. If among the labouring classes of society in this country, we see many ingurgitating a great quantity of inebriating matters, without any apparent ill effects, we are not thence to infer, that the artizan and mechanic, and much less the sedentary, the inactive, and the dissolute classes, can pursue the same practice with similar impunity. The marked and decisive effects of intoxicating liquors on the liver and its secretions have been noticed in all ages, and are familiar even to the vulgar. It is not improbable that the ancient poets had this in view when they fabled the punishment of Prometheus for having stolen *fire* from heaven, by placing a vulture to feed on his liver; thereby intimating that those who are not contented with the milder beverages of nature, but ingurgitate the liquid fire of ardent spirits, must suffer the agonies of Prometheus in the diseases of the liver thus induced.

"One of the most common diseases in the liver (and perhaps the most common except the adhesions which we have lately described) says Dr. Baillie, is the formation of tubercles in its substance. This disease is hardly ever met with in very young persons, but frequently takes place in middle or advanced age:—it is likewise more common in men than in women. This seems to depend upon the habit of drinking being more common in the one sex than in the other; for this disease is most frequently found in hard drinkers." *Morbid Anat.* 214.

Now if hard drinking, and particularly dram drinking, be capable of exciting this terrible and incurable derange-

ment of *structure* in the liver, it requires no ingenuity to prove that a less excessive use of spirits, wine, and beer, such indeed as is generally and daily practised, may be quite adequate (particularly in conjunction with the other causes) to disturb the *functions* of the organ alluded to; and this truth is hourly forced on the notice of every medical man who has the least pretensions to discrimination.

It is not, however, so easy to explain the *modus operandi* of spirituous potations on the hepatic system. To consider them with John Brown simply as stimuli, will not unloose the Gordian knot; for we see the hottest spices of the East and West devoured in large quantities without any such effect. As a deficiency and irregularity of the biliary secretion almost invariably characterise the long continued use and abuse of fermented liquors, it is not unreasonable to infer that they act at first as specific stimuli on the liver and its ducts, gradually wearing out their excitability, and leading to paucity of secretion in the organ. That there are *specific* stimuli we cannot deny, without asserting that tartarized antimony will not excite the stomach, jalap the intestines, or cantharides the kidneys, &c. these effects were not expected from these medicines *a priori*; they were learned from experience.—So in the present case, we learn from observation, what we could not have anticipated from reasoning, that in proportion, as we substitute for the simple beverage of nature, those drinks which have an inebriating quality, we become more and more liable first to *functional* and finally to *structural* derangements of the liver.

Intemperance in Food.—It is a fact, that in most hepatic diseases, whether of function or structure, the *appetite*, though often irregular and capricious, is not often defective; a circumstance which is by no means fortunate for the patient, because the digestion is never good. The consequence is, that although intemperance in food might not have given origin to the disease, it now contributes to aggravate it. But that the habit of indulging in the pleasures of the table is one of the contributing *causes* of biliary derangements, cannot be doubted, since not only gluttons, but animals stall fed, are very subject to enlargements of the liver. As perhaps there is no nation that fares more sumptuously than our own, and that too on the most substantial dishes, we are fairly authorised in setting down intemperance in food as one of the causes of Hepatic derangement.

The choice of particular kinds of food too, is calculated to derange the functions of the liver; as of fat, oily, and rancid meats, together with the long catalogue of pastry confectionary.

Mental Agitation.—I have already stated that the people of this country have a higher degree of mental energy, and experience, from their political, commercial, and manufacturing habits, a greater range of mental agitation and anxiety, than the inhabitants of perhaps any country in the world. The more closely we watch the play of the passions in their effects on the material fabric, the more we will be convinced of their powerful influence on the functions of the liver and digestive organs in particular. —The receipt of a single letter or message, announcing a melancholy event in which our interests are concerned, will so completely change the nature and appearance of the biliary, together with the gastric and intestinal secretions, that they could scarcely be recognised as the same fluids! Every thing, in short, which disturbs the equanimity of the mind, interrupts the healthy functions of the liver and digestive organs, which in their turn react on, and aggravate the original causes. These causes alone, were there no others, would be sufficient to account for the wide spread of functional derangements of the biliary organs in this country.

Subsect. 5.—*Treatment of functional and incipient organic derangements of the biliary organs.* The labour bestowed in exposing the *nature*, *causes*, *and effects* of these derangements, will greatly abridge our observations on their *treatment*, which last is rendered clear, and, in general, effectual, by a thorough study of the former. Whereas the man who prescribes for the name, without taking the trouble to investigate the nature of a disease, is perpetually blundering, and by the misapplication of remedies, finds himself frequently embarrassed and disappointed. By studying the causes of a disease, we arm ourselves with so many remedies, not only for the prevention, but the removal of it; and by being minutely acquainted with its symptoms, our resources are multiplied when we undertake the treatment.

It is not true, that a disease must *always* be attacked in its *seat*, and that combating *symptoms* makes no progress towards a cure. We shall find, on the contrary, that

every symptom which we alleviate has an influence, more or less powerful, on the origin. We may instance the heat of the skin in fever—every one will allow that this is merely a symptom or effect of fever, not the essence or seat of it; yet, what relief does it afford to the patient, and mitigation of the disease, to subdue this symptom! So in the disease now under consideration, constipation of the bowels is a very general symptom or effect, and yet what essential relief does the removal of this symptom afford! In general, however, we may divide the treatment into two heads—withdrawing the causes, and obviating their effects.

Removal of Causes.—Many of the causes which induce functional and incipient structural derangement of the biliary organs, cannot be avoided, and therefore we can endeavour only to counteract their effects. The natural atmospherical vicissitudes are beyond our controul; but by attention to dress, and by shifting our wet clothes as soon as we leave off exercise, we shall, in general, bid defiance to aerial transitions. The close sympathy which exists between the feet and stomach, and between the stomach and liver, will point out the necessity of paying the utmost attention to the warmth and dryness of the feet, a circumstance of more importance, as a remedial measure, in these disorders, than is generally imagined.

Having shewn that sudden checks to perspiration, and also long continued cold are the fruitful sources of hepatic complaints, it is plain that flannels next the skin, and a sufficiency of bed clothes at night, are preventive measures of great importance. And as a superabundant perspiration renders the extreme vessels more liable to sudden collapse from the application of cold; it is evident that we ought to avoid that kind of exercise in the heat of the day, and particularly in the sun, which so inordinately increases the cuticular discharge. When such causes are unavoidable, our next endeavour to shun the bad consequences is, not to desist at once from exercise, but above all things, to avoid a current of air, the application of wet, or the drinking of cold liquids.

Abstinence from spirituous or fermented liquors is almost a *sine qua non* in this part of the treatment of hepatic complaints; and the greatest attention to the quantity and quality of food is highly necessary. In respect to quality no general rule can be laid down, as idiosyncrasies differ so

much.—The oily and rancid animal, together with the flatulent vegetable foods are, for the most part, prejudicial; and in respect to quantity, the rule ought always to be that we eat no more than we can easily and comfortably digest. This rule will be easily understood by every person who labours under bilious derangements.

Mental Anxiety.—Those mental causes which produce or aggravate corporeal diseases, though apparently most, are in reality least within our power, either as to prevention or removal. The philosopher may declaim, and the divine may preach against the folly or danger of giving way to despondency and dread; but it is in vain! Wherever there is derangement in the hepatic functions, there will, in general, be low spirits—timidity—fickleness of mind—irritability of temper—and Hypochondriacism, whatever efforts we may make to the contrary by way of reasoning. Religion, it is true, is more powerful; but the corporeal disease is apt so to cloud the mental faculties, as to convert the bright hopes and consolations of revelation into gloomy superstition and unconquerable despair.

Those causes of hepatic derangements arising from certain trades and occupations, are sometimes to be removed, especially among the more opulent classes. As all sedentary employments, and those which keep the mind on the rack, are injurious to the class of diseases in question, so are they to be changed, if circumstances will admit; and if this cannot be done, their pernicious effects should be as much counteracted as possible by occasional relaxation, and such other means as a judicious practitioner can frequently suggest.

Medical Treatment.—The variety of causes which we have traced in the production of hepatic derangements, both of function and structure, would seem to point out a corresponding variety in the treatment; but this variety principally regards the prevention or removal of those causes themselves; for when their effects are once produced, a considerable similarity obtains in the means of repairing the injury. For instance, in acute hepatitis, whether the inflammation be caused by inordinate exercise in the heat of the sun, by intoxication, or by cold or wet applied to the heated body, our plan of treatment will be almost exactly the same. So in Cholera Morbus, which may be considered a functional derangement of the biliary organ, the same treatment will, in general, be necessary whether the cause be heat, cold, alternations of temperature,

or ingesta occasioning a violent orgasm throughout the chylo-poietic organs.

In what may be termed the minor or subordinate means of relief, however, a very great variety in the *methodus medendi* may be advantageously employed; since I have shewn that every symptom which we mitigate or remove, not only affords a partial relief to the sufferings of the patient, but operates beneficially, more or less, on the origin of the disease itself. This is of infinite consequence in the class of infirmities under consideration; since it often requires the utmost address on the part of the practitioner to induce the patient to persevere sufficiently long in any one plan of treatment, to be effectual. Hence we are frequently forced to lop the tree branch by branch, rather than cut it at the root; merely because the patient soon becomes tired if daily advantages are not gained. We must not, however, be diverted from the attack of the enemy in his strong hold, as the routine practitioner too often is, by flying from point to point, and relieving symptoms only while the great body of the disease remains unsubdued, and indeed unsuspected.

We shall begin therefore with the essential, and gradually descend through the various auxiliary means of relief which experience and observation have stamped with the seal of utility in this interesting class of human afflictions.

I have already demonstrated that in ninety-nine cases out of the hundred, there is a deficiency or irregularity, together with vitiation of the biliary secretion. As for a mere redundant secretion of bile, the thing itself is a bagatelle, and the treatment simple and easy. It is the *torpid liver* which every hour arrests our attention, and requires our exertions to obviate its long catalogue of effects.

I consider the three primary indications to be as follow.

First—To increase and ameliorate the biliary fluid;—

Second—To daily remove the vitiated secretions of the liver and other digestive organs;—

Third—To increase the tone and digestion of the alimentary canal.

There are some causes which increase the secretion of bile, but deteriorate its quality; such, for instance, as a high range of atmospheric heat, an intemperate use of fat and oily food, violent exercise, &c. These therefore cannot be safely employed to stimulate a torpid liver; since the torpidity itself is frequently the result of long stimulation from these causes, particularly the first.

A moderately warm and steady atmosphere, is, however, peculiarly beneficial to the complaints in question; as it keeps up a mild action of the perspiratory vessels on the surface of the body, and by the cutaneo-hepatic sympathy, of the secreting vessels in the liver.

This accounts for the bad state of health, and even aggravation of their complaints, which tropical invalids so often experience on returning to Northern Countries. The cuticular and hepatic secretions are so interrupted and checked, that they are obliged to be constantly taking medicine, and bowel complaints very generally harrass them for a considerable time after their arrival in their native, but estranged country. Hence the genial skies of the Southern parts of Europe, and of Madeira, are at first infinitely more salubrious for the Anglo-east or West-Indian, returning with hepatic complaints, than the raw and variable atmosphere of England; a doctrine which I believe, either from ignorance or self-interest, has never before been inculcated, but which I know from personal experience and suffering to be true.

As an internal medicine, there is none which so steadily increases and meliorates the hepatic secretion as some of the mild preparations of mercury. Whether this mineral acts on the liver as on other glands, by increasing its action, or whether it acts in a specific manner, as on the salivary glands, for instance, I need not stop to inquire; but that it does augment and improve the biliary fluid, in a very remarkable degree, both when it salivates and purges, is a fact which observant practitioners must have daily proofs of, and which requires no support from argument.

A gentle and gradual introduction of mercury into the system, retarded by daily evacuations from the bowels, till it slightly affects the mouth, or at least the breath, and kept at that point for some time, forms, in numerous cases, the most effectual method of restoring a due and healthy action to the biliary organ. As soon, in general, as a mercurial odour is perceived on the breath, the stools become yellow and more copious—the patient experiences an exhilaration of spirits, and food is relished and digested better. The eye and complexion soon after that, clear, and animation is restored to the countenance. After keeping things in this state, for a longer or shorter time, according to the stage of the disease, a course of opening medicines, combined with bitters and tonics ought to be entered on, and continued for a considerable period. For the above purpose, the blue

pill in two, three, or four grain doses, every night, combined or alternated with a purgative, seems to answer best, without ruffling the constitution, or producing much uneasiness in the bowels. Next to this is the Hydro-calomel, which rarely gripes.

Where it is not judged prudent to bring the system under the influence of mercury, and in a majority of cases it would be at least unnecessary, in many detrimental, our plan is to enter on a course of medicines which will at once increase the biliary secretion, clear the bowels, and improve the digestion.

Such a combination as the following may serve as a model for medicine calculated to effect the two first intentions. R. Ex. Col. Comp. dr. i. Sub. Hyd. (Hydro-calomel) gr. xv. Antim. Tart. gr. ij. Olei Carui M. v. M. ft. Pil. xxiv. Capiat unam, duas, vel tres quâque nocte.

Of all the varied forms of purgatives which I have tried, I have not found any which is more generally applicable or more generally useful than the above. The dose must be regulated by the effects produced. One or two copious stools should be procured each day, by these pills, and no more. They should be persevered in for a very long time, and they produce such alleviation of uneasy sensations during their use, that the patient at length is anxious for them to be continued.

During this period the compound infusions of Gentian, Cascarilla, Quassia, Calumba, &c. may be taken three or four times a day, with the carbonate of soda or ammonia, and a small quantity of any aromatic tincture, as of Cardamom seeds. These medicines are capable of being infinitely varied, while the same object is still kept in view—viz. the elimination of viscid and depraved bile from the pori biliarii and hepatic ducts; the increase of a better fluid; and the removal of all feculence and morbid secretions from the alimentary canal.

It not very unfrequently happens, however, that these purgatives, either from the idiosyncrasy, or the caprice of the patient, cannot be employed; in which case, we must have recourse to others, but of much less efficacy. The Sulphate of Magnesia in the Infusion of Roses, with a few grains of Sulphate of Iron, will form a tolerably good imitation of Cheltenham water, with which the bowels ought to be daily cleared, giving twice a week at least, a few grains of the blue pill, to act on the secretory vessels

and ducts of the liver.* Or five grains of the steel or squill pill with half a grain of calomel, may be given every second or third night, and infusion of calumba with Carbonate of Soda or Potassa during the day. I would also strongly recommend from half a pint to a pint of decoction of the woods to be daily drunk as an auxiliary to the above remedies. Some sciolists may deride Sarsaparilla, but I can, from experience, assert that in conjunction with purgatives it is a most invaluable medicine. It should be continued for at least three or six months.

By a steady perseverance in any of these plans, but particularly the former, (with mercurial aloetic medicines) it is surprising what may be done, not only in bilious, but in the whole tribe of nervous and Hypochondriacal complaints.

When from sudden atmospherical vicissitudes, debauches, or errors in diet, a momentary redundancy and vitiation of the biliary secretion takes place, with nausea, sick head-ache, despondency, &c. the irritating fluids must be carried downwards by purgatives; but it is not generally known that a pretty large dose of calomel, say ten grains for an adult, will allay the gastric commotion and carry off the morbid biliary and intestinal secretions with less disturbance to the system than medicines of a much milder character. Prejudice and "*Experientia fallax*" will revolt from such a measure, but, magna est veritas et prevalebit.

The above may be termed the radical treatment by internal medicines, inasmuch as it aims at the very source of the mischief; but much may be done by counteracting the *effects*, or alleviating the *symptoms* of this protean class of diseases, since, as I have before observed, these in their turn become causes, and aggravate the original malady.

---

* The purgative which I have lately employed, as combined or alternated with the blue pill, is Artificial Harrowgate Water. The Native Harrowgate Water has been strongly recommended by my excellent friend Dr. Armstrong in his late work; but being in a Southern part of the Kingdom at the time, I could not come at the Native Spring, and therefore procured the proportion of the ingredients [sulphate of magnesia, supertartrite of potash and sulphuret of potash] and exhibited it thus prepared. As far as my experience yet extends, this medicine will be found a most important auxiliary, if not an occasional substitute for mercury in chronic obstructions of the internal organs, and in obstinate cutaneous eruptions. In this *last class* of complaints, so disgusting to the eye and distressing to the patient, I have witnessed such happy effects that I should not be surprised at seeing it made, one of these days, the basis of some patent Nostrum, in the hands of some of the Charlatan tribe. It purges without debilitating, and though nauseous at first, the taste soon becomes reconciled to it. It should, however, be always assisted by the blue pill, or that and decoction of sarsaparilla.

I have instanced constipation as indubitably, at first, a mere *effect* of derangement and deficiency of the biliary secretion, but soon becoming a conspicuous feature in the disease:—this, and indeed most other symptoms, will happily be removed by the means which we employ in the radical treatment; yet, there are various others which require separate attention. Thus acidity in the primæ viæ is often more troublesome to the patient than any other symptom, and keeps both body and mind uneasy; cardialgic sensations being, in general, borne with less patience than any others. For this, both the volatile and fixed alkalis must be used. The carbonate of ammonia may be combined with any bitter infusions, as may also the Liquor Potassæ (Brandish) which is a very powerful antacid. The oxide of bismuth, in five grain doses two or three times a day is a very excellent anti-cardialgic remedy, whose exhibition is unattended with any danger.

The head-aches which accompany nervous and bilious disorders, are so dependant on the original disease, that little can be done for their removal, but by the radical treatment; blisters, æther, antispasmodics, and foot-baths will give a temporary, and only a temporary relief.

Flatulence is a most troublesome symptom, and often requires the *symptomatic* as well as the radical treatment. Here the warmer aromatics and stimulants will be borne with ease and advantage; to which must be frequently added the fætid gums and volatile alkalis. The mineral acids too, will often check the etxrication of air, when alkalis and aromatics fail.

I may here mention the internal use of mineral waters, as those of Cheltenham, Bath, &c. Their physical virtues depend on their warmth and purgative qualities. The exhibition of warm water alone, independently of any impregnation, is extremely useful, inasmuch as it acts like a warm bath on the stomach, communicating energy to the biliary organ, and also diluting the viscid and depraved secretions of both viscera. The morning is the best period for its administration.

We now come to the external remedial measures, which are of no mean importance in this class of diseases.

The tepid bath may claim precedence. If the extensive chain of sympathies between the skin and internal organs be kept in view, we may easily account for the benefit resulting from a judicious course of warm bathing. In

augmenting a mild cuticular discharge from the pores of the surface, the warm bath increases the internal secretions, particularly the biliary, while at the same time, it relieves the venous congestion in the portal circle, and determines to the periphery of the body. It is, of course, in deficient secretion or torpor of the biliary organ, that the warm bath can be advantageous; where there is an *actual* redundancy of bile, which by the bye is seldom the case, and never of long standing, as I have already shewn, the bath would be a more doubtful remedy. Though as plethora in the portal circle almost invariably precedes any violent orgasm in the secretory vessels of the liver, the tepid bath might be serviceable in determining to the surface and removing the congestion anterior to, and thus preventing, redundancy of secretion. Speaking generally, however, it is by far the most *potent* and agreeable external measure which we can put in practice for the relief of those innumerable morbid and anomalous feelings with which the class of complaints under consideration is accompanied. The vapour bath is still more efficacious than the liquid, and where the circumstances of the patient will permit, ought to preferred.—Where neither can be obtained or afforded, the semicupium or half bath, and next to that, the pediluvium or foot bath may, in a considerable degree, supply their place, with advantage.

After the warm bath, frictions with flannel or the flesh brush, in imitation of the oriental custom of shampooing, are of infinite use; and the region of the liver ought to be particularly well rubbed, in order to excite the action of the various vessels, circulating, absorbent, and secretory; a measure which is seldom thought of, either by the physician or patient, but which will be found to reward the trouble with unusual benefit. With respect to the cold bath, it is not so easy to lay down any general rules. In many cases of what are termed nervous and Hypochondriac disorders, the cold bath is an excellent remedy; but where much functional, or any organic derangement has already taken place in the hepatic system, the shock of the bath, and sudden afflux of blood from the surface to the centre of the body, become dangerous circumstances, and I have often seen the most serious consequences result.

In all cases where it is wished to try its effects, the warm bath ought to precede its use for some time, and then by lowering the temperature of the water in the most cautious

manner, to come round at length to the cold bath itself.—When this last can be borne, and a comfortable train of symptoms ensues, with moderate reaction, then the benefit will be considerable, since these healthy oscillations of the vital fluid, lead to a restoration of the secretions and an equal balance of the excitability and circulation throughout the system. Under this head may be placed change of climate, or removal from a variable to a more steady atmosphere. All sudden changes of this kind, however, are dangerous. Hepatic complaints, occasioned for instance, by the burning skies of India, will frequently be greatly aggravated by a direct voyage to, and residence in this country.

The eagerness with which we fly towards our natal soil, inspired with the cheering hopes of renovated health from the inhalation of our native air, is often more suddenly destructive than a continuance in the most unhealthy parts of either India. On arriving in England, the most southern and mild counties should be selected for retreats, till the constitution becomes reassimilated; but where circumstances will permit, Madeira, Lisbon, or the South of France, afford safer asylums for the tropical invalid, than the vallies of Devonshire or the beautiful shores of Hampshire, Sussex, or Dorset. Where an intermediate climate, however, is beyond our reach, the coasts abovementioned present a mildness and equilibrium of temperature, from their southern and maritime position, that render them extremely favourable to the constitution while undergoing the necessary regulation, whether medicinal or dietetic, for the re-establishment of health.

A sea voyage is, in general, as salutary in Hepatic as in Pulmonic complaints; though it is not a prevalent opinion among the faculty. The motion of the vessel, the comparative purity and equilibrium of the air, and regular hours appear to be the chief causes of beneficial influence:—but these perhaps may be well counterbalanced by the advantages available in a journey on shore, where to the passive exercise of gestation or equitation, are added the mental amusement and pleasure resulting from the contemplation of rural or romantic scenery, with all that variety of objects which the diversified face of nature presents to the eye of the traveller in this beautiful island,

It s but too true, however, that in the class of diseases now under review, a sombre tint is thrown over every landscape, and the mind is perpetually called off from external

amusements and observations to a gloomy rumination on our morbid corporeal feelings and infirmities! Whether we climb the tall bark, or repose in the gilded carriage, corroding care pursues us with ceaseless vigilance, and rarely suffers us to escape from ourselves.

> Scandit æratas, vitiosa naves
> Cura! Quid terras alio calentes
> Sole mutamus? Artrabiliosus
> Se raro fugit.

Whenever hepatic derangement amounts to any thing like organic lesion, we have, in general, some local uneasiness, either in the region of the liver itself, or in those other parts of the body which sympathise with that viscus. Pain in the right shoulder is an occasional, but by no means a constant symptom, and therefore its absence proves nothing. More frequently we have a dull obscure pain in the right side, and what is very singular, the pain, though evidently depending on diseased liver, is not unfrequently situated in the left side, quite round under the false ribs.—For this and the pain in the shoulder I can offer no explanation.*

Where dull obtuse pain is complained of in either side, and especially when pressure under the edges of the ribs gives uneasiness, the permanent counter-irritation and drain of a seton are of infinite benefit, as I have repeatedly observed in others and personally experienced in myself. I know that some great authorities despise this measure, representing it as giving only temporary relief, and as being a great *plague* to the patient; but I cannot allow facts to give way to prejudices, and I state the advantage of setons from a practical knowledge of their good effects. In blis-

---

* The urine affords very considerable insight into the state of the biliary organ, and ought always to be most attentively watched. The turbid appearance, the brick-dust, or pink sediment, and the irritation in passing it, are very general attendants on diseased liver. But there is a peculiar and indescribable cast of countenance accompanying organic disease of this viscus, which strikes the experienced observer at the first glance, and forms a clue to unravel the nature of the complaint. The colour, smell, consistence, &c. of the stools, must be strictly examined in all Hepatic complaints. I have already alluded to the effects of biliary derangements on the mind, and particularly on the temper. This is a subject too much neglected by the physician. Even the *dreams* of a person, where occult organic derangement of the liver is taking place, assume a peculiar character which throws much light on the disease. On this, as on most other points of this section, I was drawn to the subject by long personal sufferings.

ters and other counter-irritants, I have much less confidence, though I have sometimes seen them useful. The friction of mercurial liniment over the region of the liver is certainly beneficial, partly from the mechanical irritation, and partly from the mercurial absorption.

I may here mention, as somewhat analogous, the good effects of a broad flannel bandage, composed of several folds, worn pretty tight round the abdomen, and reaching up to the epigastric region. I first caught the hint from the oriental indigenous custom of wearing the *Cummerband*, and both in my own case, and many others, where I have recommended it, a very beneficial change was produced.—Its modus operandi may be explained, 1st, from the local support which it gives to the abdominal viscera; 2ndly, from the equable temperature and warmth which it maintains there; and 3rdly, from the uniform degree of excitation on the surface, and discharge from the perspiratory vessels of that important portion of the body.

In winter, spring, and autumn, the general use of flannels is necessary in disordered functions or structure of the biliary or digestive organs. In winter, to defend from cold;—in spring and autumn, to obviate atmospherical vicissitudes, which are then more prevalent. When the heat of summer renders flannels oppressive and debilitating, from the excess of perspiration, thin calico should be substituted.

The minutest attention is here to be paid to the feet. If they are allowed to remain cold or damp, an increase of torpor or morbid irritability will, by direct or reverse sympathy, be communicated to the liver and Chylo-poietic viscera, and disturbance of their functions is sure to ensue.—Hence the necessity of warmth and dryness, and the utility of frequent foot-baths, and frictions with flannel.

Though many of these circumstances have been noticed before, they are again brought forward here, from a conviction of their importance, and the necessity of impressing them strongly on the minds both of patients and practitioners.

Under this head may also be placed the remedial measure of exercise. A very erroneous idea is entertained of the nature and effects of exercise in the different disorders and states of the frame. Much mischief is daily done by carrying this remedy to excess, thus aggravating the complaints which it was intended to remove. Whenever it is carried to the length of fatigue in the complaints under

consideration, its effects are similar to those of a debauch. All the *active* exercises should be pursued, during summer, in the mornings and evenings, while cool repose is to be indulged in, in the middle of the day, and particularly after the principal meal; since any exertion, at that time disturbs the function of digestion, and causes flatulence, acidity, and uneasy sensations through the line of the intestinal canal. In winter, on the contrary, the exercise should be in the middle of the day, while the fogs of the mornings, and raw air of the evenings are to be avoided.

Speaking generally, the passive exercises are best, as gestation and equitation; but the swing has not been noticed much by writers, though I have seen its good effects in several instances of this kind. It powerfully determines to the surface, increases the perspirable discharge, and in this way relieves many uneasy internal sensations. It would I am convinced prove a very excellent substitute, not only for the other exercises abovementioned, but for a sea voyage, since its effects are very similar on the animal economy.

In respect to dietetics, the invalid himself is generally well acquainted with the *kinds* of food which best agree with him; but much might be done towards a cure in this way by the patient, had he resolution enough to bound the *quantity* of his nutriment *within* the pale of digestion. Satiety ought never to be felt at table, by the bilious;—if it be, indigestion, flatulence, and oppression at the precordia are sure to ensue.

Some attention is also to be paid to the time of our meals in this class of diseases. Early breakfast—dinner at one or two o'clock—tea or rather coffee at six—and little if any supper, agree best with the generality of patients. Raw and acescent vegetables, cheese, oily and rancid meats, soups, gravies, and every species of confectionary are to be avoided: well roasted animal food, biscuit or stale bread, and rice or bread puddings ought to be the standing dishes.

Of all drinks WATER is the best, but as few who have been accustomed to inebriating liquids can be brought to relish the simple beverage of nature, a very agreeable and salutary potation may be formed in the following manner, and which will be found singularly beneficial in the wide range of bilious and dyspeptic complaints. Dissolve six drachms of dried carbonate of soda in a quart bottle of water,

and four drachms and a half of tartaric acid in another bottle of the same size: when wanted for use, pour out a wine glass full from each bottle, and throw them at the same instant into a tumbler, when an immediate effervescence will ensue, during which it is to be drunk off: this is good soda water, and a dozen of glasses thus prepared will not cost more than fifteen or eighteen pence. If ten drops of the muriated tincture of iron be previously put into the rummer a most excellent and agreeable tonic mineral water is produced, which strengthens the tone of the digestive organs in a very remarkable degree.

Fermented liquors are very generally detrimental, and the least pernicious of the vinous are sound Sherry and Madeira. As to spirits they are too often prejudicial; but if the patient will not or cannot abstain from them, brandy should be taken very much diluted with warm or cold water, and without sugar.

Patients of this description should not trust to their own resolutions in respect to quantity; but like Ulysses who caused himself to be bound to the mast to avoid the syrens, they should have the quantity of their drink and the degree of dilution specifically limited, and on no account to be exceeded.

Tea and tobacco, as narcotic herbs, are in general hurtful, and spirituous and anodyne tinctures and nostrums are to be utterly proscribed, as tending to give deeper root to each symptom, while they afford a fallacious and temporary relief.

As the want of repose at night has a remarkable effect in aggravating bilious and nervous disorders, every thing which can tend to interrupt that solace of our woes, ought of course, to be avoided. Of these, late hours and suppers are the principal. Tyrant custom has so inverted the order of *nature* in respect to the time of retiring to rest, that we all suffer more or less the penalties of despising her sacred laws! But as this subject will be more fully discussed in another part of the work, I shall only observe here that early hours both in retiring to and shaking off sleep, are indispensible in the treatment of this class of human maladies.

Subsect. 6.—*The Nitro-Muriatic Acid Bath in Bilious Diseases.* This Remedy has now come so much into use, and affords so decisive a proof of the CUTANEO-HEPATIC SYMPATHY, which I some years ago traced in the production and cure of bilious disorders, that I was naturally anxious to give it a trial in a class of diseases which I have long studied with more than usual attention. I have already seen sufficient, to be convinced that the *Nitro-muriatic Bath* is a valuable remedy, when aided by proper medicines internally; and I can corroborate the greater number of Dr. Scott's statements relative to its effects on the human frame.

§ 1.—*Composition and Mode of Administration.* Into a glass vessel, capable of holding a pint or more of fluid, put eight ounces of water, and then pour in four ounces of the nitric acid of the London pharmacopœia, and four ounces of muriatic acid, or the spirit of salt of the shops. This mixture may be labelled the "*Nitro-muriatic Solution*," and one ounce to a gallon of warm water will form a bath of medium strength, and such as Mr. Astley Cooper commonly prescribes. The proportion may be increased to one ounce and a half, or diminished to half an ounce of the solution to the gallon of water, according to the age, strength, delicacy, or other peculiarity of the patient. A bath of two gallons is generally sufficient for the feet and legs. A narrow and deep wooden bucket is best—such as will bring the water well up to the knees, without requiring more than eight or ten quarts of liquid. The feet and legs of the patient ought to be immersed in this bath, at a comfortably warm temperature—say 96°—and kept there twenty minutes or half an hour, just before going to bed. This may be done every night, or every second night, and the same bath will remain good for five or six nights. It ought to be kept in the wooden bucket, and a fourth part, or so, warmed up, every time it is used, in a well glazed earthen vessel, and added to the rest, which will make the whole of a sufficiently warm temperature.—Or a fourth part of the bath may be thrown away, and a fourth part of fresh hot water added, and half an ounce of the *Nitro-muriatic solution*, which will obviate the possibility of any decomposition taking place by glazed vessels. But I have not observed any inconvenience from warming up a part of the same bath, in the abovementioned manner. Dr. Scott thinks that sponging the skin with the bath is

equally as good as immersion; and that whether cold or hot, the effects would be the same. In this last I am very far from agreeing with him, and give a decided preference to the *warm* foot bath, or *warm* sponging, for very many reasons which need not now be explained. The strength of the bath must be regulated by the degree of irritability of the patient's skin. It ought, in general, to cause a prickling sensation, when the immersion has continued a quarter or half an hour. The patients usually observe that their feet and legs continue warm, and even in a perspirable state the whole night afterwards.

§ 2.—*Effects of the Nitro-muriatic Acid Bath.* When carried to a considerable extent, so as to bring the system under its influence, it occasionally induces faintness, and a degree of nervous irritation or restlessness, with sometimes a coppery taste in the mouth, and an increased discharge of saliva, but without the mercurial fœtor of the breath.—These effects are very fugitive, and very uncertain. I have known it produce a general itching all over the body, and in some cases, a considerable degree of pain in the soles of the feet.

"The nitro-muriatic acid bath," says Dr. Scott, "ap-
"pears in a particular manner, to affect the glands, and to
"alter their secretions; and on this power a great part of its
"value in derangements of the liver, seems to depend.—
"'*It sometimes very suddenly increases the secretion of*
"*bile;* and this effect may be kept up for a length of time.
"*It increases the perspiration, and often to a great extent.*'
"The almost *instantaneous* effects that it produces on some
"people, and its *suddenly causing a flow of bile*, are all
"unlike a remedy that is conveyed by the known channels
"of absorption. I can suppose that the effects of this
"remedy do not arise from the transfer of matter by any
"set of vessels; *but that they are the consequence of*
"*peculiar motions, which it has the power of exciting in*
"*the solids, or the fluids of the body.*" Now I appeal to the professional reader whether the above be not a complete admission of the *cutaneo-hepatic sympathy*, which I took such pains to elucidate in my work on tropical climates, in which Dr. Scott's opinions are corroborated, if not anticipated. On this account I deem it incumbent on me to shew that *others* have not overlooked the doctrine in question. In a few months after the publication of my work on Tropical Climates, the following passage appeared

in a periodical Journal, from the pen of Dr. Perkins, of Coventry, now a resident physician in Brussels. "One "recent writer has been duly sensible of this fact; and his "doctrine of *cutaneo-hepatic sympathy* will produce more "beneficial revolutions in physic, than have ever been "effected by the Stahlian dreams, the inert phantasies of "Hofmanic spasm, or the brilliant and delusive dogmas "and dangerous hypotheses of John Brown." *New Med. and Phys. Journal, April* 1814, *p.* 307.

In an excellent Latin thesis on Dysentery, by Dr. Archibald Robertson, *written long before I had the honour of his acquaintance*, the following passage occurs:—"Omnibus "sanè erit voluptati librum totum sed presertim *observa-* "*tiones novas de consensu inter cutem et surculos venæ* "*Portæ, et nexu inter sudorem et secretionem fellis*, "sedulò perlegere." p. 21. Finally, I cannot be insensible to the opinion of such a man as Dr. Armstrong, who, in page 171 of his Essay on Typhus, thus expresses himself: "The medical public, I conceive, is very much indebted to Mr. James Johnson, for having so clearly illustrated the connexion between dysentery and deranged functions of the *skin* and *liver*."

I am not, however, anxious to claim a discovery, but to propagate a truth. And as the attention of the medical world is now strongly directed to the subject, there can be little doubt of its receiving a proper investigation.

§ 3.—*Disorders to which the Bath is applicable.* Dr. Scott properly observes that there is a very large class of diseases in this country, denominated BILIOUS, which arise from deficient, superabundant, and depraved secretions of bile; hence spring derangements of the stomach, giddiness, feverish heat—head-aches—restlessness at night—cramps and spasms—melancholy, and many of those unhappy feelings to which the term "*Nervous*" has been applied. "In such cases [says Dr. Scott, in a paper privately circulated] let the patient sit in the tepid *Nitro-muriatic acid bath* for the legs, half an hour or less, according to circumstances, every night, or every second night. With some of these biliously disposed people, the first bath, and that in a few hours, produces decided effects. It purges—gives rise to the expulsion of dark-coloured feces *or bright-coloured bile*; or bile of a brown, a green, or a black colour, like tar mixed with oil. The pulse, in time, becomes quicker than natural, and a degree of restlessness takes place. These effects may be kept up for a number of days. They are

often, however, much longer in appearing. Where the bile is deficient in quantity, the effects of the bath are only known by the feces returning, by degrees, to their natural colour, and by a gradual improvement of the health. With people disposed to bile, it is necessary to keep the bowels very open during the use of the bath; for one of its effects, as I have said, and on which much of its beneficial tendency depends, *is to produce a flow of bile* into the intestinal canal, the consequence of which should be obviated by laxatives. Those inconvenient effects of the bath arise from the very powers which enable it to correct more depraved conditions of the stomach and biliary organs. Although this bath, with little disturbance, produces many happy effects, let it not be supposed that delicate, or even strong people suffer no temporary inconvenience. Let it always, on the contrary, be recollected that the advantages produced by it can never be fully appreciated until the patient has given up the use of it for a considerable time. Even those who feel no very sensible effects from it at the moment, generally, in the end, find their health improved.

"The great remedy at present for bile, is calomel, or mercury in some form; but this it is necessary, after a time, to repeat. The very same thing is true of the bath. When the bilious feelings return, it must be repeated. Patients must themselves discover how long they can go without its use, and when they return to it, two or three bathings of the legs, or washing the hands and arms for a few minutes with the *Nitro-muriatic bath*, or sponging the body more largely, will generally be found to bring relief. The periods of health gradually become longer and longer, till a complete recovery of it is effected."

As sponging the body with the N. M. water has nearly the same effects as the foot-bath, a small quantity may, at any time, be easily prepared by adding one drachm of the "*Nitro-muriatic solution*" to each pint of warm water, in a common wash-hand bason. By means of a large sponge, the thighs, legs, stomach, chest, or arms may be wetted with this mixture for ten or fifteen minutes daily. Or the abovementioned parts may be sponged alternately. With delicate people, or those who are very sensible to this remedy, it is often sufficient to immerse one hand, or wet one arm in the bath, for a few minutes. Washing both hands, or hands and arms daily will frequently be quite sufficient for delicate bilious patients.

This remedy bids fair to produce important effects in a

certain class of infantile diseases where the liver and bowels are deranged, which indeed is more commonly the case than is imagined. My friend Mr. Webster, surgeon of the 51st Regt. has witnessed the most decided salutary effects of the bath in his own child afflicted with jaundice. The great effusion of bile into the intestines, which almost immediately supervened on the employment of the bath, afforded a fine specimen of the *cutaneo-hepatic sympathy* in question.—Indeed the beneficial effects which result from the *common warm bath* in the diseases of children, are most striking, and as these effects are greatly increased by the addition of the *Nitro-muriatic acid*, we may fairly anticipate the most important advantages from this measure.

But, as will be plainly observable from the preceding remarks, the necessity of watching the functions of the various viscera, during the use of the bath, will be sufficiently obvious; and the judicious administration of appropriate medicines, particularly artificial Harrowgate water, and blue pill, with or without the decoction of sarsaparilla, while the patient is under its influence, must infinitely enhance its powers, and hasten the recovery of the patient.

Subsect. 7.—Cardi-hepatic Complaints; or complicated diseases of the liver and heart. I shall here call the attention of the faculty to that connexion between cardiac and hepatic complaints which a discriminating eye will frequently trace, and which is often of the utmost importance in regulating our prognosis in the latter class of diseases.

Two French authors of celebrity have written, one on the diseases of the heart, the other of the liver. Corvisart who writes on the former, maintains that in Cardi-Hepatic *combinations*, the heart is the organ *primarily* and the liver *consecutively* disordered. Portal, who writes on the liver, maintains that it is just the reverse; that where diseases of the heart and liver coexist, it will be found that the latter organ was first deranged. There is reason for suspicion of prejudice on both sides, for it is very unlikely in these complaints that the origin of the mischief should be exclusively in one particular organ.

When we consider how very difficult is is to detect the *incipient* deviations from healthy *function* as well as structure in either of the viscera alluded to, we shall be constrained to acknowledge that the proof of the priority can rarely be very evident. From anatomical and physiological reasoning, however, I think the probability is in favour of Portal's opinion. One anatomical reason is, that the liver

appears to be less under the influence of the action of the heart in health, than any other organ, on account of its peculiar circulation. The vast flow of blood to the liver does not come *per saltum* from the heart as it does to *every* other viscus, but is first strained through millions of capillary tubes, which moderate its velocity, while any impediments to the free action of the heart can only influence the reflux of blood from the liver, in common with that from the lungs, brain, and other organs. Secondly, enlargements of the heart can hardly ever disturb or press upon the liver, whereas enlargements of the liver may very readily encroach upon the capacity of the thorax, and so disturb the function or even structure of the heart.

The physiological reasons are stronger. We know that disordered states of the liver will have such a temporary *sympathetic* influence on the heart, as to lead us often to fear that there is serious organic lesion in that organ or its vessels, which fear is removed by observing the cardiac symptoms decline as the functions of the liver and digestive organs become restored. On the other hand, there is rarely any instance of temporary sympathetic disorder in the liver, from organic derangement of the heart, though we may sometimes find permanent combinations of disease in the two organs.

If therefore the various disordered states of the liver and its functions frequently exert a temporary influence on the *actions* of the heart, we may reasonably conclude that repetitions and degrees of this influence will occasionally lead to *permanent* derangement of *structure* in the same.

But, however this point may be settled, it behoves the practitioner, while treating liver complaints, to examine with a scrutinizing eye, whether there be any derangement of action, or symptoms of lesion of structure in the circulating organ. If he overlooks this, he will not only be miserably disappointed in his expected success, but, in all probability, will give a false prognostic to the patient or his friends, and thereby suffer in professional reputation.

Let us illustrate these observations by two cases, not copied from imagination but from nature.

We will suppose that ossification of the valves, or dilatation of the pulmonary cavities of the heart takes place, accompanied with appropriate symptoms, but frequently giving rise to swelling and tension of the right side, with various indications of liver derangement. The routine physician's attention is naturally fixed by these latter

apparently unequivocal traits of abdominal disease, while the less obtrusive features of disorder of the heart are either unnoticed or attributed to sympathy. He delivers a favourable prognosis, and enters on a vigourous plan of treatment; but although the hepatic symptoms are signally mitigated, or almost entirely give way, yet the patient regains not his health, and still complains of mysterious and inexplicable symptoms, not only in the breast, but in various parts of the body, which are considered nervous or perhaps imaginary. Soon afterwards, however, the delusion vanishes; the legs begin to swell towards night, while increased cough, difficulty of breathing, palpitations, languor, and various anomalous symptoms, assume a portentous aspect, till sooner or later, the unfortunate patient perishes with all the unequivocal symptoms of watery effusion in the chest; or suddenly expires in some unguarded moment of agitation or exertion, to the astonishment of his unprepared relatives, and the discomfiture and injury of his unsuspecting physician.

Again, in a patient previously exhibiting all the undoubted symptoms of liver disease, palpitations of the heart, stricture of the chest, dyspnœa, light faintings, irregularity of the pulse, and all the phenomena characteristic of weakened and disordered action of the heart, are occasionally, or upon the occurrence of any cause capable of strongly influencing the sanguiferous system, developed. In this case, if the physician happens to have had his attention much directed towards disorders of the heart, he will perhaps decide hastily that these are of that melancholy description, which only can admit of palliative treatment, and will deliver his unfavourable prognosis accordingly. But another more acute practitioner is called in. He institutes a minute enquiry into the commencement and progress of the malady. He discovers that the symptoms of the liver disease obviously *preceded* the derangement of the heart, consequently that the latter has been determined by the mechanical encroachment of the morbid liver, or by the constitutional infirmities resulting from this state of the biliary system, propagated to the heart, the *structure* of which, he has reason to hope, may not yet have suffered any permanent alteration. Assigning to the maladies of the two organs, their proper and relative importance, his curative plan will be as successful, as his views have been correct. Mercury and other remedies are exhibited:—

the disease of the liver yields; and all the dependant train of symptoms in the chest yields with it.

The inferences to be deduced from this reasoning are obvious. Had the physician who was consulted in the first case, correctly ascertained, as he ought to have done, the pre-existence of the thoracic, with respect to the abdominal malady:—had he acquainted himself by a cautious and deliberate contemplation of the attendant symptoms, with the incurable nature of the lesion affecting the heart, his unfortunate patient would not have been needlessly subjected to the torture and exhaustion of a full mercurial course, nor his own reputation have suffered from the delivery of a false prognostic.

On the other hand, had the physician *originally* employed in the last case, been equally circumspect, his inert and inefficient plan would have been exchanged for the more energetic and successful remedies of his fortunate successor; and his abilities and opinions would not have been brought into perhaps unmerited suspicion or contempt, by the unexpected issue of the case.*

---

* In a course of lectures on "those derangements of the liver, digestive organs, nervous, and circulating systems, resulting from residence in sultry climates, irregularity of living, mental anxiety, sedentary habits, and atmospherical influence," which the author is preparing for delivery, the mode of ascertaining the seat and nature of internal diseases, whether of structure or function, by the aid of thoracic percussion and abdominal compression, will be particularly delineated. He may here with confidence assert that much of his success in private practice has been owing to the accuracy of diagnosis which resulted from this neglected method of detecting organic diseases of interior parts. Without this mode of examination no man can say he has properly investigated the seat or nature of his patient's complaint.

To give an instance of the vast importance of abdominal pressure and thoracic percussion, I may observe that in a majority of cases where the liver is enlarged, there is nothing preternatural to be felt under the margins of the right floating ribs, to which place alone an examination is usually directed. But the fact is, that enlarged livers very frequently, indeed most frequently, encroach on the *chest*, rather than on the belly, and there produce a train of *thoracic* symptoms that still farther mask the source of the malady But a hand accustomed to thoracic percussion can tell, with very considerable exactness, how far the liver *rises* under the ribs, while the abdominal compression, in various postures, ascertains the extent of its *dip* in the belly; and thus an accurate diagnosis is formed between the diseases of the two cavities. How often these are confounded may be seen by Dr. Wilson Philip's invaluable paper on dyspeptic Phthisis in the Medico-chirurgical Transactions.

There is another circumstance that ought to be attended to in all cases of internal disease accompanied by doubtful, mysterious, or anomalous symptoms, and that is the state of the urethra. I have seen so many sympathetic affections of various remote parts of the body depend on slight *strictures*, or even irritation in the male urethra, that I have long made an examination of this kind, a material item in the process of ascertaining the seat and nature of diseases.

Sect. VI.—AERIAL VICISSITUDES PRODUCE SCROFULA, THE PREDISPOSITION TO WHICH IS TRANSMITTED FROM PARENT TO PROGENY.

If scrofulous turbercles in the lungs produce more cases of pulmonary consumption in England than in any other country, the *external* form of this disease, as it attacks the glandular and absorbent systems, is proportionally prevalent, and meets the eye of the medical observer at every step he takes.

The various theories which have been formed respecting the causes of this national complaint, are now beginning to be melted down into the simple explanation at the head of this section. While it may be remarked that they are almost all hinged on some *acrimony* in the fluids, yet some of these authors did not overlook the paramount cause abovementioned.

Dr. Hunter believed—"from the universal swelling immediately under the skin, in scrofulous patients, that the lymphatics took up some *noxious particles from the atmosphere.*"* Dr. Cullen, after stating that probably there is a peculiar acrimony of the fluids, which is the proximate cause of the complaint," allows afterwards that the course of the disease is usually connected with the *course of the seasons*. "Whilst the tumours and ulcerations, peculiar to this disease, appear first in spring, the ulcers are frequently healed up in the course of the succeeding summer, and do not break out again till the ensuing spring, to follow again with the season, the same course as before." *Vol.* 4. *p.* 364.

When we observe that, of all parts of the surface of our bodies, the glands of the *neck* are most frequently affected with scrofula, especially in females, and when we consider that this is also the part most exposed to atmospherical vicissitudes, we shall be strengthened in the opinion that *cold* is the principal exciting cause of this form of the disease.

Again, unwholesome food and inattention to the bowels may be considered as the principal causes of scrofulous affections of the mesenteric glands, which cut off so many children among the poorer classes of society. When the disease has once taken place, it is easy to conceive that it may be transmitted from parent to progeny; and that in many cases this predisposition is so strong, that all the care

* Cruickshank.

we can take to avoid those causes which call the scrofulous disposition into action, is insufficient to prevent its developement in the system.

In these cases, our great object is to avoid or remove every cause which is capable of exciting inflammation in any part of the absorbent system, by paying the strictest regard to the general health of scrofulously disposed children, whose frames are weak and irritable.

Exercise, a proper proportion of animal food, attention to the bowels, and warm clothing, will be the chief engines by which we may avert this terrible calamity. Exercise, though regularly persevered in, should never be carried to the length of inducing fatigue, since exhaustion and subsequent debility are sure to ensue, and of course accelerate that which we wish to protract or entirely obviate.

Animal food, at least once a day, should be allowed children of this description, and the quantity must be graduated rather by the digestion than the appetite. If fulness of the stomach, flushed face, and other symptoms of repletion or indigestion succeed the meal of animal food, the quantity must be reduced. Farinaceous food, in the form of puddings, rice milk, &c, may compose the remainder of the diet table, with abstinence from tea and hot slopping liquors. Children predisposed to scrofula should be allowed a considerable portion of time for sleep; but their bed clothes should be light, and nocturnal perspirations avoided or checked.

When no pulmonic affection exists, the cold bath and particularly the shower bath, should be employed, as an excellent mean of imparting tone and energy to the system at large. Children will in general, bear a greater degree of cold in the form of a shower bath, than in immersion, and it is therefore preferable. The temperature of the water should, of course, be graduated to the strength of the constitution, and in no case should the cold be so great or so long continued as to produce directly sedative effects. The subsequent glow and moderate reaction will be the criterions to guide us in the application of this powerful remedy. Friction with dry cloths for a quarter or half an hour after coming out of the bath, will excite the action of the absorbents over the surface, and enliven the cuticular functions, on which so much depends in the preservation of health.

On this account also, flannels next the skin are indispensible; and when the weather is cold or changeable, a fur round the neck will be a preservative against atmospherical vicissitudes, and will help to discuss the tumour of glands already enlarged, as well as prevent the inflammation and tumefaction of others.

External applications must also be used, in various stages of these scrofulous tumours. During the first or inflammatory stage, leeches should be frequently applied; and in the intervals, cooling evaporating lotions; they should not, however, be of so low a temperature as to induce a shiver. In these complaints, repeated local abstractions of blood are more serviceable than general bleedings, which can seldom be borne.

The digestive organs, however, should ever be sedulously attended to, and fecal accumulations or depraved secretions never allowed to remain in the track of the intestinal canal. Small doses of rhubarb and calomel, will clear, and, at the same time, strengthen the primæ viæ. These may be either combined or alternated with preparations of steel, which have a very salutary effect in such cases.

When the inflammatory disposition of scrofulous tumours is *certainly* subdued, and exchanged for a character of indolence, then quite a different treatment is to be adopted. The repeated effusions of coagulable lymph will have built up a tumour which will require a long and assiduous use of stimulating applications for its dispersion. During this process the greatest circumspection is necessary not to carry the stimulating plan so far as to excite reaction; otherwise we shall have inflammation and probably suppuration, instead of resolution for our pains. Indeed this is by no means an unfrequent occurrence in the practice of some surgeons.

For the cooling evaporating lotions, solutions of Sulph. Zinci, in the proportion of from five to ten grains in an ounce of water, are as good as any; and as the inflammatory disposition disappears, and changes to indolence, some spirit may be added to give a slight stimulus while evaporation is continued. When this last state is completely established, frictions with the Linim. Hydrarg. must be regularly persevered in, and if the site of the tumour will admit, an issue or seton may be inserted over it, or a blister kept open with Savine Cerate.

Friction with the bare hand, as recommended by Mr. Grosvenor of Oxford, has been found by other respectable practitioners to be of very considerable service in the dispersion of glandular tumours.*

Electricity as a means of promoting absorption is deserving of notice, but requires the superintending guidance of a judicious practitioner. During the use of the stimulating applications the absorption will be greatly increased by the exhibition of small doses of calomel, night and morning, combined sometimes with the Ex. Conii, and sometimes with the Carbonate of Iron. By a steady perseverance in these measures, suppuration will, in a great majority of cases be prevented.

When pus is actually formed in a scrofulous gland, and when the gland itself is not very hard or enlarged, it seems the best practice to puncture the abscess and discharge the matter, because the adhesions by which its boundaries are circumscribed are so slight that they are easily destroyed, and the matter spreads, with considerable loss of vitality in the coverings of the abscess.

When the matter is evacuated, and only a glairy fluid is daily squeezed out, a judicious and well-adapted pressure will do wonders in closing the sinuses and healing the sore.

---

* Goodlad on the absorbents. p. 146.

EPILEPSY.

SECTION VII.—This disease, so terrible in its appearance, obstinate in its nature, and deplorable in its consequences, is so illustrative of the great pathological principle investigated in this essay—namely, *derangement of balance in the circulation and excitement*, that there needs no apology for its introduction in this place; especially as I hope to make more fully known, a remedy which is but little used, though very useful in this opprobrium of the healing art.

Subsect. 1.—*Symptomatology.* Although the symptoms of Epilepsy are well known, we shall glance at their more prominent features.

The patient falls down and is convulsed; the convulsions varying from the slightest movements to the most violent and frightful struggles. The eyes are prominent and fixed; the eyelids closed, in general; but sometimes quivering, and shewing a portion of the white of the eye beneath. The face swells; becomes red, livid, or even black; while the muscles hideously distort the countenance. The patient foams at the mouth—gnashes the teeth, and sometimes lacerates the tongue. The suppressed groans and sighs are like those of a person who is strangling; although occasionally a terrific shriek escapes. Meanwhile the vessels of the neck and head are ready to burst; and the head itself is tossed about with ungovernable agitation which extends indeed to the trunk and members.

But the *involuntary* muscles are not exempt from this direful conflict. The pulse, at first small and contracted, expands, becomes quick, hard, irregular, or intermittent. The respiration is convulsive—while the eructations, borborygmi, vomitings, emissions of urine, feces, &c. profuse perspirations, hæmorrhages from the nose, eyes, ears, &c. attest the orgasm of the vital viscera.

After a period of various duration, but generally from five to twenty minutes, the breathing becomes easier, the pulse calmer, the convulsive motions less violent. The paroxysm ceases, and the patient looks around him in astonishment, enquiring what is the matter. He soon,

however, feels the effects of the late tumult, and his wearied and aching limbs demand repose. A refreshing sleep restores the patient to nearly his pristine state; but sometimes he languishes and droops, both in body and mind, for a day or two.

A considerable portion of Epileptic patients experience a *premonitory* sensation (aura Epileptica) which has been compared to a convulsive movement, a pain, a sense of coldness, a vapour, in the head, face, arm, hand, thigh, leg, chest, stomach, lower belly, womb, &c. always ascending to the sensorium, where it ends in the Epileptic seizure.

The periodicity of attack is as various as the seat of the premonitory sensation; having sometimes an interval of 12 months, and sometimes not more than as many hours.

But Epilepsy is not more terrible in its symptoms than in its consequences. By repeated attacks of this destructive enemy, the intellectual and corporeal functions are undermined, and both at length give way under its assaults.

Subsect. 2.—Etiology. In Infancy, where the nervous system is extremely mobile, the presence of meconium, or other irritating matters, or worms in the bowels, will dispose to Epilepsy, as will also the irritation of teething. Females are more subject to this disease than males, in the proportion of three to one. Among the occasional causes we may enumerate the retrocession of cutaneous eruptions—the drying up of old ulcers—the cessation of an habitual discharge. Parturition, Fright and other violent mental emotions are well known to occasion Epilepsy.

Subsect 3.—Pathology Our attention is to be particularly directed to the organ or part which is the common or general seat of the epileptic irritation, and from whence, at the moment of attack, the said irritation seems to dart in an instant to the sensorium, and there, by deranging the balance of the excitement and circulation, to produce the phenomena of the disease. This seat of irritation may be, and often is, in the coverings, or even substance of the brain itself, where, however, it only *occasionally*, as in the other instances, disturbs the vital functions of this organ. More frequently the domicile of the mischief is at a distance —especially in the digestive organs. In this case the premonitory symptoms are clearly marked, as pain in the stomach, tension in the epigastric region—loss of appetite, &c. When from worms, the patient, during the seizure, presses the abdomen with his hand. Indeed when children

are affected with epileptic fits, without any previous frights or other ostensible cause, and who, in the mean time, have pale complexions, dull eyes, dilated pupils, clayey stools—tumid abdomens, languid gait &c. there is scarcely a doubt but that worms are the exciting cause.

The biliary organ is very often the seat of the primary epileptic irritation, which is evinced by pain in the region of the liver—deranged intestinal secretions—borborygmi, and a yellowish suffusion previous or subsequent to the paroxysm. Even a morbid secretion of bile itself, as was observed by Hippocrates will determine Epilepsy.

From the father of physic downwards, Plethora has been reckoned one of the causes of this disease, especially in youth, and after the suppression of the menstrual or other habitual discharge.

But the *genital* organs, in both sexes, are more frequently the seat of the *Aura Epileptica*, than is generally imagined; indeed I think, from reasons which will hereafter appear, that these organs, whether in a state of irritation or torpor, (for opposite extremes often produce the same effects on the animal economy) are the grand sources of Epilepsy—the principal foci from whence the *Aura Epileptica*, radiates on the sensorium. Cytherean excesses—celibacy, and unnatural indulgences all tend to the production of Epilepsy. Of 162 epileptic patients in the Bicêtre on the 31st Dec. 1813, 119 were unmarried men, 33 married, seven widowers, and one divorced.

Morbid anatomy has hardly yet let in a ray of light on the pathology of this disease.* The various disorganizations which have been found after death in epileptic subjects have been much more frequently found in others who never had a symptom of the disease. Even when Epilepsy is determined by organic disease of the brain itself, this organic change can only be looked upon as a *predisposing* cause, otherwise its operation would be constant. It is the derangement of balance in the circulation and excitement alone that can produce the immediate phenomena of Epilepsy. The organic disease that predisposes to this *occasional* orgasm, is *always* present.

The schools tell us that Epilepsy arises from two different states of the vessels of the brain, and indeed of the system altogether viz. inanition and plethora—in some cases from

* Excepting the dissections of Sanders, Esquirol, and a few others.

preternatural irritability of the nervous system. The effects of apparent inanition, however, have probably been imperfectly understood. In numerous experiments on animals it has been proved that when they are bled to death [which must surely induce a pretty fair specimen of inanition] the vessels of the brain are generally found gorged with blood, and the ventricles full of water.* Here too, convulsions close the scene. But whether these result from the extreme depletion of the general system, or the local *turgescence* and effusion in the brain, may admit of doubt. Reasoning from analogy in other cases, the convulsions are more attributable to the *latter* than to the former cause. There is every reason indeed to believe, without any theorising, that the immediate cause of Epileptic spasms is a temporary local turgescence of the cerebral vessels, which local turgescence is determined by a temporary *super-excitement* in the nervous structure of the parts, on the well known principle, "*ubi irritatio, ibi fluxus.*" Upon this principle too, I believe, has hinged the best curative process that has hitherto been used with advantage in Epilepsy—namely, the removal or rather the prevention of local turgescence by evacuations, low living, and *counter-irritation.*

Why these states of temporary local plethora and super-irritation should take place, we are unable to explain; but but that they *do* take place, is, I think unquestionable. That a temporary *turgescence* of the cerebral vessels existed in every case of Epilepsy was evidently the opinion of Fothergill—perhaps of Cullen—certainly of Parry; but these eminent physicians seem to have overlooked the *preceding* state of super-irritation or excitement which I conceive to be not only the forerunner, but the cause of the plethora.

It may be said, if sanguineous turgescence in the vessels of the brain produced or accompanied the Epileptic paroxysm, how could some of the metallic salts, and many of the fetid gums have proved beneficial? It may be answered that all the laws which regulate the even balance of the circulation, and the circumstances which disturb its equilibrium, are by no means clearly ascertained. If, and indeed there is no doubt of the fact, the *nervous system* exercise a primary influence on the state of the *vascular*

* Dr. Seed's experiments, Medico-Chirurgical Journal.

system, then the operation of the foregoing remedies may be more easily conceived. But after all, what are the metallic salts and fetid gums but local or general excitants? Their salutary effects, however, have been explained on another principle by Dr. Fothergill. "Valerian, says he, "castor, the fetid gums, Empyreumatic oils, and if there "be any thing still more disgustful, commonly make a part "of the medicines proposed for this disease. May not, "therefore, these kinds of medicines, and most of those made "use of as specifics from ancient authority, now and then "confirmed with instances of benefit, derive the greatest "part of their consequence from their *quantity* or their "*disgusting qualities*, which, by lessening the appetite, "allow nature to recover herself, and shake off a disease "which indulgence principally produced." There may be something in this, and the argument is probably applicable to a great many other diseases, and other remedies.

The success which has lately attended the administration of certain stimulants, particularly the *Lytta*, lunar caustic, and oil of Turpentine, instead of militating against the doctrine of *cerebral turgescence and irritation*, as the proximate cause of Epilepsy, rather confirms it. These stimuli produce irritation in, and (what is called), a determination of blood to, certain other organs and parts of the body—particularly the urinary apparatus and alimentary canal; it is during the continuance of this irritation, or determination to a distant part, that the encephalon obtains an immunity from disturbance.

I shall here relate an occurrence that happened in my own practice several years ago, which I think strongly illustrates this principle, though I then viewed it in a very different light, and drew, I am convinced, a most erroneous conclusion.

Happening to be in a situation in His Majesty's Service, where a very considerable number of men were epileptic; but where, from particular causes, there was great temptation, and great inclination among the people to leave the service, I was naturally on my guard against imposition, and tried several means of detecting any simulated fits, but without success. In one case, however, I had much reason to suspect imposture, and I accordingly applied a blister from the nape of the neck to the sacrum, seven or eight inches in breadth, dressing the denuded surface with the Cerat. Lyttæ. The irritation of the blister, or absorption of the

fly produced a very violent strangury with bloody urine, and I began to fear I had carried my experiment too far; but I consoled myself with the idea of having detected my gentleman; for whereas he heretofore seldom passed a day without an Epileptic paroxysm, he did not now fall down once while the blistered surface was raw, nor for more than two weeks after it was healed. I concluded that I had hit upon the right key, and accordingly blistered my epileptic patients most extensively on the back, in almost all of whom strangury took place, as in the first instance, and no one fell down while the back was raw, or any heat of urine remained. I pronounced them all impostors, in my own mind, and my suspicions were apparently confirmed on finding them come back on the list, one by one, with the old complaints, in a few weeks after the blistering plan was left off. Provoked beyond measure, I blistered them more severely and extensively than ever, and with a result as before. Events occurred shortly after this, that separated me from my patients for ever; but I carried with me a conviction that I had only checked imposture; whereas, I now firmly believe that I had arrested, *pro tempore*, the attacks of real Epilepsy.

Since that period I have administered the Tinct. Lyttæ in numerous cases with good effect. When the urinary organs came under the influence of the medicine, the paroxysms were generally moderated in force, and the intervals lengthened in duration. I have had some patients who took as much as eighty or ninety drops twice or thrice a day, without any other inconvenience than a trifling strangury. They always observed that these drops had a most exhilarating effect on their spirits. Indeed I have lately found many beneficial effects result from the use of this remedy in certain derangements of the nervous system: and I am strongly disposed to think that in certain species of mania, it might be a powerful remedy.

Since the above was written I have been gratified by observing that Dr. Esquirols, a French physician of distinction, has come to a conclusion on the subject of Epilepsy that bears upon the present point. In a memoir, published in a respectable periodical work in Paris, he has given numerous dissections of Epileptic patients, in almost all of whom the spinal cord was more or less diseased. These *post mortem* appearances led him to the application of *moxa* to the spine, and it was attended with success.

RHEUMATISM.

SECTION VIII.—If Rheumatism be infinitely less fatal, it is infinitely more prevalent than Phthisis in this country. Indeed when we consider its wide spread among all ranks, ages, and classes of society; together with its obstinate nature and durability, we may set it down as adding a larger item to the sum total of human affliction, in this variable climate, than any other disease on the nosological catalogue. Although its baneful influence be felt in every habitable latitude of the globe, yet, as the prolific offspring of *sudden atmospherical vicissitudes*, its seeds are most profusely scattered with every wind throughout the population of our native isle. An investigation, therefore, of such a dolorific scourge, as strikes at the root of all social happiness by cramping exertion—banishing repose—and crippling the faculties both of mind and body, is peculiarly necessary in a work of this description.

Before entering upon the subject, however, it is proper to premise that Rheumatism, both acute and chronic, being a disease extremely common among seafaring people, there are few classes of medical society who enjoy greater opportunities of studying the complaint, in all its variety of forms, than those who have practised in his majesty's *naval* service.

Wishing therefore to strengthen my own experience, which has not been very limited, by that of my brethren, I addressed a string of queries on the subject, to a considerable number of my *naval* medical friends, in whose talents and information I had the greatest confidence. A mass of important information was generously and liberally communicated; but, as might be expected, there was, on certain points, both of doctrine and therapeutics, some collision of sentiment, and hence the process of assimilation became a matter of nice management. At length I constructed a *text* in which were embodied the sentiments of a great majority, with my own; and in the form of *notes* or particular allusions, I have given those prominent features of dissonance or peculiarity, which were incapable of amalgamation in the general picture of the disease, and in the general mode

of treatment. Altogether then, this Appendix on Rheumatism may be considered as emanating from a few *Naval Medical Practitioners*, who, having dedicated many years to the service of their country in various climates, are now pursuing an honourable career in private practice.

If aught of merit attach to this section of the work, it is mainly attributable to the following, and a few other of my distinguished naval brethren, Viz.

D. J. H. Dickson, M. D. F. L. S. of Clifton. Duncan M'Arthur, M. D. late Physician of the Royal Hospital at Deal. Dr. Porter, Mr. Henderson, and Dr. Felix, of Bristol. J. B. Sheppard, Esq. Surgeon, Witney, Oxfordshire. Archibald Robertson, M. D. Northampton. Dr. Quarrier, Fort Monckton. Mr. Cunningham, H. M. S. Rochefort. To the genuine professional liberality of these gentlemen, and especially of the *first*, the author of this Essay is much indebted; and he feels equal pleasure in acknowledging the obligation, as in receiving the favours.

§ 1.—*Symptomatology.* The invasion of *acute Rheumatism*, or as it is sometimes termed, *Rheumatic fever*, is usually ushered in by many of those phenomena which precede or accompany the onset of other inflammatory affections, viz. lassitude, inappetency, depression of strength and spirits, alternate chills and flushes, quickened pulse, sense of soreness over the body, thirst, slight fever. In the course of twelve or twenty-four hours, the *local* or characteristic symptoms appear. These are pain, and generally vivid redness, in two, three or more of the joints—as the knees, elbows, hips, shoulders, ankles, wrists—rarely the toes or fingers. When perfectly quiescent, which is seldom the case, the patient is comparatively easy; but on the least movement, an agonizing pain is propagated along the muscles from one joint to another. The seat of rheumatic action is frequently transferred from articulation to articulation, with great rapidity and irregularity, throughout the whole accession, which is thus sometimes protracted to a long and indefinite period. Cotemporary with the pain and redness, or nearly so, a *tumefaction* of the parts obtains, which, though in itself extremely tender to the touch, often brings with it some mitigation of the original pain.—Uneasy now in every position, and yet scarcely daring to move, the patient lies sleepless and restless on a bed of torture. The fever becomes established—and is characterized by great heat of surface—urgent thirst—furred tongue—constipation—full pulse, ranging from 90 to 110, but very variable in respect to hardness or softness—occasional headache with tendency to delirium—nocturnal exacerbations and morning remissions—profuse clammy perspirations, without corresponding softness of the skin, or mitigation of the fever or local pains. The urine is at first scanty and high coloured, depositing afterwards a copious lateritious sediment—the blood from a vein is buffy—the countenance exhibits a language of features indicative of great distress, anxiety and despondency.

In this way acute rheumatism runs a course of from two to six weeks, or even more. After the first fortnight or three weeks, the fever generally declines; and the final termination of the disease is occasionally marked by a critical sediment in the urine, an increased secretion from the intestinal canal—or a mild and salutary perspiration. It is *rarely* if ever fatal in itself, excepting by metastasis.—There is less variety in the symptoms of the disease than in those of most other acute affections.

§ 2.—*Pathology.* Much diversity of opinion prevails respecting the *seat* of the rheumatic inflammation; some placing it in the *cellular* tissue—some in the muscular fibre—some in the ligamentous structure—others [for instance Parr] in the coats of the arteries. It is not likely that it should be *exclusively* fixed in any one of these; and it is nearly certain that, like gout, it occasionally attacks them all. Nevertheless, observation would lead us to conclude that its *favourite seat* is the white fibrous tissues; and this conclusion is confirmed by the well known fact, that in its *metastases*, it selects, in nine cases out of ten, a similar structure—namely the serous membranes, *internally*. This last is demonstrated by *dissection*, a test which can rarely be applied to the original or *external* form of the disease.

In respect to the inflammation itself, it evidently differs *essentially* from that of the common phlegmasiæ, (say traumatic or pneumonic) for the following, among many other reasons. 1st. Its *erratic* nature. 2d. Its never terminating (for *exceptio probat regulam*) in *suppuration.** 3d. Its *sudden* cessations, remissions, and returns. 4th. Its *duration*, which far exceeds that of all regular acute inflammations. 5th. Its inobedience to the same treatment that succeeds in other phlegmasiæ, and its obedience to very different plans. In all these instances, it manifests its affinity to the inflammation of *Gout*, which is acknowledged to be a specific disease connected with the general constitution.

The *fever* has been considered, and by one of the latest writers on the subject, as purely *symptomatic* of the local affection.† But this assumption is invalidated, if not entirely overthrown, 1st. By the fact, that, generally speaking, the pyrexia *precedes* the topical inflammation, a circumstance that never happens in the unequivocally sympathetic fevers of other phlegmasiæ. Do we ever see pyrexia *antecedent* to pain, swelling, or redness in a wound, or to

---

* A physician of eminence, but whose name I am not at liberty to mention, observes "that the appearance of the coagulable lymph on the surface "of the blood drawn in *Acute Rheumatism*, is materially different from that "thrown up in blood drawn in *Pneumonia*, *Hepatitis*, and other local dis-"eases of an unequivocally inflammatory nature. In the *former*, it is "gelatinous—clear white, or bluish white, and somewhat pellucid, soft, or "tender;—in the *latter* diseases, it is yellowish white, very opaque, and "of a firm leathery texture." c. c.

† Vide Dr. Scuddamore on Gout and Rheumatism, 2d Ed. p. 532, where he says "It appears to me that rheumatism in its *primary* character is rather a local than a constitutional disease. The *pyrexia* which arises, as connected with the inflammation of the affected textures, *is truly sympathetic.*"

pain, dyspnœa, or cough in pulmonitis ? 2d. The causes which predispose to, or excite acute rheumatism, are seldom local, but, on the contrary, act through the medium of the constitution generally. 3d. Symptomatic fever does not *remit*, as that in rheumatism ; neither is it accompanied by *perspirations*, as in the latter case. 4th. The rheumatic pyrexia occasionally subsides, leaving the local affection nearly as violent as ever. 5th. The *chronic* form of the disease is unaccompanied by fever, although like some forms of chronic gout, it is equally distressing as the acute.

As Dr. Porter of Bristol well observes :—" we may lessen the pain in a part swollen with rheumatic inflammation, or even drive it from that part to some other by refrigerants ; but we cannot thereby remove the *fever*. There appears to me a *constitutional* peculiarity in rheumatic subjects ; for in them, when the heart is excited to reaction by the application of cold and damp bodies to a large extent of surface, a swelling in the integuments of one or more large joints presently succeeds ; and this local affection continues, with various degrees of intensity throughout the disease—but always, in my opinion, *dependent* on the force of the general vascular action for the intensity of pain, and consequently not the cause of the pyrexia." This opinion perfectly coincides with that of my able friend Mr. Sheppard, who observes—" the pyrexia has not appeared to me to depend, originally, in any degree, on the local affection ; on the contrary, I believe the articular inflammation to be solely the effect of the constitutional disease."

Thus we see a remarkable coincidence between the rheumatic and arthritic affections both in their local and constitutional phenomena—-a coincidence and analogy that strongly support the opinion of a *family aliance*, at least, in the two diseases. Stoll maintains that they are only varieties of the same disorder. *Rat. Med.* Bergius, that they are convertible. Sauvages and various other nosologists distinguish many cases by the name of *Rheumatic Gout*. John Hunter, who opposed this doctrine, considered a severe illness in his own person to be *Rheumatism*, although it ultimately turned out to be disguised gout—*podagra larvata. (Home's Life of Hunter).* A modern and acute nosologist, Mr. Good, observes, " Now gout, rheumatism, whether acute or chronic, and white swelling, however they may differ in various points, as well of symptoms as of treatment, have striking characters that unite

them into one common family or genus. Gout and rheumatism are so nearly allied in their more perfect forms, [perhaps he ought to have said "*less* perfect forms"] as to be distinguished with considerable difficulty. *Nosology. p.* 192.

Dr. Porter, a gentleman of distinguished professional talent (and in whose family indeed, talent seems *hereditary*) does not acknowledge the *family alliance* of gout and rheumatism. "Rheumatism," says Dr. P. "has no real analogy to gout. They are children of different parents. They do not visit precisely in the same circle of friends—nor do they inhabit the same dwellings. They resemble each other as much as the Admiral resembles the Boatswain." All this we may grant, and yet cleave to the idea of *relationship*, however distant it may sometimes appear. My able correspondent, Mr. Sheppard, expresses himself thus: "In point of obstinacy at least, if not in its other features, rheumatism bears a close analogy to gout, and I am disposed to believe that there is some truth in the common opinion that the *former* is the disease of the Plebeian, and the *latter* that of the Gentleman." Here then we may reconcile contradictions by the simile above-mentioned, for as long as the Admiral and Boatswain acknowledge Neptune for their common parent, the *former* will have gout and the *latter* rheumatism.

Lastly, granting that gout and rheumatism be essentially different both in their nature and phenomena, yet are we to bear in mind that their *causes*, predisponent and exciting, are almost always *blended* in greater or less proportion, and, notwithstanding a dogma to the contrary, it is a certain fact that *two constitutional diseases can exist at the same time in one individual*, in the shape of a *Hybrid* bearing affinity to both parents. The fallacious doctrine, indeed, of *unity or simplicity of cause*, has proved an *ignis fatuus* in many paths of medical investigation. Whoever minutely watches the modes of life in which all classes are now trained, will acknowledge that few gouty subjects are secure from the general causes of rheumatism—or rheumatic subjects from some of those which predispose to gout.—This may reconcile many contradicting opinions, and account for the difficulty of *diagnosis* in cases of complication.

This discusion is not a matter of speculation, as it will bear upon, and elucidate an important point in the treatment of the disease.

§ 3.—*Terminations.* Where the disease does not terminate in perfect recovery, the most usual *sequelæ* are such changes of structure and function in the textures originally affected as constitute *chronic* rheumatism. These lesions appear principally in the Bursæ Mucosæ and sheaths of the tendons, into which a transparent gelatinous fluid is effused, while the membranes themselves are thickened. Such a degree of *debility*, also, both local and general, is sometimes left by severe attacks of acute rheumatism, as predispose to other dangerous or obstinate diseases. With the local debility there are sometimes wasting of the members, nodes of the periosteum, and nodosities of the joints.

Translations. "Rheumatismus externas partes occupans, fixus, periculo carere solet; vagus, internas nobiliores partes petens, maximas sanitati ac vitæ insidias struit."—*Calisen.* Dangerous and even fatal translations of the rheumatic inflammation to internal organs, particularly the brain, lungs, kidneys, and, in some very rare instances, to the stomach, have been observed by physicians, in different ages and countries. Dr. Haygarth saw *twelve* fatal translations out of 170 cases! I have seen one fatal translation of acute rheumatism to the brain, where the patient died on the 3d day, notwithstanding the most decisive evacuations, in every way, were put in force. Dr. Scudamore met with a case of rheumatic metastasis to the serous membranes of the brain, in a young lady of delicate constitution, aged fifteen, where *effusion* proved suddenly fatal. "It was under circumstances of quick transference of the inflammation of the limbs from one part to another; but the inflammation of the limbs did not cease with this new action of the brain." *Treatise, p.* 522.

Dr. Bateman in his report from the Carey Street dispensary, 1816, relates two cases of rheumatic metastasis proving fatal.—They were both strong muscular men about 40 years of age. "In the one, the pain and swelling of the knees "and ankles, after having continued a few days, with little "benefit from sudorifics and laxatives, became less trou- "blesome, but did not altogether cease, and the patient "complained of a severe pain, returning at short intervals at "the *pit of the stomach*, and greatly impeding his breathing. "He had no cough. The pulse was frequent, but extremely "soft and compressible; and there was a considerable "tremor of the hands. *Opium, with other stimulants,* "*produced a temporary relief*; a blister was also employed,

" but ineffectually; and the *pain and difficulty of breathing* " *rapidly increasing*, the patient died. The second, a " remarkably stout and heretofore healthy man, was exposed " to the rain of the second of May, and was seized the same " evening with shivering and great pain in all his joints. " On the fourth I saw him. He complained severely of " the pains in all the large joints; the knees and ankles " were slightly swelled. He had also a slight dry cough, " and some pain in the chest. *The pulse was frequent*, " *full, and strong*. Although experience seems to have " decided against the propriety of blood-letting, at least " in London, in rheumatic fever, yet the congeries of " symptoms in this instance, and especially the combination " of the slight pulmonic affection, led me to order about 12 " ounces of blood to be taken away; a sudorific was given " at bed-time, and ordered to be repeated in the morning. " But he felt himself restless and uncomfortable, and I found " him out of bed, with the symptoms apparently more " favourable. The next day (sixth of May), *the difficulty* " *of breathing was considerably increased*, and he com- " plained of little pain in any part. The pulse was more " frequent, but less full and strong. A large blister was " applied, but removed in the night, and not replaced till " morning. The difficulty of breathing and cough had " rapidly increased; there was obviously already a great " effusion in the lungs, and he was unable to lie in the " horizontal posture. At my next visit (eighth of May), " he was dead. It is probable that a more liberal use of " the lancet might have been beneficial in this instance; in " the former it may be doubted whether it was admissible."

The following interesting case of fatal metastasis to the lungs, observed by John Hall, M. D. an eminent practitioner in Berwick, was obligingly communicated by Dr. Dickson of Clifton.

" The subject of this case was a female servant, in a family which I attend, aged 22, and of a full habit. Her mistress requested me to visit her for what she called a sprained ankle. Upon examination, there was a considerable degree of redness, about the size of a shilling, upon the *malleolus internus*, which was very painful on pressure, or on attempting to move; and supposed to have been excited by a sprain. The pulse was quick, the skin hot.— I ordered some leeches to be applied to the part affected, and a dose of calomel and jalap to be taken. Next day,

the pain was excruciating all along the limb, and the knee was very much swelled; twenty-two ounces of blood were taken, and a bolus given of calomel, antimonial powder, and opium. At night the pain was somewhat relieved.—*Third day*, she complained of cough, dyspnœa, and pain in her side—was bled twice largely; a blister was applied to the side; and the calomel and antimonial powder were continued, without the opium. *Fourth day*, symptoms continued; she was again bled twice; on the second abstraction syncope was induced; another blister was applied to the pained part, and her medicine continued.—*Fifth day*, dyspnœa and pain in the side relieved, but the frequency of the pulse not diminished; free expectoration. *Sixth day*, complained of pain in the other side, to which also a blister was applied—expectoration copious. *Seventh day*, a large quantity of pus was brought up by coughing, and she appeared much exhausted; but the breathing was easy. *Eighth day*, continued much in the same state.—*Ninth day*, the breathing became more difficult and the expectoration less free. Died next day."

Metastasis or Translation to the Heart.

This is a subject of only modern observation, which would induce us to believe that *new* forms of disease spring up, from time to time, in consequence of the varying state of moral and physical causes, and the *predispositions* thence resulting. Thus in a turbulent era, when the mental emotions are vivid, and the action of the heart perpetually disturbed; it is reasonable to suppose that certain *erratic* inflammations, as those of gout, rheumatism, erysipelas, &c. may fall more frequently on an organ whose function is preternaturally deranged, than at other periods. However this may be, the metastasis in question is one which deserves our fullest consideration.

Dr. Baillie, on the authority of Pitcairn, appears to have given the first hint of this metastasis; since which, many cases have appeared in periodical and other publications, both in this country, and on the continent.

Dr. Odier of Geneva, in his, "*Manuel de Medicine Pratique*," published 16 or 17 years ago, mentions among the various symptoms which are apt to supervene on acute rheumatism, an affection of the heart, that frequently degenerates into a chronic complaint, the prominent features of

which are, a hectic fever, from slow cardiac inflammation of the rheumatic kind; accompanied by quickness and irregularity of pulse—oppression on the chest, cough, &c. Anasarcous swellings often occur, and the patient is generally cut off in a sudden and mysterious manner.

Dr. Wells has collected several cases of this kind, in the 3d vol. of Transactions for the improvement of medical and chirurgical knowledge, which may be consulted with advantage.

Sir David Dundas, in a paper read before the Medico-Chirurgical Society, in Nov. 1808, draws the attention of the faculty to this subject. He met with no less than nine cases in the course of 36 years. The principal symptoms were—great anxiety and oppression at the præcordia—dyspnœa, increased by motion and by taking food to an alarming degree—acute pain in the region of the heart, but not always—preference to lying on the back—great palpitation of the heart—violent pulsation of the carotids—noise in the ears—giddiness in the head. In some cases the action of the heart was so very strong as to be distinctly heard, and to agitate the bed. The pulse is always quick—often irregular—generally hard. Towards the close of the disease, symptoms of water in the chest are developed, with swelling of the legs, and frequently ascites. In all the nine cases, the disease succeeded one or more attacks of acute rheumatism. In all, the patients were young—only two above 22 years of age—six males, three females. Most of them struggled with the complaint many months. Seven died, one is doubtful—one recovered, apparently from very rigid adherence to vegetable diet and repose. Six cases were examined after death—they all but one agreed in the following particulars:—Heart uniformly enlarged—Pericardium adherent to the heart—left ventricle most enlarged in size, *but not in thickness*—Substance of the heart pale, soft, and tender. In the case of exception, there was no cardi-pericardiac adhesion; but instead thereof water in the pericardium. In these cases "The muscular structure of the heart was not increased in thickness beyond what it commonly is; so that its powers of action were not augmented proportionably to its bulk."

Dr. Pemberton states the following particulars of a case under his care. Mr.——, aged 36, had been long subject to acute rheumatism. After being troubled during the whole winter with the complaint, he was seized in March,

with pain in the region of the heart—difficulty of respiration—great palpitation and anxiety. The least motion appeared so to aggravate these symptoms, that he dared not to move or speak. He had rigors and profuse sweats. *Slight cordials—venesection—blood not buffy.* In three days, he ventured to move; but great palpitation and anxiety resulted. When perfectly quiescent the palpitation disappeared—He scarcely moved for a month. The hand, placed on the heart, felt a great throbbing; and this was continued along the carotids, causing an unpleasant noise in the head. *Meth. Medend.* Seton over the region of the heart—three grains of Ex. Conii and half a grain of digitalis three times a day—abstinence from fermented liquors—great temperance. The irregular action of the heart continued at intervals eight months, when it gradually lessened, and in a year totally disappeared.

Dr. Marcet met with two cases of rheumatic metastasis from the extremities to the chest, producing symptoms analogous to the foregoing; but less in degree. They both proved fatal—in both, the heart was much enlarged.

An additional, and very interesting case is subsequently related by Sir David Dundas, the particulars of which are as follow:—A woman, ætat. 29, who had twice experienced acute rheumatism, was seized, after exposure to wet, in September, with rigors, succeeded by pain across the chest, difficulty of breathing, increased by the least motion—strong palpitation of the heart—violent action of the carotid arteries—sense of great debility—apprehension of death. In this state she had been for 14 days, when first visited. She had not been in bed for many nights; her legs and thighs were swollen—pulse weak, and so quick as to defy calculation—no cough. *Blister to the region of the heart—digitalis.* By this last remedy, the pulse became less frequent; but disagreeing, it was left off. The action of the heart now became tremendous—she got weaker daily, and died at the end of two months.

Dissection. Left lung compressed to very small dimensions—Heart enlarged to a most extraordinary size, and occupying nearly all the left side of the thorax. Lungs on both sides strongly adherent to costal pleura—a pint of water in the thoracic cavities—considerable quantity of water in the abdomen.

In the 5th vol. of the Edinb. Journal, p. 299, two cases of inflammation of the heart are related by Mr. Crowfoot, *one* of

which I conceive to have been decidedly rheumatic metastasis. W. Lewis, ætat. 23, tall, thin, formerly employed in husbandry, but lately a gentleman's servant, applied for relief on the 22d Dec. 1808, complaining of considerable pain in his head, back, and *limbs*, with general pyrexia, prostration of strength—furred tongue—high coloured urine, &c. "Attributes his illness to *cold* caught by exposure to the night air," Emetic—purgatives—small doses of calomel and saline medicines, with anodynes at bed time. "This "plan was continued till the 29th, when the fever appeared "to take on decidedly a *Rheumatic* character. The feet, "knees, and wrists became swelled and painful; and he "*began* to complain of pain in his left side. The debility "was much increased; a stimulating embrocation was ap-"plied to the side. The rheumatic symptoms became "more severe; and the common remedies for acute rheu-"matism, *with the exception of bleeding*, were made use "of." Towards the end of January, the pain of side, and cardiac distress became the prominent symptoms, "still seeming to *alternate* with the pains in the extremities." On applying the hand to the left side of the thorax, the heart was felt to beat with great labour and difficulty. The pulse, though weak, gave a very peculiar jerking feel to the finger. "It is but due to truth and candour to state, that, "till this time, the real nature of the disease had not been "suspected; and my patient, naturally of a weak consti-"tution, was now so extremely reduced, that I did not feel "myself justified in employing what, in the beginning, "might have been of the most essential service to him, "the free use of the lancet." *Digitalis—Blisters.* The former was discontinued, as it produced great irregularity of pulse, without any benefit. Mild nutritious diet—opiates. He rallied a little, and was able to ride out on horseback; but towards the end of February, Hydrothorax approached, and cut him off with the usual symptoms on the 5th of March.

Dissection. A considerable quantity of water in the cavity of the thorax—twenty-four ounces of fluid in the pericardium. Heart and pericardium bore strong marks of *recent* inflammation; their surfaces being rough with depositions of coagulable lymph, which connected the heart with the pericardium in several places.

The next case in elucidation of our present subject is more consolatory. It is detailed by Mr. Russel of Bir-

mingham, in the 10th vol. of the above-mentioned journal, and the following is an abstract. Seth Basset, a waggoner, ætat. 22, attacked with acute rheumatism in the latter end of May, 1810. Pain at first in legs and ankles, afterwards in the shoulders and arms. He was bled six times, by which he was so much relieved, that he returned home, a distance of ten miles. 27th June, came under Mr. Russel's charge, with pain in the ankle, which was swelled and inflamed—pain in the left side of the chest—pulse full—tongue furred—skin moist. Twelve leeches to the side—feet and ankles to be fomented with flannels and hot water—calomel and purging salts. 28th. Pain of side easier, legs and ankles swollen and exceedingly painful. 29th. Pain and inflammation suddenly left the extremities, which yet remained swollen—great distress in the chest—breathing short and difficult—Heart and large arteries throb violently—pain in left side *on pressure*—between sixth and seventh ribs of that side, a circumscribed red spot, the size of half-a-crown—pulse 62, large and full, communicating a jarring sensation to the finger—easiest posture horizontal, with head a little elevated. Venesection to eighteen ounces, with great relief—pulse rose to 70—antimonials and digitalis prescribed—fomentations to the extremities continued. Remained better during two days. 2nd July, symptoms returned—pain in the chest—breathing short and quick—legs œdematous. Venesection on the following morning—digitalis increased to 25 drops every four hours. 4th July. Pulse 88 and full—symptoms less violent—pain of left side not returned on the 5th. He breathes easier; but the heart and arteries still beat violently—pulse 92 and full. Twenty ounces of blood abstracted—Digitalis increased to 30 drops 4tis horis. He was much relieved by the bleeding, and continued so till the 18th, when the pain of chest and violent action of heart and arteries again returned, together with a distressing beating noise in the head. He was now taking 40 drops of Tinct. digitalis thrice a day, without any perceptible effect on the pulse.—He was very low, and, for the first time, dreaded the lancet. Bled to eight ounces—Syncope. Following day, symptoms so violent as to require another bleeding to 12 ounces, which produced considerable mitigation of symptoms. 20th. Exceedingly low—pulse irregular, and intermitting—no pain, but giddiness in the head—Digitalis discontinued—a light cordial prescribed. Lay in a hori-

zontal posture, and was scarcely able to speak; pulse feeble, and intermitting every third stroke. Appears sinking very fast—takes nothing but a little wine. 23d. Much better—free from pain—pulse regular—breathing free—legs œdematous—complains only of extreme debility. In two months was able to work, and he has now continued two years free from complaint, excepting palpitation of the heart upon any extraordinary exertion.

The next case on record, in the same journal, is by Mr. Penkivil of Plymouth. Mrs. W. a thin delicate woman about 50, after some days illness with pyrexial symptoms, was found by Mr. P. much prostrated in strength—skin hot—pulse slower than natural, but full, with vibrating, wiry throb—tongue coated—bowels costive—ankles swelled and painful, though not red—knees swelled and exceeding painful—excruciating pain, violent throbbing, and hissing noise in the left temple. Leeches to the temple—blister to the back of the neck—sudorific dft. at bed time, purgative next morning—*sinapisms to the painful joints.* Next day, head and temples somewhat relieved—joints of inferior extremities equally painful as before—joints of superior extremities becoming sore—Cathartic pills repeated; nitre and antimonials thrice a day—*joints to be rubbed with camphorated oil.* This plan produced alleviation of some, aggravation of other symptoms—the inferior joints got better, the superior worse—the pain of temple was mitigated; but the hissing noise remained. Now came on, great watchfulness—remarkable *anxiety at the præcordia*, to quiet which, an *opiate* with an antimonial was given at night, and the powders were changed for camphor mixture with acetate of ammonia every four hours. Some ease was procured; "but *now* the complaint assumed a change of "symptoms. The inflammatory action seemed to fly from "the circumference to the centre. The heart and arterial "system became peculiarly affected. Their pulsations "were slower than natural but remarkably full and violent." These orgasms were now and then followed by a sudden collapse, faintness, and twitchings. The pain in the temple and hissing noise were increased, and the case assumed a serious aspect. Venesection from the arm to 16 ounces; and the bowels being previously opened, an anodyne sudorific draught. Blood not particularly buffed—symptoms relieved by the venesection. Systole and diastole of the abdominal aorta could now be observed with the eye—

yet the pulse was at 40 in the minute. Blister to the left side of the head—antimonials with jalap—after which an anodyne at bed-time. Next morning the vascular orgasm reduced, and the pulsations more numerous in proportion. "Following this plan of treatment (query, was venesection reiterated?) Mrs. W. in the course of a week was convalescent."

I have been the more minute in this case, as I shall have occasion to refer to it again in the therapeutical section.

An interesting communication upon this formidable malady is given in the *Journal General de Medicine* for February, 1815, by Dr. Matthey of Geneva, which I shall transcribe in the terse language of my esteemed friend, that zealous cultivator of medical science, Dr. Shirley Palmer of Tamworth.

After observing that rheumatism of the heart may terminate fatally, degenerate into chronic disease of that organ, or admit of cure by the resources of medicine, Dr. M. proceeds to illustrate, by observations drawn from his own practice, these three different modes of termination.

Case 1. *April* 1813. M. Bresse, ætat. 37. *Symptoms.* Severe pain of the right hip, increased by motion—frequent, full, hard pulse. *General and local blood-letting—blisters, and antimonials* relieved these symptoms. Urine at first scanty, high-coloured, and depositing a sediment, restored to the natural state. Digestion vigorous. The pain of the thigh continues yet, in a slight degree—the whole extremity somewhat swollen—wrists becoming suddenly painful and tumified.

May 14*th.* Great pain in the night: not relieved as usual by an opiate. 15*th Morning.* Pain increased, and an expression of indescribable uneasiness—no pain in the præcordial region—no oppression or cough—pulse irregular, small, frequent—stroke of the heart unusually perceptible. *Blisters to the legs and region of the heart—sedatives internally.* 5 *o'Clock, P. M.* Distress extreme—bowels copiously evacuated—syncope for a few moments, on again lying down—weakness and distress went on increasing—Died at eight o'clock—body not examined.

Case 2. A boy, nine years of age. *Symptoms.* Pains of the shoulders and thighs, subsiding without medicine. Convalescence not marked by return of wonted vivacity. walking and climbing produce great fatigue. Palpitation of the heart—difficult respiration—oppression—lividity and

swelling of the face. Three months from the cessation of the original pain, the extremities became œdematous—urine scanty—pulse frequent and irregular. One month afterwards, the symptoms all aggravated—intolerable pain of the legs—pulse irregular and intermittent—anasarca—ascites. Died suddenly. *Remedies.* Leeches, venesection, blisters, diuretics, opiates. *Morbid appearances.* Serous effusion in the thoracic and abdominal cavities—pericardium much thickened, and strongly and universally adherent to the surface of the heart—heart itself not enlarged.

Case 3. A boy of delicate complexion, ætat. 10. Attacked in the beginning of 1809, by symptoms of rheumatic fever; wandering pains of the limbs and region of the heart—sense of suffocation, especially on lying down or turning in bed. These symptoms entirely subsided in a month, and recovery seemed perfect. *Feb. 3d.* Bore a journey and much exertion with impunity. 5th. Complained suddenly, on lying down at night, of severe pain of the left side and suffocation; was sensible of his approaching end, and almost immediately breathed his last. *Morbid appearances. Encephalon.* Vessels gorged with blood; slight gelatinous effusion between the dura mater and arachnoid membrane; small quantity of serum in the lateral ventricles; much fluid blood issuing from the vertebral canal. *Thorax*: much serum effused, particularly in the left cavity. The heart completely adherent to the diaphragm, mediastinum, and lungs; twice its natural size, and containing, between its own substance and the pericardium, several layers of a substance which, on the surface in contact with the heart, resembled a firm dark-brown jelly; while the other, adhering strongly to the pericardium, displayed the colour and appearance of muscle, but without being regularly organized. The internal surface of the pericardium, here and there, lined with a grey and soft gelatinous matter, readily separating from the heart: superficial vessels much injected. *Abdomen:* mesenteric glands slightly obstructed; small intestines inflamed.

Case 4. A lady, aged 24, of strong constitution, seized in June, with acute rheumatism. Pains of all the limbs, vehement during the first eight days; then gradually diminished. Fifteenth day; complained of severe pain under the left breast, extending to the sternum and constricting the thorax; other *symptoms*, extreme distress, dyspnœa, palpitations of the heart, pulse wiry, frequent, irregular.

Prescribed repeated venesection, leeches, blisters, digitalis, camphor, and Dover's powder. Sixteen days from the invasion of these symptoms, the patient was able to rise from bed and sit up during part of the day. Palpitations, dyspnœa, continue; urine scanty. These symptoms soon removed by digitalis and nitre. A relapse experienced in August. The former remedies, and tepid bath, employed with success, but convalescence tardy; the slightest exertion followed by palpitation and dyspnœa. Recovery not complete till October.

Case 5. A lady, aged 18, subject to rheumatic pains, felt, on the morning after a dance, slight pain in the shoulder, and suddenly all the symptoms of metastasis upon the heart;—dyspnœa, palpitations, frequent syncope, extreme distress. *Venesection*, *blisters*, *sinapisms*, employed from the beginning, and frequently repeated. Restlessness during twelve days extreme. Symptoms from that time gradually subsiding; entirely removed in two months.

Dr. M. recommends as *preventives* in persons disposed to rheumatism of the heart, immersion in the cold bath, and flannel clothing next the skin, with the obvious view of inuring the constitution to, and counteracting the influence of atmospherical variations upon the surface of the body. Abstraction of blood, under certain restrictions, and *absolute repose of the voluntary muscles*, are considered by him as the most important agents in the *cure* of this dangerous affection. Bodily exertion should be avoided even long after recovery. To the effect of *rheumatic irritation*, vehement, mistaken, or injudiciously treated in the commencement, Dr. M. attributes many, or even most of the organic affections of the pericardium and substance of the heart.

M. Merat, in the same journal, makes some pertinent remarks on Matthey's cases. The essence of the rheumatic principle, he observes is unknown to us; but its effects have been correctly appreciated by physicians. The *muscular* system is peculiarly obnoxious to its ravages; and the internal organs participating, *in structure*, the characters of that system, are often affected by it. Of these the *heart* is unquestionably the most conspicuous.

The signs of rheumatic affection of the heart are difficult of diagnosis. The principal phenomena resulting from *metastasis* to the heart, are pain about the præcordia, and palpitations, though these certainly accompany the greater

number of its organic lesions—the *distinctive* character, he thinks, is *metastasis of the disease from a muscular region to that organ.*

My worthy friend Dr. M'Arthur, late physician to the Royal Hospital at Deal, writes to me thus:—"In a few instances I have noticed pain in the intercostal muscles, and palpitations of the heart, *to an alarming degree*, in acute rheumatism; but I know not whether they could properly be called *metastasis*, because the original inflammation of the joints had not previously receded: they were, however decidedly *rheumatic*, and declined *pari passu*, with the other local symptoms. The disease might be termed *extension* of the rheumatic action to the heart. A very remarkable case of this kind occurred in the person of Lieutenant Boyce of his Majesty's ship Impregnable, sent to the Naval Hospital at Deal, under my care on the 12th May, 1813. The detail would be too long to transcribe, and consisted in numerous repetitions of venesection, purging, opiates, &c. The disease continued obstinate and violent; but the last symptom, palpitation of the heart, has at length given way, and he is now (Oct. 1817) perfectly recovered."

The following very interesting and melancholy case is, I think, sufficiently connected with our present subject to authorize its insertion here; and should the true nature of the disease admit of doubt, the value of the facts will be a passport to the reader's attention. I owe it to the friendship of Mr. Cunningham, Surgeon in the Royal Navy—a gentleman of whom I have had occasion to make honourable mention in my work on Tropical Climates.

Lieutenant R———e, ætat. 29; of middle stature, swarthy complexion—athletic form, and considerable intellectual attainments, was descended from *gouty parents*, but had, till lately, enjoyed good health himself. Some domestic affliction had latterly preyed on his mind, which was quite of a romantic turn, and apt to anticipate scenes in this world, which the philosopher or man of experience would not indulge, even in imagination.

He joined his Majesty's ship Rochefort, on the 12th of October, 1815, at Plymouth; some time previous to which, he had been sent to the Royal Hospital there, for an *epileptic* complaint, according to his own account. His general health seem to be pretty good; but shortly after joining the ship, it appeared that he was occasionally attacked with spasmodic paroxysms in the early part of his sleep, though

it was nearly two months from this period before he called up medical assistance in the night.

On the evening of the 25th of April, 1816, he was suddenly seized with sharp pain in the *left* breast, accompanied by palpitation of the heart, dyspnœa, and a distressing sensation in the left lumbar region, which he considered a *nephritic* affection, though none of the diagnostic marks of that complaint attended. Two or three days previous to this, he had walked from Portsmouth to Nelson's Monument on Portsdown Hill, and thence to Farcham and Gosport, which induced great fatigue. His pulse being very full, the Assistant Surgeon abstracted 25 ounces of blood, which gave great relief, both to the breast and loins. Blood sizy, and crassamentum firm—a brisk purgative exhibited.

On the evening of the 26th he was again attacked in a similar manner; and as this was the first paroxysm which I witnessed, I shall describe it more particularly. I found him in his cot, exceedingly agitated—frequently starting up in a convulsive manner, with a strange gulping sensation in his throat—his hands and arms affected with spasmodic twitches; and his lips occasionally distorted. He frequently grasped the *left* breast with both hands, or forcibly beat the region of the heart with the right. He groaned loudly, and often implored the Almighty for relief from his extraordinary sufferings. His countenance was now expressive of the greatest anxiety; at the same time, the mental functions were partially disturbed; for he repeatedly invoked the assistance of a female, (whom we afterwards found to be his wife) whose name he never mentioned when in health. No words can describe the misery which he, at this moment, appeared to endure! The pulse was very full, and strong; the eyes fixed, with a remarkable contraction of the pupils —breathing excessively difficult, and could not be performed but in the erect posture. He frequently seized with convulsive force, the edges of the cot, or the arms of any of the bye-standers; and at this period, as he afterwards informed me, the pain which he suffered in the region of the heart—the sense of horror, and the fear of instant death, exceeded any thing that words can convey, or imagination conceive!

I opened a vein in the arm, and quickly drew off 30 ounces of blood, which was cupped and buffed. He experienced the same relief, as on the preceding evening. A brisk purgative was exhibited.

27th. Little or no pain in either breast or loins; pulse full, but not frequent—tongue clean, but somewhat dry in the middle—eyes usually a little suffused with a yellowish tinge. Bowels kept open with sulph. sodæ. 28th. The salts have produced copious bilious evacuations; and he finds himself very easy. 29th. Complains of head-ache, the pulse is full and reacting. Venesection to 28 ounces. 30th.—passed a tolerable night, but the head-ache remains. A cathartic of calomel and rhubarb. The head-ache now gradually vanished, and on the 2nd of May he returned to duty.

Shortly after this period, he began to complain of a very alarming *defect in his vision*, the attacks of which, would come on *suddenly*, attended with violent throbbing in his temples, for which he consulted Dr. Vance of Haslar Hospital, and derived from the remedies, prescribed by that gentleman, considerable advantage. In one of these periodical seizures, the pain in the head was so violent that I bled him copiously, and with great benefit, particularly in respect to the improvement of sight. He was ordered by Dr. Vance on a very spare diet, with a course of medicine that kept the bowels open, and was calculated to improve the functions of the digestive organs. Had the patient adhered strictly to the Doctor's directions, it is probable that the train of disease, about to be described, might have been averted.

It was during this period, viz. between April and December, 1816, that a kind of rheumatic gout, or gouty rheumatism developed itself in irregular attacks on the joints of the lower extremities, particularly about the feet—sometimes about the shoulders. In two or three instances, there was an extension of this affection to the muscles of respiration around the chest; and in one instance, it assumed so much the character of peripneumony that a large venesection, and other evacuations were found necessary to relieve the symptoms. We now come to a period of greater alarm.

In the night of the *5th Dec.* 1816, he was suddenly seized, while in bed, with a sense of suffocation, and violent palpitation of the heart—inordinate arterial action—difficult, wheezing respiration, and dread of immediate dissolution. Such was the sanguineous congestion in the chest, at this moment, that probably venesection alone (to 30 ounces) saved his life. The relief, as usual, was decisive

and instantaneous; and the next day he was at his duty on deck. The blood issued from the vein, during this venesection, with a surprising impetuosity; it was dark and grumous, but not buffy. 6th. Took some opening medicine in the morning; and found himself tolerably well all day; but he had not been long in bed, when he was suddenly roused from sleep by a paroxysm precisely similar to that of the preceding night, and which required the abstraction of 30 ounces of blood to afford relief.

On the 7th and 8th he was well, and attended his duty; but in the night of the latter, he was again started from sleep by his cruel enemy, and nothing but another loss of 30 ounces of blood put a period to the paroxysm.

On the morning of the 9th he insisted on going to his duty; but was shortly afterwards persuaded to return to the wardroom; and, as considerable debility now supervened, he soon retired to his bed. He had not been long there, however, before he was seized with intense pain in the head—hard full pulse—a most distressing sense of throbbing in the region of the heart—confusion of thought, bordering on delirium—wild staring look—contraction of the pupils—spasmodic twitchings of the arms. In this state he continued till six o'clock in the evening, when the delirium so considerably increased, with violent arterial action all over the body, that I was forced to abstract 20 ounces of blood, which somewhat mitigated the severity of the symptoms. On applying my hand, this evening, to the region of the heart, I plainly felt it give a most singular convulsive struggle. The patient immediately exclaimed—"It is gone! it is gone!—there is something gone within me!" As soon as the mental agitation produced by this event, had a little subsided, I asked him what he meant by these expressions. He replied that—"he was convinced some particular change had taken place in his heart; for at the moment alluded to, he felt as if the organ itself, or some part immediately contiguous, had broke or burst." Indeed, if the state of the pulse had not convinced me to the contrary, I should have been inclined, at the time of the exclamation and cardiac tumult, to suspect a rupture of the heart or aorta. I exhibited a pretty large dose of opium, with volatile alkali and compound spirit of æther, which disposed him to sleep, and he spent the night in tranquillity. Next morning, he felt so well and strong that he was able to walk, with a little sup-

port, down the ship's side into a boat which conveyed him to the Royal Hospital at Haslar. He lived but ten days afterwards, during which time, he lost nearly 200 ounces of blood.

I was not present at the dissection; but saw the heart, shortly after its removal from the body. The organ appeared somewhat enlarged, and the left ventricle was thinner in its parietes than usual; but there was no material or cognizable disorganization of its structure, excepting that it was very easily torn or mashed between the finger and thumb. The external surface exhibited slight, and very slight marks of inflammatory action. The lungs were perfectly sound, but there were pretty firm adhesions of the pleura immediately opposite to the heart. All the abdominal viscera, with the exception of the liver, were sound. This last viscus was diseased in structure."

This case is calculated to afford an instructive lesson, and much food for reflection. The living phenomena and the *post mortem* appearances distinguish the complaint clearly from common organic disease of the central organ of the circulation, and prove it more a disorder of *function* than of structure, in that viscus. The periodicity of the attacks—their affecting occasionally, the visual organs, the brain, the loins, &c. if taken in conjunction with the *Arthritico-Rheumatic* manifestations in different joints, will leave little doubt of the functional disorder of the heart and lungs being of an *Arthritico-Rheumatic* nature. The fatal issue, and the decisive trial which was given to venesection without success, may probably suggest, in such cases, the employment of *powerful and permanent* counter-irritation to the extremities, with the view of eliciting the morbid action to a less vital seat.

Dr. Armstrong, in his valuable work on typhus, &c. states his having seen three cases of Rheumatic metastasis to the heart, in consequence of rubefacients being applied to the parts affected with violent pain. One of them recovered by bleeding, a mercurial course, and blistering; but the inflammation of the heart proved fatal in the other two instances, although the same treatment was employed. *Essay*, *p.* 208.

From my friend Dr. Archibald Robertson, of Northampton, who will one day prove an honour to the profession, I received an interesting case, of which the following is an outline. "The patient was a young man, 23 years of age,

" of an irritable fibre, but by no means plethoric. On the " fifth day of acute rheumatism, and after being liberally " bled and purged, the pains, in a great measure, forsook " his hip and shoulder joints, and he was immediately " seized with considerable catching in his respiration— " anxiety—irregular, undulating pulse, and tendency to " syncope when raised in bed. These alarming symptoms " were quelled by further *moderate* abstraction of blood from " the arm—by an enormous blister to the chest, and an " antimonial mixture, with half a drachm of spiritus etheris " nitrici every two hours. The patient recovered, though " his convalescence was tedious, and he long complained " of debility and numbness of the affected joints."

Dr. Scudamore has seen one very clear example of the disease under consideration, in a young man 24 years of age. " In this case also, the inflammation in the limbs had been quickly wandering, but did not become suspended by the internal affection. After many distressing symptoms, which had the duration of about 14 days, the patient died. On dissection, recent layers of coagulable lymph were found lining the greater part of the pericardium, and also appeared partially on the surface of the heart. The pericardium was thickened, and contained ten ounces of muddy serum." *2d Ed. p. 522.*

In reply to my query respecting *Metastasis*, in acute rheumatism, Dr. Porter, of Bristol, has obligingly stated that—" independent of the translations of rheumatic action from limb to limb, which occur in all cases, he has in a few instances, seen metastasis to the heart—to the respiratory organs—to the brain. From the head, it was driven by leeches and cold applications; from the chest, by blisters; but where the *heart* was attacked, sufficient mischief ensued to disorder its functions during life, notwithstanding that the retroceded inflammation had been checked in a few hours by blisters and other appropriate treatment. In all these instances the *external* local disease disappeared previously to its attack upon the vital organ. In some cases the metastasis took place without evident or ostensible cause —in others, it appeared the result of topical refrigerants too long continued."

I have this day (20th Oct. 1817) examined, in the presence of Dr. Lind, junior, a young lady, Miss W. ætat. 22, who has been under my care for disease of the heart, more than a year. The action of that organ is exceedingly wild, tumultuous, and irregular—she is obliged to keep almost

always in the perpendicular position—constant cough, without expectoration—pulse observing no order, intermittent—redoubling—feeble—cannot bear pressure on the epigastric region—urine scanty and depositing copious sediment. These symptoms came on, in a slight degree, immediately after an attack of *acute rheumatism*, twelve years ago, and have gradually advanced to their present fearful aspect. I consider her as not having long to live.* In another female patient, a most violent palpitation of the heart—pulsation of the carotids—attacks of dyspnœa—cough—difficulty of lying down—livor of countenance, &c. have succeeded a seizure of *rheumatic gout*, and have now continued some years. The symptoms are moderated, *pro tempore*, by venesection, diuretics, and opium.

In thus concluding the fullest history that has yet been given of rheumatic metastasis to the central organ of the circulation, I trust that I have removed every doubt upon the subject of its existence; and also shewn that, from the silence of Cullen and preceding writers, there are reasonable grounds of belief that the influence of the disease has lately increased, is still increasing, and ought to be vigilantly watched.†

§ 4.—*Diagnosis.* A *regular* attack of acute Rheumatism may be easily distinguished from a *regular* attack of Gout; and if admixture of causes and diatheses produce combinations of the disease, as they unquestionably do;

---

* Exactly three months after the above was printed in the first edition, the dropsical swellings amounted to such a degree that the lower extremities burst, and this long afflicted young woman died. I opened her in the presence of Messrs. J. and G. Williams, Surgeons of Portsea, where I then practised. The heart was *actively* enlarged, in all its parts, to a most astonishing size. No disease of the valves was perceptible, nor adhesion between the heart and pericardium. Effusion of water in the chest, abdomen, and lower extremities was, as usual, the immediate cause of death. Between the integuments and muscles, this young woman every where exhibited vast layers of yellow fat, as is often observed in people with disease of the heart.

† Since the first edition of this work, the author has met with several interesting cases of deranged function and disordered structure of the heart, clearly resulting from mismanaged, suppressed, or translated Rheumatism or Gout. And what is of greater consequence, he thinks he has ascertained that, in disordered states of the heart and other internal organs, *from these causes*, a very mild and well managed course of mercury, with sarsaparilla and other eccoprotics, has a powerful influence in arresting the progress of disorganization, a power which they do not possess in apparently similar derangements, from *other* causes. Hence an additional reason for the most scrutinizing examination into the previous history, as well as the present symptoms of all organic or functional disorders of the vital viscera.

of what use is an accurate diagnosis?—or rather how can diagnosis apply, except in ascertaining by symptoms, to which side the scale preponderates?—Moreover, as will probably appear in the therapeutic subsection, the importance of distinguishing between the most exquisite specimens of the two diseases is not of such *practical* consequence as many people would imagine.

The same reasoning may be applied to the diagnosis between the acute and chronic species of the disease. The two forms blend, in fact, by such imperceptible shades, that it is sometimes impossible to say where the one terminates or the other begins. But this again is of little consequence; for we do not, or ought not to prescribe for the *name* of a disease, but vary our treatment as the symptoms vary.

§ 5.—*Prognosis.* As death rarely, if ever, takes place in acute Rheumatism, excepting by metastasis to a vital organ, our prognosis will be always favourable where no danger of translation is apprehended. But before predicting success without reserve, we should be satisfied that the great internal viscera are sound in structure, and previously free in office; otherwise a weak point lying concealed may become a prey to metastasis and falsify our most confident prognostications. When retrocession actually occurs, there is no safety till the disease is removed. In such a very uncertain complaint, the prognosis as to *duration* should be very guarded indeed.

§ 6.—*Etiology.* This part of the subject may be brought within a narrow compass, as little contrariety of opinion obtains. The state of *predisposition* attaches itself principally to manhood, and its developement is favoured by irritability or plethora of the system, and repetitions of the attack. It is also so far *hereditary* as depends on the transmission, from parent to progeny, of that constitutional organization which is most susceptible of the disease, or more likely to be operated on by the remote causes.

Although old age and youth are generally, they are not invariably exempted from acute rheumatism. Dr. Davis, in his very valuable report of infantile diseases, treated at the universal dispensary, [*Medico-Chirurgical Journal, October*, 1817,] mentions several cases of well-marked acute rheumatism in children of 4, 5, and 7 years of age. From 25 to 45, however, is the most usual period.—Tedious mercurial courses, too, may be enumerated among the *predisposing* causes of this and the chronic species; while

corpulence seems a protection from the former, in particular. Derangement of function in the digestive apparatus, by unhinging the balance of the circulation and excitability, has often appeared to predispose to acute rheumatism; and so has the habit of profusely perspiring, whereby that important discharge is rendered more susceptible of a check, or suppression, followed, of course, by a reaction of the system.

As to the *exciting* cause, it is universally allowed to be the application of *cold*, general or partial, through the medium of a frigid atmosphere alone, or moisture—or both combined. Thus exposure to rapid and great aerial transitions—wet clothing allowed to dry on the surface of the body—sleeping in damp sheets—standing or sitting in a current of cold air after the body has been heated, are *exciting* causes of acute rheumatism, as well as of numerous other diseases in this variable climate. *Finally*, it may be remarked, that in some rare cases, especially where the predisposition is strong, no ostensible *exciting* cause can be detected.

§ 7.—*Treatment.* Nothing can more decisively prove the *specific* nature of rheumatic inflammation, than the *opposite* modes of treatment which, to this hour, prevail in the medical world. No such thing is observed in the treatment of common inflammation. The exquisite fever—acute pain, and buffy blood have induced a very great majority of medical practitioners, from Boerhaave down to the latest author who has written on the subject, to look on the disease as a highly inflammatory one, and consequently to be cured by antiphlogistic measures, with Blood-letting at the head of the list. I believe that this is still the system taught in the Great Northern University; at least the following are extracts from Dr. Gregory's Manuscript lectures which have been handed to me by a literary friend. "Bleeding is most to be depended on in acute rheumatism; but some limits are to be assigned to it.—In general, two or three bleedings are required; sometimes four. Sydenham bled every second day, for eight days, abstracting about ten ounces each time. Bleeding should not be regulated by the quantity, but by the strength of the fever. I have taken 50 or 60 ounces; and in general it is necessary when the pulse is above 100. If, however, we bleed too far, the patient becomes much debilitated, and the disease assumes a chronic form and obstinate character. In many cases I have been obliged to bleed when I wished to avoid it,

having tried every other remedy in vain. It may be remarked that it is only in the *early* stages of the disease that venesection is necessary or useful—indeed the advantages from this measure will be in proportion to the earliness of the application. Leeches are beneficial. The antiphlogistic regimen, with the exception of cold, should be strictly enjoined. The diet must be rigidly low—nothing beyond milk or vegetables—often only water gruel for some days."

In the Bristol Infirmary, as we learn from Mr. Bedingfield's late publication, venesection is chiefly relied upon in this disease. "Nothing," says Mr. B. "has been found so effectual in acute rheumatism, as copious venesection. When 20, 30, or 40 ounces of blood have been taken away, for three or four days in succession, cases of the most violent description have been very speedily cured." Those treated on an opposite plan were slow of recovery, and *metastasis to the heart* was not unfrequent. Besides venesection, purgatives were employed.

Dr. Parr, in his London Medical Dictionary, expresses himself thus:—"The experience of many ages has established the utility of *bleeding* in acute rheumatism; and blood must be drawn from a large orifice—in considerable quantity—and frequently repeated. The severity of this evacuation, described under the article *Pleuritis*, is not too great for the present complaint, if the patient be robust and strong. The usual guide is a more soft and slow pulse—a diminished heat and moist skin."

A considerable proportion of the medical officers in his Majesty's Naval Service, with whom I have communicated, incline to the foregoing plan of practice; and as the words of my able friend, Mr. Sheppard, so well express the sentiments of this class, I shall beg leave to quote them. "Although the fever of rheumatism exhibits a modification of character distinct from the pyrexia of other acute diseases; yet I have not observed any indications in the *early* period, which prohibit the general abstraction of blood, more than in other phlegmasiæ; and where the evacuation has appeared to be injurious, I believe it may be ascribed to the *late* period of the attack in which it has been employed. I have uniformly bled in the early stage of acute rheumatism—so as to make a decided impression on the system. The quantity required to produce this effect must, of course, depend on habit, and cannot be specified; but I have sel-

dom abstracted less than 20 ounces at the first bleeding. I nevertheless admit that blood-letting has not the decisive and permanently salutary effect in this as in other acute diseases, corroborating the opinion before expressed, that the pyrexia possesses a modification of character different from that of acute diseases in general. This want of complete success does not, however, in my opinion, militate against venesection as a remedy in acute rheumatism; on the contrary, although the disease be not immediately subdued, yet I am satisfied that it is essentially controlled, in degree, by that remedy, and that much consequent mischief is prevented--more especially *metastasis* to internal organs."

Dr. M'Arthur, of Deal, expresses himself to this effect: "I have not met with any circumstances in the early stage, or during the violence of the fever of acute rheumatism, that forbade general blood-letting. In my own practice I have employed venesection; but the extent always depended on the violence of the disease and the habit of the patient. In my own case, about three years ago, I lost 50 ounces of blood, generally and locally, within the first twenty-four hours, and with the most decided benefit.—I have sometimes, in the progress of the disease, *exceeded* this quantity, and often been *under* it. No general rule can be laid down in this, or in any other disease requiring venesection."

Another proportion of the same class of officers, and in which I include myself, adopt a somewhat less decisive system of depletion in acute rheumatism—which depletion is also confined to the *early* stage of the disease. Dr. Porter's words sufficiently express the sentiments of this class. "I order blood to be drawn from the arm, *without loss of time*, in the onset of acute rheumatism—generally 18 or 20 ounces, repeating the operation once, twice, or, in some rare cases, thrice. *Beyond* this I seldom go, as the cure does not seem expedited by ulterior venesections; but *to* a certain extent, I consider blood-letting essential to the safety of the patient."

The authority of Dr. Armstrong and Dr. Scudamore will be a sufficient sanction for this modification of the depletory plan of practice. "On the first attack therefore," says Dr. Armstrong, "of acute rheumatism, I generally order from twelve to twenty ounces of blood to be abstracted."—*Essay on Typhus*, p. 206. "*General bleeding*," says Dr. Scudamore, "is a remedy of great importance in this

disease, but requiring very careful management. If one of strong muscular fibre and of sanguineous temperament be seized with acute rheumatism in full health, bleeding at the commencement of the attack, is a measure of the utmost necessity and value; and the propriety of its repetition will be clearly indicated, both by the good effects which it may have produced, and by the urgency of the subsequent symptoms. When its employment is proper, its control over the *violence* of the disease is more immediate and effectual, than that of any other remedy." *2d Ed. p.* 536.

We thus see that the best practical authorities have sanctioned the use of general bleeding in acute rheumatism; but as they almost all hint at limitation or restriction, and universally acknowledge that venesection has not that happy effect in this, as in other inflammatory diseases, it behoves us to divest ourselves of all prejudice or partiality for a favourite remedy, and examine, with candour, the statements of a *third class* who, though comparatively small in number, are highly respectable for talents and practical knowledge. Of those who have *publickly* expressed their sentiments *against* general blood-letting, except in very robust constitutions, we may instance Dr. Haygarth and more recently, Dr. Bateman; among the Naval medical practitioners, Dr. Lara, of Portsmouth, does not bleed in the complaint under consideration.

Perhaps a calm and close survey of the phenomena in acute rheumatism may enable us to reconcile these contradictory practices. We see, in this disease, a constitutional fever accompanied by an *external local* inflammation of a specific nature, affecting a tissue or series of tissues nearly insusceptible of the suppurative process. Now the fever, generally speaking, is not dangerous, excepting as it may injure a previously weakened organ, which is not often found in the subjects of acute rheumatism—and the local inflammation is devoid of danger, excepting when translated to an internal part. Here then we have a peculiarly favourable combination of fever and inflammation, which, like that in gout, will nine times out of ten, terminate successfully under diametrically opposite modes of treatment—provided that Nature is not too much molested, or the sinister accidents above mentioned do not occur. This view of the subject leads us not to despise, nor yet too highly prize any one plan; but, on the contrary, to vary or combine

them as circumstances may require. There is yet another consideration in favour of the *Eclectic* practice. The same treatment will not equally succeed in the pampered citizen, the pale mechanic, the weather-beaten seaman, and the florid-cheeked peasant. The great art then—the great skill is in adapting the means to the end; in discriminating between constitutions; and in recognizing those times and circumstances where it is most prudent to crowd our canvas, or lie on our oars.

Purgatives. The more minutely we investigate the phenomena of all febrile states of the system, the more we will be convinced that there is no such thing as *general* debility, or *general* irritability obtaining in them. We shall find that if the intellectual functions and the power of the voluntary muscles are *below* par, there is an *excess* of action going on in some other part of the system. We shall find a torpor, for instance, in the glandular and digestive apparatus, while the vascular system, both of red and white fluids, is preternaturally active—witness the rapidity of the circulation, and *the energy of the absorbents.*

I think this last phenomenon has not sufficiently excited the attention of the medical world. We see a strong man, accustomed to live sumptuously, seized with fever, whether idiopathic or symptomatic. He immediately ceases to take food. He is bled day after day; and still the blood is richly buffed, and the blood-vessels turgid. He is purged day after day; and still the fecal discharges are fetid and abundant. The wondering bye-standers are puzzled to know where all these come from, when no food is taken in by the mouth! But they little dream that all this time, the patient is feeding on enormous meals of animal food. Animal food? yes; and if this seems incredible, weigh him, both before and after the fever—then calculate the pounds of *fat and muscle* that have passed through his absorbent and circulating systems; and the enigma will be solved. This consideration explains the state of the blood and feces—it explains why gross and corpulent subjects are more violently and dangerously assailed by febrile affections than their leaner neighbours; and it suggests an indication that is well worthy the attention of the physician—namely, that of *checking the activity of the absorbents*, which are busily employed in heaping fuel on the fire which he is endeavouring to extinguish. In what way this inordinate energy of the absorbents is to be restrained, I am not, at present,

prepared to say; but I would venture to surmise that the salutary effects of calomel, opium, and antimony, in *equalizing* the circulation and excitability—by restoring to action a host of torpid secretions, may thus be accounted for. At all events it shews us the necessity of evacuations both from the vascular and chylo-poietic systems, while the absorbents are breaking down the richest parts of the human body, and incessantly pouring a highly animalized and stimulating fluid on the heart and arteries. Is this the process by which Nature ultimately subdues a fever, when the system is so far reduced that no fresh supply can be procured from the emaciated fabric? In accelerating this reduction by evacuations, do we assist nature in shortening the course of the fever, or in preserving vital organs from the effects of inordinate action in the heart and vascular system, when left to the spontaneous efforts of the constitution? I am inclined to answer in the affirmative; but must leave the investigation to those who have more time to bestow on it.*

To return. Almost all practitioners, as well as authors, recommend *cathartics* in acute rheumatism, on the principle of detracting from the general circulation through the channel of the intestinal canal, and thus reducing vascular action. No one can be more sensible than myself of the beneficial effects of purgatives in the great majority of febrile diseases; but in acute rheumatism, the practice is attended with such distress to the patient and irritation to the inflamed limbs, that I have long abandoned any thing more than such laxatives as will just procure one or two easy motions in the twenty-four hours. In this disease, still more than in dysentery, the nearer the patient can keep in *perfect quiescence*, the better will he go through the different stadia of the complaint, and the shorter will be its course. If the practitioner, however, will not abstain from purgatives, the saline cathartics are the preferable ones; and if made to act on the kidneys at the same time, they will be productive of greater advantage.

Dr. Gregory, in his lectures, thus expresses himself in respect to *Purgatives* in acute rheumatism. "Purging is

---

* Exactly at the time when my first edition appeared [Nov. 1817] a work was published in France by M. Vialle, in which there is an astonishing coincidence of ideas between the foreigner and myself. I have given a a condensed translation of Vialle's work in the *Medico-Chirurgical Journal for July* 1818—and beg the professional reader's attention to the same.

by no means so efficacious; it is inconvenient and precarious—the advantage does not compensate for the irritation and pain which it occasions to the patient in getting out of bed. Nevertheless the bowels are to be kept soluble."—*M. S. Lectures.*

Emetics. On the principle above stated, I would avoid *emetics*, notwithstanding the recommendation of Haygarth, unless the stomach were very unusually loaded. But besides the violent action resulting from this class of remedies, they are objectionable on another account—that of their increasing *perspiration*; and this leads to—

Sudorifics. It is not always safe to imitate nature in those efforts which she appears to make for the removal of disease. The plan of curing dysentery by *purging* has slain its thousands!—Who would expect to cure Phthisis by increasing expectoration! A *dry*, *burning* skin is the common attendant on most febrile affections, and were we to take Nature for our guide, we ought to place the patient, thus circumstanced, before a good large fire! So, in acute rheumatism, a profuse perspiration is one of the morbid phenomena of the disease, and he who administers sudorifics internally, or wraps the body in blankets and flannels, acts precisely on the principle of giving salt herrings to increase the thirst, or kindling a large fire to increase the heat of a fevered patient! Those medicines, for instance, Dover's powder, opium, calomel, and antimonial powder, &c. which have acquired reputation in acute rheumatism, *as sudorifics*, probably owe their good name to a different action—that of equalizing the balance of the circulation and excitability, while at the same time, they lulled pain. The latest writer on the subject, Dr. Scudamore, though he inclines to "a moderate relaxation of the skin," draws no very favourable picture of sudorific medicines. "The sudorific plan of treatment not unfrequently disappoints our expectations, so as to aggravate, rather than relieve the symptoms. Even when most successful, it is attended with the ill effects of producing much debility, and increasing the sensibility of the surface, so that for a considerable time, almost any degree of exposure is hazardous."—*Treatise, p.* 542.

Mercurials. Numerous authorities might be quoted for the great success which has attended this mode of cure. It is a favourite one in the Navy, and is that to which I have generally had recourse myself, after early and moderate venesection. It is sufficient to quote one of the latest

writers on the subject—Dr. Armstrong, who says—"On the first attack, therefore, of acute rheumatism, I generally order from twelve to twenty ounces of blood to be abstracted, then purge the patient pretty briskly, for about two days, and afterwards saturate the system with calomel, combined with sufficient doses of opium and antimony to allay pain, and excite a very gentle perspiration. There will generally be an obvious relief of symptoms, as soon as the mouth becomes tender; and it ought to be kept so for at least nine or ten days, by which time the cure will, most frequently be accomplished." "Some highly respectable practitioners of my acquaintance are in the habit of trusting almost entirely to calomel and opium for the cure of acute rheumatism." 207.

I have so very generally witnessed the truth of Dr. Armstrong's statement, for many years before his work appeared, that I cannot but suspect that those practitioners, who speak in unfavourable terms of this mode of treatment, have never given it a fair trial, or have viewed the affair through the distorting medium of prejudice.

That in this, as well as in all other febrile affections, the balance of the circulation and excitability is broken, no one will deny; and I believe it will be found that, when the general mass of blood is somewhat reduced by early venesection, the administration of Calomel and Opium, to the point of constitutional impregnation, will prove a very effectual mean of once more equalizing the balance. True it is, that there are some practitioners who are constantly complaining of the injurious effects of mercury on the constitution, although they hardly ever employ that medicine; while those who have given it the most extensive trial, offer a very different account. Not only in my own person, but in some thousands of others, I have invariably observed a renovated tone of constitution follow the use of this remedy, however distressing it might prove at the time of exhibition. I shall here quote the words of Dr. Watt, whose character for accuracy of observation and fidelity of detail, is well established. "We are often told of the pernicious effects of mercury on the constitution; but if I were to judge by my own experience, I would form an opposite conclusion. In cases where mercury was carried to such a length, that the patients have been for two weeks without tasting either meat or drink, the cure was most complete; and so far from injuring the constitution, the process appeared to give new energy; and the most perfect health has been the conse-

quence. There is probably no other medicine that affects the system so powerfully, in eradicating either acute or chronic ailments, or after the prudent application of which, the human frame attains a state of such vigorous and healthful enjoyment. This sentiment is not in unison with the *anathemas* of some modern *declaimers*, but in consonance to the *experience* of those who have employed this valuable medicine to eradicate, not to palliate disease."—*Cases of Diabetes.*

Immediately on the remission of the fever, I have generally exhibited the cinchona in substance, to insure a complete recovery and guard against relapse. In this plan most of the naval medical officers agree.

Upon the whole, I am disposed to give the mercurial practice thus modified, in conjunction with rigid abstinence and cool air, the preference over every other, with which I am yet acquainted.

Opium. If there were no other proof of the wide difference between rheumatic and common symptomatic fever, the diametrically opposite modes of treatment which *almost equally* succeed in the former, would be sufficiently convincing. Would any man in his senses attempt to treat Phlegmon or Pneumonia with Opium and Bark?—Yet these succeed in acute rheumatism.

In the 1st vol. of the Edinburgh Journal, Dr. De Roches calls the attention of the faculty to the exhibition of opium in the disease under consideration; and relates two cases, selected out of a great number, to illustrate its efficacy.—As the first case is short, we shall condense it as a specimen.

Mrs. Picard, aged 27, strong and healthy, was seized on the 22d September with cold shiverings, succeeded by heat, and pains in her knee joints and wrists, which on the 24th when first seen by Dr. R. were swelled, red, and tender.—Thirst—pulse 106, and very strong. Has taken a purgative yesterday. To take 1½ grains of opium at bed-time, which is to be repeated in the morning, at mid-day, and in the evening. Barley water *ad libitum*, and if weak, to have broth, and warm gin toddy. To lie between blankets. 26th. A copious sweat broke out soon after taking the first pill, which was kept up for 36 hours by weak broth and toddy. To-day, she feels languid and giddy, when sitting up—the joints are stiff; but neither swelled nor painful.—A purgative powder. 28th. The appetite is good, and the limbs becoming more free and easy—pulse natural—sleeps

well. She took some bark, and was discharged cured on the 4th October.

Dr. De Roches quotes the following passage from Heberden in favour of opium. "*Sydenhamus opio uti prohibet in hoc affectu; pace tamen tanti medici, dixerim dolores sic impune leniri, et somno tuto invitari. Præterea, meo judicio, opium non tantum modo importuni mali præsidium est, sed multum confert ad ipsum morbum tollendum.*"

But notwithstanding these testimonies, there are few practical men who have not seen sufficient bad effects from opium in all acute diseases, when exhibited *by itself*, to put them on their guard against this practice in acute rheumatism. Opium, however, in conjunction with other medicines which rouse the secretory and excretory apparatus, is a valuable remedy both in mitigating pain and assisting in equalizing the circulation and excitability. The following caution from Dr. Armstrong may close the subject of opiates. "As the pain is often excruciating in this complaint, I must warn the inexperienced practitioner not to let this circumstance induce him to prescribe opium in very large or repeated doses; for under such a procedure, I have known some patients become almost comatose, and actually saw two who had been forced into an apoplexy by the too free exhibition of this drug." *On typhus, p.* 208.

Hyoscyamus I have found to be a better sedative on the whole than opium. It may be given in doses of five grains of the extract with a grain of Ipecacuan, every four hours, after proper evacuations from the vascular system and bowels.

Bark. The flattering colours, in which Dr. Haygarth pourtrayed the efficacy of this medicine in acute rheumatism, about 12 years ago, induced a great number of practitioners to give it a trial. In my own practice I was miserably disappointed by it; at least in the mode of administration recommended by Dr. Haygarth; though I have found it a valuable auxiliary in the *remissions* of the rheumatic fever, to fortify against further accessions. The following is Dr. H's plan—

"After the stomach and bowels have been sufficiently cleansed by antimony, I have, for many years, begun to order the powder of the Peruvian bark in doses of gr. v. x. or xv. every two, three, or four hours; and if this quantity had a salutary effect, it was gradually increased to gr. xx,

XXX, or XL. with sedulous attention never to add more than what perfectly agrees. It has generally been taken in milk, mint water, or the decoction of bark.

"Another circumstance merits great attention. When the rheumatic fever has been treated by bleeding, leeches, sudorifics, &c. it is well known that pains of the diseased joints and muscles often afflict the patient for many months, or even years. In my clinical reports I find no instance of this kind, and have reason to think that the bark entirely prevents this cause of the chronic rheumatism as a consequence of the inflammatory fever.

"Except mercury in syphilis, there are few or perhaps no examples where a remedy can produce such speedy relief and perfect recovery in so formidable a disease. For many years I have been thoroughly convinced that the Peruvian bark has a much more powerful effect in the rheumatic than any other fever; and that it does not even cure an ague so certainly and so quickly." *Clinical History, &c.*

The melancholy reflexion—*experientia fallax* must rise in every man's mind on reperusing this passage 12 years after it was written! But we ought never to forget, that diseases are strikingly modified by the *classes of society* wherein they are met; and that the same treatment which may succeed among "the higher and middle ranks" of an eminent Bath Physician's patients, would soon thin the sick-list of a country Practitioner by consigning his patients to the care of the undertaker!* It is on this account also, that HOSPITAL PRACTICE is rarely applicable, in its full extent, to the miscellaneous and more varied features of disease in private life. Indeed the most difficult piece of knowledge to be attained by the physician is—the power of DISCRIMINATION, and that almost instinctive sagacity which penetrates, at a glance, the idiosyncrasy of the patient, and perceives, at once, the plan of treatment that is most likely to succeed. It is said that to be a great poet you must be born one—poeta nascitur, non fit. It is more than probable that to be a great physician you must be born with certain mental powers and qualities which "academic groves and learned halls" can never originate or confer. These combined with the "tactus eruditus," are, of course, the lot of but a few.

* Does not Dr. Haygarth's admission of *twelve* fatal cases out of 170, militate against his mode of treatment? I believe that very few practitioners have witnessed such a proportion of mortality as Dr. Haygarth gives.

In respect to bark in acute rheumatism, it is to be feared that too much prejudice exists against it, at this time, in consequence of the disease being too hastily classed with other inflammations, and treated too much on the same principles. It certainly has considerable control over the complaint, if given in substance during the remissions of the fever, paying attention, at the same time, to the state of the bowels and skin. It is also, as was before observed, a preventive of relapse, if given at the conclusion of other modes of treatment, and joined with the sulphuric acid.

"When, says Dr. M'Arthur in a letter to the author, by blood-letting and intestinal evacuations I have brought the fever to exhibit evident morning remissions, I have derived the greatest benefit from the exhibition of the cinchona in powder, *during the morning remissions only*, always omitting it in the evening exacerbations. There is an undue prejudice against this medicine. In my own case, and in that of many others, the most marked and good effects have resulted from its administration in the above manner."

Regimen. Modern experience has determined, beyond dispute, the necessity of a strict antiphlogistic regimen.—Nothing in the shape of beer, wine, or spirits should be allowed; nor any food beyond water gruel—vegetables—barley water—toast and water, or whey.

Particular Method of Treatment. A gentleman in the West of England, of unlimited experience, and who is well known to the medical world by the introduction of an important improvement in Surgery, has, of late years, treated acute rheumatism with great success, in a very simple manner. I am not at liberty to disclose his name; but I would most seriously recommend a trial of his plan to the profession at large, in consequence of the respectability and talent of the source whence it is derived.

The first step is, to derobe the patient of all flannel mufflings and warm bed-clothes—to cover him in the lightest possible manner, compatible with the season of the year, and his own sensations—to admit a free circulation of *cool air* through the chamber by open windows. The next thing is to enjoin *absolute quiescence*. The patient is not, if he can possibly help it, to move a single voluntary muscle.—The most rigid abstinence is to be observed; and the bowels are to be kept merely soluble by gentle and cooling laxatives. No venesection—no purgatives—no sudorifics.—Sweating he never allows, if he can restrain it.

In the atonic stages of the disease, the shower bath accelerates recovery; and in all cases, it is the grand preventive of relapse, if used during convalescence. This is the simple plan by which this gentleman has been in the habit, for several years, of checking this formidable disease, and with a degree of success far superior to that resulting from any other mode of treatment. It is to be hoped that this publicity of the measure will ensure it an extensive trial. Few or no instances of metastasis have occurred under the above *Methodus Medendi*.*

Treatment of Metastasis in Rheumatism. Before entering on the *local* treatment of acute rheumatism, it may not be improper to say a few words on the *Methodus Medendi*, in those cases where the inflammation recedes from the joints or other external parts, and attacks an organ of vital importance. And here we may refer with confidence to what has been said on the same subject in my translated work on GOUT. If the reader will turn back to pages 114 and 118 of this essay, he will be convinced that venesection must be resorted to with an unsparing hand, in translations of rheumatic inflammation. But while we reduce the whole system by this measure, the cases brought forward, and particularly those by Dr. Hall and Mr. Cunningham [p. 114 and 124] impress us with an important indication, viz. that venesection *alone*, however energetically employed, will not be sufficient. In such distressing and dangerous cases, we must endeavour to re-excite the external inflammation by every possible means. Blisters, sinapisms, scalding water, or volatile alkali, should be applied, not only to the vicinity of the organ affected; but to *all the joints* which the disease had previously invaded; and when we have elicited the inflammatory action to the surface, it behoves us to keep it there by *counter-irritants*, for a considerable time, while bark is exhibited internally to fortify against relapse.

Local Treatment, Cold. There are some Naval practitioners who employ *cold* externally in acute rheumatism. Dr. M'Arthur, of Deal Hospital, has used it with advantage. Dr. Porter, of Bristol, "directs refrigerating applications

* Since the above was printed off, I have had some farther communication on the subject, with my friend Dr. Dickson of Clifton, to whom I owe the above information; and as I am anxious that the plan of treatment in question, should not lose force by its *anonymous* character, I venture, on my own responsibility, to say that the gentleman alluded to is Mr. Bayntoq of Bristol.

so as to *abate* pain in any part, when violent—but does not continue them so as to *remove* it entirely, because he cannot tell where the peculiar local irritation may translate itself, and he believes it must subsist *somewhere*, as an essential part of the disease, until the constitutional pyrexia has run its course." Dr. Lara, of Portsmouth, is in the habit of employing cold applications locally, "during the stage of tumefaction, heat, and redness;" afterwards he directs some gently stimulating liniment.

It is quite evident, however, that the topical application of *cold* in rheumatism (with the exception of cool air) ought to be subjected to all those restrictions so judiciously laid down by M. Guilbert, in the work on gout already alluded to. Frigid applications themselves, unless persevered in with an intensity of force that may often endanger translation, are apt to occasion a *reaction* in the parts that ultimately aggravates, instead of lessening, the local inflammation. This is a remark that is not sufficiently attended to.

I may here refer the reader to page 120, for a warning against *stimulating* applications to the inflamed joints in acute rheumatism. I know not upon what ground their employment can be sanctioned. In the case alluded to, I think no one will doubt their injurious effects.

Tepid and Evaporating Lotions. These are far preferable to the foregoing; inasmuch as they are equally efficacious and much less dangerous. For some years, while serving in a situation where acute rheumatism was very prevalent, I employed clothes dipped in tepid *liquor ammoniæ acetatis*, and kept in a state of constant evaporation over the inflamed joints, with great solace to the patient, and, I think advantage to the disease. Dr. Scudamore expresses himself thus:—"Lastly, I have to mention, with earnest recommendation, the constant employment of the tepid evaporating lotion [one part of spirit to three of camphor mixture] to the inflamed parts. The good effects of this remedy, judiciously conducted, are often truly surprising." 549.

Local Bleeding. This is often useful; and, for obvious reasons, can only be done by leeches. There are no other topical remedies than the above, which can be recommended in acute rheumatism, if we wish to avoid those dangerous metastases or translations which have been already investigated.

Prevention of Rheumatism. This may be considered in a twofold view—Habituation to the cause, and counter-

action of the effect. The *first* is by far the best; but it requires to be early begun, and long continued. The second is most appropriate for invalids, and those whose constitutions have been impaired by repeated assaults of the disease.

Habituation. *Sudden atmospherical transitions*, and the application of wet when the body is heated, are well known to be the grand exciting causes of rheumatism.—Now reason, as well as observation points out to us, that if we *early accustom* ourselves to bear these rapid aerial vicissitudes, we shall thereby defy their influence. This is assuredly to be done by *a lighter and more uniform system of clothing*, from youth upwards. By this I do not mean that we should dash out with light vestments in a cold and wet day, or night; but that in Summer our dress should be *warmer*, in Winter, *lighter* than it now is.

Another mean of habituation is by early and steadily subjecting ourselves to *artificial* transitions of temperature on the surface, through the medium of the cold bath—particularly the shower bath. If this dare not be ventured on, we should sponge the more exposed parts of the body, as the head, face, breast, and fore-arms, every morning with *cold* water; while the feet and legs may be sponged with water from which the chill is taken, by the addition of a small quantity of warm water. This plan is the safest for adult age, and valetudinary constitution.

Counteraction can only be effected by warm clothing—particularly flannels next the skin, during the greater part, or whole of the year. And as every thing which deranges the functions of internal organs, deranges, by association, those of the skin, it is evident that those disposed to rheumatism must study the *general rules* of preserving health, as well as those *particular rules* more immediately necessary for the prevention of their peculiar affliction.

CHRONIC RHEUMATISM.

It is by no means certain that *acute* rheumatism shall have preceded chronic;—no more than that acute inflammation of the liver should always precede chronic diseases of that organ. Moreover, the acute and chronic species are not unfrequently so blended, that the most accurate nosologist is unable to draw the precise line of demarcation. It is, in fact, here, as in hepatitis—one part will be in a state of acute, another of sub-acute, and a third of chronic inflammatory action, with a corresponding *melange* of contra-indications! But this is no argument against *Nosology*, which is as necessary in medicine, as charts in navigation. There may be errors in both, which time and observation are constantly erasing; nay more—there may be *shifting sands* which defy all description or calculation; but still the grand features of a disease, and the great headlands of a chart are substantially and sufficiently correct for the diagnosis of the physician and the course of the mariner.

§ 1.—*Symptomatology.* This need not detain us long, since the disease is, unfortunately, too familiar, both to the patient and practitioner. Pain and stiffness in the joints and limbs, aggravated by motion—torpor—coldness—occasional tenderness in the integuments, particularly in the tract of the principal nerves,—softness and wasting of the muscles, are the usual symptoms. All these affections are greatly influenced by *atmospherical transitions*—whether of temperature, density, or humidity—so much so, that rheumatic patients are often compared to weather glasses, so accurately do they feel the approaching vicissitude. The pains are generally relieved by warmth, and aggravated by cold. The affected limbs feel dry and harsh to the touch, and are not easily made to perspire. Nocturnal exasperations of the pains are very common; and are often accompanied by sensations of pricking, burning, piercing, and shooting in the line of the great nerves or muscles. These symptoms, however, vary much, according to the structure or tissue principally affected. The

general health suffers—the digestive organs are deranged, and then seem to react on the external complaint—sometimes this derangement of function in the digestive apparatus appears to be a primary cause, or at least to occasion a strong predisposition to rheumatism—at others, to result from sympathy with the surface—extension of irritation—or the want of natural rest at night. The deleterious effects of this *last*, on the digestive organs, are not sufficiently attended to, in the treatment of diseases.

§ 2.—*Pathology*. Various are the speculations respecting the original seat and nature of chronic rheumatism. I say the *original* seat, for in its progress—and particularly in its sequelæ, it affects like gout, a variety of tissues. The most probable conjecture, [for it has never been demonstrated] is, that rheumatism *primarily* affects the *white fibrous tissues* interspersed between the muscular fibres, and entering into the composition of ligaments, sheaths of tendons, neurilemæ, &c. Dr. Scudamore, in the words of Mr. Stanley, gives a dissection performed at Bartholomew's Hospital, on a subject *supposed* to be rheumatic. If the reader will turn to my translated Essay on Gout, § 30, he will find that *precisely the same morbid appearances* presented themselves in a man who died in the middle of a dreadful paroxysm of gout. This circumstance proves one of two things—either that the man who died at Bartholomew's was *not* affected with rheumatism; or that the morbid anatomy of rheumatism and gout is the same.

The more obvious sequelæ of chronic rheumatism are, enlargements of the Bursæ Mucosæ, sometimes hard and unyielding—sometimes elastic—sometimes soft, with a gelatinous feel. The aponeuroses of the muscles become thickened—the muscles extenuated—the tendons knotty and indurated—the ligaments rigid. The synovial membranes themselves become ultimately diseased, with effusions into the cavities of the articulations. That the nerves suffer, either in themselves, or through the medium of the neurilema, is highly probable—nay almost certain, from the degree of pain—loss of muscular power, and semi-paralytic state of the parts.

Of the *nature* of chronic rheumatism we know as little as of the *nature* of other diseases. The inflammation is sometimes passive, sometimes active—often both, in one and the same limb. That there are, generally speaking, a loss of tone, and a relaxation of the extreme vessels, in rheuma-

tic parts, we may pretty safely conclude, not only from the phenomena of the disease, but from the modes of cure which have given most relief.

§ 3.—*Treatment.* Rheumatism, like gout, has its almost innumerable host of remedies—a sure proof of obduracy on one side and inefficacy on the other! Yet as considerable relief, if not a permanent cure, may be often obtained from medicine; and as varieties in cause, and constitution, together with the obstinacy of the disease, force us to frequently shift our ground in the treatment, a *concise exposé* of the principal remedies, now in use, may not be uninteresting.

Before entering on the cure of Chronic Rheumatism, the practitioner should make particular enquiries into the following circumstances, as upon them ought to turn a considerable modification of the treatment. Viz.—1st. The age, temperament, modes of life in respect to diet, drink, clothing, occupation, &c. of the patient. 2nd. The manner in which the exciting causes have been applied; and the state of the body, particularly of the digestive organs, at the time of their application. 3d. The structure and functions of the parts attacked with the disease.

Internal Remedies. Of these, *calomel, opium, and antimonial powder, or ipecacuan*, taken in small doses till the mouth is a little sore, and kept at that point for some weeks; following up the plan by Peruvian bark, and proper external applications, may be considered as the most extensively beneficial. I know some gentlemen who give a preference to the *Oxymuriate of Mercury*, in doses of one-fourth, one-sixth, or one-eighth of a grain, every night.—*The Arseniate of Potash* is another internal medicine of very considerable power, and it may be given to a much greater extent than is generally done, without the smallest danger. It is always best, however, to begin with 5 or 6 drops thrice a day; increasing it to 8 or 10. The *Tinctura Lyttæ* is often useful in combination with the Fowler's solution.

Guaiacum, either in powder, or in the form of ammoniated tincture, is still employed by many respectable practitioners.

The Oil of Turpentine, in doses of one drachm, twice a day, has, according to the testimony of Mr. Paddock, removed obstinate chronic rheumatic affections which would not yield to any other means.

Although more than *sixty-gallons* of Ling-liver oil have been *annually* swallowed, for 50 years past, in the Manchester Infirmary alone, yet its horribly nauseous taste will never permit its general use in private practice.

The Decoction of the Woods, or compound decoction of Sarsaparilla according to the dispensatories, about a pint in the day, with a periodical purgative of Calomel, Scammony, and pulp of tamarind, twice a week, has been much employed in Portsmouth and the neighbouring towns, in consequence of the recommendation of Dr. Vance of Haslar Hospital, who prescribes this remedy very extensively, and certainly with much success, in a great variety of diseases dependant on, or connected with, derangements in the digestive organs. I have seen such decided benefit result from this plan in obstinate cases of chronic rheumatism, and where no syphilitic taint could be suspected, that I have no hesitation in strongly recommending it to the notice of the profession at large. It has been lately—indeed long, the fashion to look on the decoction in question, as nearly inert; and I myself was prejudiced against it; but on farther trial, I am convinced that it is a valuable remedy. The purgative medicines, no doubt, had a great share in the cures, but still they did not succeed so well without the decoction. When the decoction cannot be taken, two scruples or a drachm of the powder of sarsaparilla may be given thrice a day, as a substitute. The form of the Electuary is this. Calomel one scruple, powdered scammony two scruples, pulp of tamarind one ounce; about an eighth part to be taken in the morning at breakfast time, twice a week.* According to the testimony of Mr. Bedingfield, calomel, in doses of *a scruple*, twice a week, has succeeded in rheumatic cases that resisted every other method. He never saw any ill effects result from the largeness of the dose.

Among Seamen, that species of Chronic Rheumatism, denominated Lumbago, is extremely prevalent, in consequence of the loins being frequently exposed to wet and cold, while they are bending over the yards, at which times their short jackets are no defence. No medicine has in my practice proved so efficacious as Peruvian bark,

* This is Dr. Vance's formula; but it possesses no superiority over the form of purgative pills recommended at page 80, and upon the whole, I think the night the best time to take an opening medicine of this kind.

taken in substance three or four times a day, with a tight and broad flannel belt round the parts. In the other and more common forms of chronic rheumatism, I have also found considerable benefit from the use of the bark, with or without mineral acids; but always in conjunction with external means. "There is a variety of chronic rheumatism (says Dr. M'Arthur in a letter to the author) attended by profuse perspirations, not unfrequent in the West Indies, and which I have also met with in this country. In such cases, medicines determining to the surface are sure to perpetuate the disease. The first step towards a cure, is to lessen this determination to the skin; and I have found nothing more effectual than the cinchona with the diluted sulphuric acid. When this variety occurs in the West Indies, a change of climate becomes often indispensible—the *cold* alone being frequently sufficient to produce a recovery. I may here remark that it is necessary to repress the perspiration, which so generally attends the *acute* species of the disease, before we can effect a cure." The coincidence of this last observation with the plan of Mr. Baynton of Bristol, will be sufficiently obvious.

Among the *internal* remedies may probably be enrolled *Exercise so as to produce profuse perspiration*, as mentioned by Dr. Marcet in the 3d vol. of the Med. Ch. Transactions. This gentleman, who cured himself of a violent sciatica by this mean, took the hint from a Newmarket plan of curing horses of rheumatism by sweating them in body clothes.—Next to his skin he wore stockings, drawers, and shirt, all of fleecy hosiery. Over these he put one, two, or three pair of flannel drawers—the same number of flannel waistcoats, and round his hips and loins, six yards of thick flannel; making, besides the drawers and waistcoats, eight thicknesses of flannel on the chief seat of the pain, and the origin of the sciatic nerve. Over these he wore warm pantaloons and a great coat. With these a walk of one or two miles generally brought out a profuse perspiration. On returning home, he threw off his wet, and put on dry, and well aired flannels—then lay down on a bed not warmed. This plan proved successful, and was not productive of emaciation or any other consequence injurious to his health.

External Remedies. The best mode of *internal* treatment will rarely succeed without *external* means. At the head of this class we may place the *vapour* bath: and next the tepid or *warm* bath. Joints may be exposed to the

vapour issuing from the spout of a kettle in which water is boiling; and, during this operation, they may be diligently rubbed with some such liniment as the following :— soap liniment, two ounces, liquor of ammonia, tincture of lytta, tincture of opium, of each two drachms, camphor a drachm.

But in young and vigorous subjects, where the ligaments and membranes of the joints are the principal seats of the pain, local abstractions of blood, by leeches or scarifications, should precede all other means. A drain, by repeated blisters, caustic issues, or a seton, would next be extremely serviceable, where the patient is wise enough to submit to a *temporary*, for the purpose of mitigating or removing a *permanent* evil. Electricity is a valuable remedy in this disease.

Friction, *Percussion*, *Compression*, *&c.* The atony and languid circulation of rheumatic parts must have, time immemorial, suggested *friction* in the cure of the disease. In India and China, percussion and compression have been applied in the removal of rheumatic and other pains for ages. I have myself seen the Chinese and Hindostannees practise these means in various ways; and about thirty years ago, the Oriental instruments were introduced into Haslar Hospital, and used there for more than a year, with advantage. The practice dropped, however, in consequence of those ludicrous ideas which are inseparably attached to the process of beating, squeezing, and shampooing, in this country at least. Drawings of the Indian instruments may be seen in the 3d vol. of the Medico-chirurgical Journal, page 109.

Mr. John Livingston, Surgeon of the Cirencester Indiaman, published, about seventeen years ago, "some observations on the benefit to be derived from *Compression* by the tourniquet, in the removal of rheumatic pains," in which he says that he has, "in a number of instances, been able to give *almost immediate relief to men labouring under a painful disease.*" More lately Dr. Balfour has proposed percussion, compression, and tight bandages, on, as he says, entire *new* principles. There is not a doubt but that, in chronic rheumatism, friction, or shampooing, succeeded by very tight and evenly applied bandages, may be very usefully employed—indeed I have witnessed unequivocally good effects from the plan; but very far short, as usual, of those related by the proposer. There is a Surgeon-Apothecary not

a thousand miles from a small country town in Kent, who is rapidly amassing a fortune by the indiscriminate application of a stimulating plaster all round the rheumatic limb or pained part. It appears to be some kind of pitch plaster with tartar emetic, as it brings out a crop of pustules, and puts the patient to the tortures of the damned, when the plaster is removed. Success, however, very generally attends the process; and the reputation of a Cooper or an Abernethy shrinks into nought before this village Esculapius. Of this gentlemen's *discrimination* I cannot say much after seeing the marks of the *infalliable Diacatholicon** on the scrofulous elbow joint of a lady, whose case was pronounced *Rheumatic!* There are other men, however, who stand *still higher* on the "rolls of fame," whose *Diacatholicons* never vary, whatever be the name or nature of the disease!

Lastly, I would recommend, as perhaps the most powerful external means of all, the *shower bath*, with subsequent friction, and warm clothing. This will be found, not only a successful mean of *cure*, but by far the most effectual preventive of chronic rheumatism.

---

* "The *Diacatholicon* was a universal medicine, that was supposed to purge away all the peccant humours." *The Gull's Hornbook, p. 53.*

A

PRACTICAL AND THEORETICAL VIEW

OF

FEVER.

SECTION IX.—It is not my intention to include in this section what are called the *Symptomatic* fevers—nor the various *eruptive* fevers, as small pox, measles, &c. The nature, causes, and treatment of these, occasion little discussion among the faculty, and are pretty generally understood, even by the tyros of the profession. It is to the subject of FEVER, strictly so called, that I shall confine my observations; and trite and exhausted as the theme may appear, I hope still to render it, in some measure, interesting. If I have omitted the adjective "*idiopathic*" it is not because I consider fever as in all cases dependant on topical inflammation or congestion; but because I wish to avoid a "war of words" about an abstract term. Some late writings, and particularly Dr. Clutterbuck's Essay, have divided the medical world in opinion, a very considerable portion subscribing to the Doctor's theory. There is still, however, as far as I can learn, a majority in favour of the old doctrine that fever may originate, and even proceed some way in its course, without local inflammation—or those topical affections which may be considered analogous to, or synonymous with local inflammation.

Subsect. 1.—*Etiology.* Contrary to the usual mode of proceeding, before entering on the nature of fever itself, I shall take a rapid survey of the *causes* of this wonderful disease. By systematic writers these have been divided into remote and proximate; but the latter being the actual *state* of the disease, will not yet come under consideration. The remote causes are subdivided into predisponent and exciting. The predisponent, however, often become the exciting, and the exciting the predisponent causes, as the following example will illustrate. Two labourers set out from London, in the summer or autumn, to work in the fens

in Lincolnshire. The one is a sober man, the other a drunkard. The latter is attacked with intermittent fever, while the former, though equally exposed, escapes. Here inebriety is evidently the predisposing, and marsh miasma the exciting cause of the disease. But the sober man having returned to London in the winter, commits a debauch, and immediately afterwards he is seized with ague. Here, on the other hand the latent miasma becomes the predisposing, and drunkenness the exciting cause of the fever. Let this be borne in mind, for it may help to explain more than at first sight might be expected.

Speaking generally, however, the two great exciting causes of fever are human and marsh Effluvia; while the predisposing causes are almost innumerable. The more prominent, however, are, plethora—inanition from excessive evacuations—the depressing passions—excess, whether in eating, drinking, gratification of the sensual passions—mental or corporeal exertions—extremes of atmospheric heat and cold, especially alternations of these or of heat and moisture—sol-lunar influence.

Now experience has determined, that of the foregoing and many other predisponent causes, any *one* (excepting perhaps the last,) will, when in a very high degree, induce fever without the assistance of any other. If this be the case, then, it is a natural and just inference that the operation of marsh and human effluvia on the human frame bears a very considerable analogy to the operation of those causes enumerated as generally *predisposing* to, but sometimes actually *exciting* fever. This may give us a clue to assist in unravelling the *ratio symptomatum* hereafter; but before entering on the effects, we shall say something of the causes themselves.

Subsect. 2.—Human Effluvium or Contagion. The existence of this febrile miasm as the cause of fever does not appear to have been known to the ancients, since Hippocrates makes no mention of it, and the strict prohibitions against *contact* with unclean or diseased persons recorded in the Mosaic code, do not seem directed against febrile, but chronic or local infection—probably against cutaneous or genital defœdations. It is curious, however, that Pliny, when describing the progress of an *endemic* fever, apparently solves a question which, to this moment, gives rise to the most violent altercations—namely, whether endemic fevers ever become contagious? "Et primo *temporis ac loci* vitio, et ægri erant, et moriebantur; postea,

curatio ipsa et contactus ægrorum vulgabat morbos." Lib. xxv, ch. 26. But more of this hereafter.

Notwithstanding the exertions of Dr. Bancroft and some others to invalidate certain testimonies respecting the generation of contagious effluvium, facts too stubborn to be swept away by the brush of sophistry attest that the effluvium issuing from the bodies of a number of human beings confined too closely, whether in a state of health or disease, will occasionally produce a contagion which is capable not only of exciting fever among those so confined, but of propagating itself afterwards from them to others.

Setting aside the testimonies of Bacon, Lind, Pringle, and others, the transports which received and conveyed home the wretched remnant of Sir John Moore's army after the battle of Corunna, afforded the most decisive and melancholy proofs that bodies of men confined close together between the decks of a ship in stormy weather, will soon become sickly, and that their diseases may be communicated to nurses and others, after they are landed, washed, and placed in the most clean and airy hospitals. It will hardly be contended that these men could have carried any infection on board, either in their persons or clothes, after a rapid retreat, during which, almost every stitch of garment was washed from their backs by the incessant rains. A dreadful and sanguinary battle at the water's edge, gave them no time to contract infection or even clothe themselves at Corunna. They precipitated themselves tumultuously, naked, exhausted, and wounded, into the first vessels that came in their way, and were there crowded from choice or necessity during a cold, wet, and tempestuous passage across the bay of Biscay. On this passage a most fatal typhoid fever broke out, which spread far and wide among the nurses and medical attendants of the hospitals in England where they were landed. They embarked indeed with an unusual degree of predisposition to disease, arising from excessive fatigue—chagrin—exposure to the elements by day and night—nakedness—want—occasional inebriety—insubordination, and last of all—exhaustion after a tremendous conflict that closed this disastrous retreat. It was utterly impossible, however, that a particle of fomites or the matter of contagion could exist among them at the moment of their embarkation; and it was too fatally proved that every transport exhibited a most destructive focus of infectious fever before they reached England. I have dwelt the longer on this point because

it bears upon questions that are now agitating the public mind; and because Time's telescope cannot be inverted here as it has been on other occasions, nor facts be denied that are so recent in the memory of thousands now alive. Within a few yards of the spot where the first edition of this work was written, the greater part of a family fell sacrifices to the effects of fomites that lurked in a blanket purchased from one of these soldiers after their return from Corunna!

It is not so well ascertained that the effluvia from *dead* animal matters *alone* will generate a contagious disease; at least it has been fashionable to deny such an occurrence since Dr. Bancroft's publication. But there are not wanting respectable testimonies in the affirmative; and it does not seem very incredible that offensive exhalations from large masses of putrefying animal matters should, under certain circumstances produce fever, as related by Forestus and Senac. The late fatal fever at Cambridge appears to have been of local origin at first, but propagated by infection afterwards.

Of what this contagious matter consists, we are totally ignorant, as it is perfectly incognizable by the senses, and incapable of being submitted to chemical analysis. Many people have declared that they felt an indescribable taste in their mouths, and sensation over their frames, together with a peculiar odour impressed on their olfactories, at the moment of imbibing the poison; but it cannot be ascertained whether these were produced by the contagion itself, or by any effluvium accompanying or conveying it.

With the laws which govern contagion, we are fortunately better acquainted. It does not appear to be much under the control of the seasons, since a full *dose* of it will produce the specific effect at any time of the year. As warm air causes a greater exhalation from bodies, it might, *a priori* have been expected that this contagion would spread most in the summer; and the popular opinion to this day is, that hot weather is prejudicial to patients labouring under typhoid fevers. We find, however, that it is in winter that these diseases are most prevalent. The reason appears to be simply this:—the freer ventilation of summer dilutes and dissipates the exhalations from the sick, rendering them innocuous; while the confined air of small apartments among the poor, in winter, tends to condense, as it were, the febrific effluvia, and embue the bedding, &c. of the sick

with the same, forming a fruitful source for the dissemination of the disease by means of *fomites*, a form in which the matter of contagion is eminently powerful. Experiments have proved that this contagion, when diluted with pure atmospheric air, becomes harmless at the distance of a few yards—perhaps of a few feet; and hence the surest means of preventing its dissemination are, cleanliness and ventilation. Indeed it is only where these *cannot* be procured, that the *juggling* process of fumigation need ever be resorted to; and I firmly believe that if the latter ever checked the spread of contagion, it was more by its effects on *mind* than on *matter*. The history of animal magnetism alone will teach us how far imagination may go in actually arresting the progress of disease in its full career; and in no case have *mental* impressions more decided effects than in checking or facilitating the operation of contagion on the human body.

The next thing to be observed is, that from idiosyncrasy of constitution, some individuals are infinitely less susceptible of the contagion than others; and also, that habitual exposure to it, renders us more capable of resisting it, as is exemplified among nurses and medical men. This circumstance appears explicable on the principle of *habit* which renders us able to bear a larger dose of any other poison, as of Arsenic, Opium, &c. Dr. Haygarth affirms that he has been in the *habit* of breathing, *almost daily*, air strongly impregnated with the infectious miasms of fever, during a space of more than 50 years, and yet never but once caught a fever in all that time. Some periods of life, however, render the body more susceptible than others—the very young and very old are more exempt than those of intermediate ages. Ulcers and other chronic diseases, also, seem occasionally to confer an insusceptibility on the constitution. The *latent* period, or that which elapses between the reception and manifestation of the contagion differs exceedingly, according to the degree of concentration in the poison and the predisposition of the subject. There is no doubt but that many doses of the poison are received which produce the fever or not according as the various predisposing causes are applied. It is, however, seldom less than fourteen, or more than sixty days between the receipt of the infection and the unfolding of the fever.

Subsect. 3.—Marsh Miasma. The febrific effluvia of marshes, as well as human contagion, seem to have escaped

the notice of Hippocrates. This is the more to be wondered at, as many of the fevers which he describes are clearly the bilious remittent fevers of the present day, [*see, for instance, Popularium* 1. *Ægrotus octavus,*] and produced, of course, by the same causes. Lancisius was the first who drew the attention of medical men to the subject, since which, marsh effluvium has been traced as the cause of some of the most destructive endemics that occur both within and without the tropics. The fevers of Cadiz, Carthagena, Gibraltar, and Zealand, may competite, in respect to virulence and fatality, with those of Batavia, Bengal, St. Domingo, and Philadelphia. The term *marsh*, is not so proper as *vegeto-animal* effluvium or miasma; since experience and observation have proved, that these febrific exhalations arise from the summits of mountains as well as from the surfaces of swamps. The mountains of Ceylon, covered with woods and jungle, and the vast ghauts themselves, give origin to miasmata that occasion precisely the same fever as we witness on the marshy plains of Bengal.

It has lately been the fashion to deny that *animal* matters have any share in the composition or production of these miasms. But it ought to be born in mind, that in all those parts of the Earth where, and seasons when, miasmata abound, "almost every particle of matter, as I have elsewhere observed, teems with *animal* as well as vegetable life. As the scale of existence descends, in the animal kingdom, the amazing circle of reproduction and decay is perpetually trodden by myriads of animated beings, whose ephemeral vitality has scarcely commenced, before it closes in death! No sooner has the æthereal spark deserted its tenement than the *latter* is resolved by the heat and moisture of the climate into its constituent elements, and formed into other compounds." It is during this dissolution of animal and vegetable remains that a certain hitherto inexplicable *something* is extricated which operates with baleful influence on the functions of the human frame. That the miasmata exhaled into the air during the day, descend with the dews of the evening, is rendered highly probable, by the well known fact, that the night air and evening dews are found insalutary in all, but particularly in hot climates.

Vegeto-animal effluvium is by no means so limited in its range as human contagion. It is supposed to become innocuous at a certain distance from its source, probably in consequence of mere *dilution*. But *elevation* appears to

be of more importance than horizontal distance from the miasmal focus. "Thus," says Hunter, "the difference of a few feet in *height* gives a comparative security to soldiers quartered in the same barrack." This circumstance corroborates the idea that the miasms exhaled during the day descend in the evenings, becoming more and more concentrated as they meet the exhalations from the still tepid earth, forming at length a dense stratum of highly impregnated atmosphere, close to the ground. Hence the superior salubrity of the upper ranges of buildings, and the danger of sleeping on the earth in such places.

Another circumstance which appears to give additional power to this febrific cause, is, the natural *exhaustion* which takes place in the human frame, during the exercise, and application of various mental and corporeal stimuli of the day, rendering the living system more susceptible not only of the noxious effluvia, but of the raw, chilling cold of the night.

The space of time that intervenes between the reception of marsh miasma into the constitution, and its manifestation in the shape of fever, varies from a few hours to several months, according to the concentration of the poison, the condition of the subject, and the number and force of the predisponent and exciting causes. Thus the exhalations of Batavia required but one night—the miasmata of Walcheren, in some instances, required six or more months; and were then only called into action, in consequence of the application of *other* febrific causes. Under ordinary circumstances, however, ten or fifteen days may be calculated on as an average.

Subsect. 4.—*Ratio Symptomatum.* We now proceed to trace the *action* of these febrific causes on the human frame —or in other words, the *ratio symptomatum* of fever itself; for in nature and in truth, there is no such thing as a *proximate cause* of this disease, the whole train of symptoms being a series of causes and effects, extremely difficult to delineate or comprehend. If any thing could deserve the name of *proximate cause*, it would be some peculiar state or phenomenon *invariably present* at the beginning of fever, and without which, the disease could not be said to exist. But all writers agree that there is no *one* symptom, state, or phenomenon which is constantly observable in fever. Neither quickness of pulse—increased heat—thirst—nor head-ache can be laid down as pathognomonic; for al-

though *some* of these are *always* present, no *one* of them is invariably so.

If an appeal, however, be made to accurate clinical observation, it will probably be found that from the first till the last moment of fever, *two phenomena* are constantly present—a derangement in the balance of the *circulation*, and of the *excitability*. If the calibre of the radial artery, or the strength and velocity of its pulsations shew nothing preternatural, (which by the bye will be a rare occurrence) yet, the experienced physician can instantly detect the unequal distribution of the vital fluid, as well by the torpid state of the *extreme* vessels on the surface, and throughout the glandular system, as by the turgidity of the *primary* trunks especially of the veins. The imperfect perspiration and secretions will point out the one; the peculiar febrile anxiety—hurried respiration on attempting to sit up or move—fulness of the præcordia, and heaviness about the head, will clearly demonstrate the other. In no one instance, during a long acquaintance with fever, have I failed to notice these indications in a greater or less degree, of a deranged balance of the *circulation*.

The proofs of broken balance in the *excitability* are equally manifest. It is now well known how much the functions of the glandular system are dependant on the nervous. In fever, the secretions are never perfectly natural. They are in generally scanty—sometimes preternaturally copious; but always depraved. While this torpor or irregularity is going on in the glandular system, the nerves of sense shew plain marks of inequilibrium of excitability. The same degrees of light and sound that in health would be pleasing, will in fever, be either distracting, or incapable of making any impression at all. The stomach will be in a state of morbid irritability, and the intestinal canal completely torpid. Speaking generally, however, the glandular or secreting system is irregularly torpid—the nervous or sentient system, irregularly irritable and debilitated.

Now if we find that the general operation of the various *predisposing* causes of fever, is to disturb more or less, according to the force and condition of the subject, the balance of the circulation and excitability, we advance one step nearer to a knowledge of this *proximate cause* in fever, because we find in it the same *ratio symptomatum* as in all the phlegmasiæ, modified only by the *exciting* cause.—For example: one man is exposed to a rapid atmospheri-

cal transition, or a current of cold air when the body is heated; another man is exposed to the effluvium issuing from the body of a typhous patient; a third commits a great and unaccustomed debauch in spirituous or fermented liquors:—a fourth is overwhelmed with a series of losses and misfortunes; a fifth is exposed to the exhalations arising from a fen; while a sixth performs a rapid and toilsome march under an ardent sun. These six men (and the list might be far extended) will have six different kinds of fever—all agreeing, however, in the two points under discussion [a derangement of balance in the circulation and in the excitability] but each offering *peculiar* traits and phenomena, in consequence of the *peculiarity* of cause. Thus the *first* patient will, in all probability, have a fever remarkable for great vascular action, or derangement of the circulation, with a determination to some internal organ, most likely the lungs, in which determination or inflammation consists the chief danger.

The *second* man will have a fever at a much longer interval from the application of the cause, and which, contrary to the former case, will shew greater marks of derangement in the balance of the excitability, than of the circulation. In this instance, the functions of all the organs will be more or less affected; the fever sometimes running its whole course without producing morbid alteration of structure; at other times, giving origin to congestion or inflammation in the brain, liver, stomach, &c. destroying the patient at various and uncertain stadia of the disease. To these peculiarities may be added the power of propagating itself by reproduction in other subjects.

The *third* man will have high vascular action, with considerable determination to the head, stomach, alimentary canal, &c. or probably that peculiar affection denominated "delirium tremens."

The *fourth* will have what is called a slow nervous fever so admirably described by Pringle.

The *fifth* will have a fever differing from all the preceding, inasmuch as it will shew great remissions, or even intermissions, on alternate days, with determinations, if long continued, to the liver and spleen.

The *sixth* man's fever will evince great violence at the beginning, with little or no remission; and end in a sudden determination to an internal organ—generally the liver; or change into a long and dangerous typhoid type.

Now the only symptoms or circumstances that are *invariably* present in *all* these cases, are the *inequilibria* above-mentioned; the other varieties appearing to depend on the difference of cause, and idiosyncrasy of constitution. Need we then seek farther for a *proximate cause* of fever?

All the causes then of fever, from the most remote and predisposing, to the most immediate and exciting, however varied may be their *mode of action*, tend constantly to one point, and directly or indirectly to induce derangement in the balance of the circulation and excitability. Some of these *appear* to produce their *first* effects on the vascular, others on the nervous system. Thus atmospherical vicissitudes evidently give rise to violent oscillations of the circulation; yet these transitions, and still more the oscillations must secondarily affect the nervous system. On the other hand, human and marsh effluvia seem to make their *first* impression on the nervous system, the circulation apparently becoming deranged consecutively. Of the two febrific causes, however, human contagion shews its effects most on the nervous—marsh miasma, on the circulating system. Debauches and excesses operate on both systems, hurrying the circulation, exhausting the excitability, and producing fever, with or without local inflammation. The depressing passions, like human and marsh poison, seem also to affect *primarily* the nervous system, which, through every stage of the fever bears the onus of disease. Excessive muscular action and an ardent sun so much derange the circulation and the functions of certain internal organs, as to induce great fever with determination to the biliary organs in particular.

The manner *how*, and the reason *why* these various causes, predisponent and exciting, act on the human frame producing the phenomena of fever, are equally inscrutable as the manner *how*, and the reason *why* tartrite of antimony should have a tendency to act on the *upper*, and aloes on the *lower* portion of the alimentary canal. Let any person demonstrate the *modus operandi* of these two simple substances, and then I shall engage to demonstrate the *modus operandi* of human and marsh effluvia. The nature or essence of many of these causes themselves, is also totally beyond our comprehension. Some of them are even *ideal*, as the various depressing passions, &c. Yet we must not

cease to investigate the *effects* though we are ignorant of the nature and mode of action of the causes.

We shall now select one cause, and trace its operations on the human frame, as a sufficient specimen and explanation of the ratio symptomatum in all. The varieties and peculiarities from this specimen being, as I have stated before, ascribable to variety of cause and peculiarity of constitution.

A man after exposure to the miasmata of marshes, begins to exhibit symptoms of diminished energy in the nervous system, evinced by the various feelings and phenomena which usher in the cold stage of fever.

The power of the heart and arteries appears evidently to be weakened, the consequence of which is an inability to propel the blood to the surface and throughout the secretory organs; and from the diminished excitability of the system, we observe a quiescence of the capillaries, and a shrinking and coldness of all external parts, without the intervention or necessity of spasm. In this state it follows, of course, and is allowed by all, that the great volume of blood is confined to the heart, and large internal trunks of vessels particulary the veins. But this appears an inadequate explanation of the swelling, tension, oppression, and even pain about the hypochondria, as well as of many other of the symptoms attendant on the cold stage of fever in particular. If during the latter, I place my hand on the radial artery and endeavour to estimate its calibre, and the quantum of blood transmitted through it in a given time, compared with what takes place in the hot stage, or even in health, I shall conclude that the artery is not then above one-third the size, nor the quantity of blood passing through it, more in proportion. Such being the case, it is difficult to conceive how the whole mass of blood can be in *actual* circulation at this time. Besides, therefore, the confinement of a large share of it to the heart and large vessels, where its motions must be slow, I venture to affirm that another considerable portion of it is *arrested*, as it were, and accumulated in certain situations, where it remains, *pro tempore*, out of the course of *actual* circulation. This congestion or complete quiescence, takes place in the portal circle, where the blood is, at all times, languid in its current, there being only a slight *vis a tergo*, and but little muscular propulsion. The consequence of this must be, that not only the liver

and the various branches of the vena portarum, will become turgid, but also the spleen, (which returns its blood to the heart through this channel) the stomach, pancreas, and intestines, will participate in this turgescence.

If it be asked why the blood should cease to circulate in these parts during the cold stage of fever, sooner than in others; I answer that the portal is the only circle or set of vessels in the sanguiferous system, *originating and terminating* in capillary tubes, or inosculations with other vessels. They begin by the minutest threads from the stomach, spleen, pancreas, and intestines; these enlarge as they approach the liver; there they diverge, and finally dwindle again into the same diminution with which they commenced. All other veins dilate as they approximate to the heart, thereby affording more and more facility to the return of the blood, which is in most places assisted by the action of circumjacent muscles. The temporary quiescence or torpor, then, of the extreme branches of the vena portæ in the liver, from sympathy with the extreme vessels on the surface (before elucidated, and I hope satisfactorily proved) must completely check and arrest the reflux of blood from the whole of the viscera abovementioned. This state of things at once explains the tension, elevation, pain, weight, and anxiety about the præcordia. It shews why the biliary and pancreatic secretions are, in common with, and still more particularly than others, entirely checked for the time, while the gradual accumulation and temporary abstraction, as it were, of so great a proportion of the vital fluid from *actual* circulation, will readily account for most if not all the phenomena of the *cold* stage, many of which were inexplicable on other principles. It appears to me, indeed, that this *temporary* arrest of so much blood in the liver and portal circle (including the spleen) is one of the most admirable of nature's expedients to obviate more dangerous effects. When the balance of the circulation is broken, and the blood is determined from the surface upon the internal parts, were it at all to accumulate in the large vessels about the heart, and in the lungs, immediate death would be the consequence; but the local abstraction of so large a proportion of it from *actual circulation*, by its quiescence in the circle abovementioned (where plethora is not so immediately detrimental) preserves the heart and lungs from being overpowered and suffocated, till reaction restores the equilibrium between the surface and the interior.

From this view of the affair, the utility of the spleen, as an organ of preservation, is no longer doubtful* But this accumulation of blood in the portal circle and viscera, must, of necessity, produce a corresponding plethora in the branches of the cœliac and mesenteric arteries leading to them; and since such large and important exits for the blood from the descending aorta, are, as it were blocked up, a greater share of the circulating mass will be thrown in consequence through the carotids and vertebrals on the brain, occasioning or increasing the head-ache and congestion in that organ. This, and the congestion in the lungs, however, will be principally caused by the difficulty, indeed the inability of the heart to propel the blood from the ventricles as fast as it returns to the auricles from the brain and lungs; hence the *venous* turgescence in both these organs, occasioning the head-ache, stupor, laborious respiration, and febrile anxiety attendant on the collapse or cold stage.

The effects of sympathy are likewise to be taken into consideration. I have mentioned that which exists between the extreme vessels on the surface, and those of the vena portæ.—The lungs too will sympathise with the skin, while the stomach and liver will sympathise with the brain, and *vice versa*.

This state of things, however, lasts not long. Reaction at length takes place. Whether it be from "the stimulus of the blood itself"—from that of the "retained secretions"—from "accumulated excitability"—from the "vis medicatrix naturæ"—or from all combined, we need not stop to enquire, (because *final* causes can never be discovered, and because we are rather tracing the *quo modo* than the *quo* in fever) but so it is, that the brain, the heart, and the arteries re-acquire vigour—the two last driving the blood to the surface, with great increase of heat, and a more rapid circulation of the vital fluid, all of which, nevertheless, does not appear to come into motion, till the sweating stage. For this preternatural heat or febrile stricture seems to have the same effect, for a time, as the previous coldness or collapse, in preventing perspiration externally, and secretion internally; since we find the load and uneasiness at the præcordia and epigastrium continue till the extreme vessels

* Vide Dr. Armstrong's query; Essay on Typhus, p. 78.

on the surface relax, and a sweat breaks out, when the *simultaneous* relaxation in the extreme vessels of the liver, lungs, &c. allows the blood to pass on freely to the heart, and the various secretions to flow, relieving the internal congestions. This last effect, so much accelerated by the cold affusion, in the hot stage of fever, seems to have escaped the notice of Currie and Clutterbuck.

As the head-ache of the cold stage, from *venous* plethora, is continued in the hot, from arterial excitement (with a corresponding difference in sensation, as noticed by Fordyce) so the nausea and sickness at stomach, arising apparently in the cold fit from sympathy with the brain and liver, perhaps the skin, is continued in the hot, from the same causes (these organs being still affected though in a somewhat different manner) and the vomiting is often brought on and kept up, by the sudden augmentation of gastric, biliary, and other secretions of a depraved quality, which are poured out towards the commencement of the sweating stage, particularly in hot climates, and in the hot seasons of temperate climates. In general, however, the irritability of the stomach subsides *pari passu*, as perspiration and secretion commence, with relief to the brain, lungs, liver, &c.

If, as some suppose, the cold be the cause of the succeeding hot stage, so in the latter, the violence of the reaction, or rather overaction of the sanguiferous system, with the morbidly increased excitement of the nervous system; must predispose to a repetition of the fits, from the subsequent atony produced thereby. If there be sensorial energy enough to enable the heart and arteries to clear the viscera and brain of the load of blood with which they were oppressed, and to set the secreting organs in action, then an *intermission* takes place; but if these circumstances be incomplete, a *remission* only. In what is called continued fever, it appears from the affection of the head, the load on the præcordia, the confined pulse, the dry, hot, and constricted skin, with a corresponding diminished biliary secretion, and costive bowels, that the constitution is called upon for almost constant, or at least frequently reiterated exertions to relieve the internal congestions, and restore the secretions and excretions, marked by more or less of diurnal remission and evening exacerbation, till it either becomes habituated to the original cause, and restores the balance of the circulation and excitability, or sinks, unequal to the task, most commonly with the destruction (from

inflammation or sanguineous determination) of an organ essential to life. Dissection has so repeatedly detected the existence of these inflammations, congestions, and effusions, in all fevers of violence, that it is not necessary here to quote any passages from practical authors on the subject. But it may be remarked, *en passant*, that no *one organ*, not even the brain, is so invariably the seat of lesion as to enable us to build any theory on the subject, and hence Dr. Clutterbuck has probably carried his doctrine too far, by confining the fons et origo of fever within the cranial parietes.*

Subsect. 5.—Therapeia. We now come to try the above theory by a direct application of its principles to *practice*, the grand and only legitimate criterion of its truth. If we can shew that it is consonant with, and elucidates the operation of those remedial measures which either ancient or modern experience has employed in fever, it is no trifling corroboration of its solid foundation. And, even if it points to the most successful plans of treatment which modern investigation has devised, it must be allowed to be a useful, though perhaps only a visionary theory.

It will not be necessary, however, to examine the whole farrago of remedies which ignorance, superstition, or prejudice had, at various periods, introduced for the treatment of fever; it will be sufficient to notice those which have stood the test of time.

1st.—VENESECTION.

Bloodletting is as ancient as the wars of Troy, and the practice of Podalirius. If Hippocrates neglected it, Arœteus, Celsus, and Galen made ample use of this important measure. It is true that even in our own times the dogmas of the schools had nearly proscribed for a while, what nature and observation had pointed out from the

---

A course of demonstrations in our Anatomical schools, pointing out the morbid appearances resulting from *ante-mortem* diseases, and distinguishing them from those which arise from *post mortem* changes, seems a desideratum.

The author having had an early and enthusiastic bias toward pathological investigations, sought all opportunities, during the last 20 years, of prosecuting this branch of Medical Science, and stimulating others to the same.

The number of what may be termed *warmed blooded dissections*, that is within a few hours after death, which he has made or witnessed, would scarcely be believed; but they have convinced the author that numerous morbid appearances are daily charged to the account of living disease which resulted from *post mortem* operations of dead matter.

earliest dawn of medicine to the present time, in every climate from the banks of the Scamander to the vales of Otaheite.

The bounding pulse, the fever-flushed cheek, the throbbing temples, and aching head, must indeed have vindicated the propriety of bloodletting in every æra, and in every mind not warped by the bias of some fashionable doctrine.

In these scrutinizing days of investigation and experiment, the lancet has dispelled the mists of prejudice, the phantoms of debility and putrescency, with the delusions of the Brunonian school; and bleeding is justly regarded as the paramount remedy, not only in symptomatic, but in all the more violent and fatal idiopathic fevers.

The consonance of this measure with the principles I have laid down, is so evident as scarcely to need comment. When the balance of the circulation is broken, and determinations take place to one or more organs, the most effectual means of restoring the balance, and of relieving those organs or parts from their overplus of blood, will be found either in local or general abstraction of the vital fluid. It is not from there being *less* than usual of blood, in some parts, but from there being *too much* in others, that the danger consists, and that we are called upon to reduce the whole mass below par. Nature herself invariably points out this indication, and, in perhaps a majority of instances, fulfils it in her own way. Thus we find that every paroxysm of fever is terminated by some evacuation from the system, whether by perspiration, urine, increased secretions, or some local hæmorrhage. In what is called *continued fever*, the nocturnal exacerbations are terminated in the morning by some slight modifications of the foregoing evacuations; and in all fevers and all stages of fever, nature effects *depletion* by preventing *repletion*; and hence that invariable attendant on fever *anorexia* is one of the wisest and most salutary measures which nature can put in force to finally overcome the disease: though she is too frequently baffled in her attempts by the officious interference of the cook, the nurse, or perhaps the medical prescriber.

I shall now make a few remarks on the most judicious manner of employing this remedy in fever; for on this, in a great measure, depends its success; and to the contrary, I believe may be attributed not only its failure but its disgrace.

In the first place, the time for bloodletting in fever should be an object of great attention. It should not only

be *early* in respect to the accession of the fever, but the acme of the paroxysm, or the height of the exacerbation should be selected as the proper period, for making the abstraction. At these times the evacuation will produce an alleviation of symptoms, and often a solution of the paroxysm or exacerbation; whereas if taken during the remission of the fever, when the system is, as it were, in a state of collapse, *deliquium animi* is often the consequence, followed by a train of nervous symptoms and debility that are charged on the *measure*, when they ought to be placed to the account of the ill judged period of its application.—In some dangerous states of *venous congestion*, however, it may be necessary to bleed, even in the absence of reaction. *See Dr. Armstrong's very valuable work on Typhus.*

The manner in which blood is drawn ought to be attended to. When any strong determination to the head, or other organ exists, the vascular system so accommodates itself to the loss of blood from a *thready* stream that little or no relief is obtained for the suffering viscus, while the general strength is unnecessarily reduced by the quantum lost.

Although we are to be much less guided by the appearance of the blood drawn, than by the order and violence of the symptoms; yet as a certain coat or crust of fibrine very generally, though not invariably, covers the coagulum when there is any local inflammation going on, we should attend to those circumstances in the abstraction that are favourable to the developement of this criterion. Thus the stream of blood should be free and of a good size; and it should be received into the centre, not impinged against the side of, a narrow and rather deep bason, with a polished internal surface. If the reverse of these directions be observed, as is too often the case, the blood will not exhibit any inflammatory buff, though inflammation be actually present at the time.*

As in fevers, as well as in some inflammations, it is not so much the general plethora of the vascular system, as the broken balance of the circulation that is to be corrected, so

* Vide the admirable work of Dr. Armstrong on typhus. Also Dr. Dickson's account of the fever in the Russian ships at Chatham, *Edinb. Journal.* To these two gentlemen the medical public is greatly indebted for a knowledge of that extent to which venesection may be safely carried in certain stages and forms of typhus. Dr. Dickson, in some degree anticipated Dr. Armstrong; but I have reason to know that the latter had not seen Dr. D's. paper when he published on typhus.

local abstractions of blood from the vicinity of those parts where the congestion or determination exists, are often of more importance than general bloodletting.

It is to be regretted, that whether from the prejudices of the patient or the inattention of the practitioner, the seat of the determinations in fever is rarely ascertained and relieved by topical bleedings. The violent head-ache, indeed, and arterial pulsation at the temples, frequently draw the practitioner's attention to that part, and leeches are accordingly applied; but the epigastric region where there is always more or less fulness, and to which the vital fluid seems in most fevers to gravitate, is too much neglected. Leeches or scarifications should long precede the necessity for blisters in these parts.

In the fevers of this country, however, where violent determinations to particular organs are comparatively rare, general bloodletting is of much less consequence, than in those warmer latitudes where the violence of the disease is exalted to a high degree, and where its march is proportionably rapid. In a considerable proportion of cases, therefore, the balance of the circulation and excitability may be restored by the following means, viz.

2d.—PURGATIVES.

The ancient physicians had a very limited range, and a very rough list of purgative medicines. They made, however, a considerable use of them. Of late they were almost neglected by Cullen, and proscribed by Brown, in the fevers of this country, unaccompanied with topical inflammation. Dr. Hamilton and the greater number of modern practitioners employ purgatives freely, without fear of that far famed, and much dreaded debility. The principle on which these act, in fever, are by no means generally understood; and the practice itself is frequently inefficient from this cause. Even Dr. Hamilton seems to attribute most of the good effects of purgatives in fever to the removal of irritating fecal remains. But if this were the case, the glysters of Cullen would have answered the same end, which, however, they did not. The removal of fecal accumulations, from the small intestines particularly, gives a more free descent to the blood through the abdominal aorta and its branches, and thus mechanically assists in the restoration of balance; the increased secretion from the mucous

membrane of the alimentary canal, must also powerfully deplete the cæliac vascular system; but a very salutary *modus operandi* of purgatives in fever, has, I believe, escaped the notice of physicians, although I conceive it to be an important one; I mean the change from torpor of the intestines to a brisk peristaltic motion, whereby the blood which has been shewn to accumulate, and as it were stagnate, in the portal circle, is propelled forward, and the biliary secretion increased. Another salutary effect is produced by the sympathetic influence which the internal surface of the alimentary canal exerts on the cutaneous surface of the body; for although drastic purging will check profuse perspiration, yet where torpor pervades both the internal and external surfaces of the body, a restoration of the functions of the *former* contributes to a restoration of function in the latter; a fact, of which any one may convince himself at the bed-side of sickness by an attention to the circumstances under consideration.

When therefore the peristaltic motion, the gastric, and the intestinal secretions are roused by purgatives, the head which, from the peculiarity of its circulation, must suffer sanguineous congestion, is almost immediately relieved by the *change of balance*, thereby induced. From these considerations it will not appear a matter of indifference, what purgative medicine we use. Experience has taught us that some, (for instance castor oil) do little more than clear the intestinal canal of what already exists there; that others (for instance the neutral salts, jalap, &c.) produce copious *watery secretions* into the alimentary tube, during their operation;—and that others still, (for instance the submuriate of quicksilver) besides acting as a common purgative, increase particular secretions, as of the bile, and carry them off whether in a healthy or morbid state.

From the importance of the hepatic function in the animal economy, and bad effects which result from any derangement or obstruction of it in febrile commotion, it is evident, and experience proves it, that into the combination of purgative medicines in fever, those of a cholagogue power should almost always enter. Hence it has been found both in this and other countries, that powdered jalap and submuriate of quicksilver formed a composition most admirably adapted to the purposes abovementioned, as may be seen in the writings of Rush, Jackson, Hamilton, Armstrong, Dickson, &c.

Hence also, we see how purging, by rousing the torpid circulation and excitability of the abdominal viscera, determining the blood through the various branches of the aorta which were before choaked up, and thereby removing the congestion in the head, restores strength, by relieving the sensorium, instead of adding to the pre-existent debility, as was dreaded by the Brunonians and Cullenians, and which dread still fetters the hands of numerous practitioners even in this country. The operation of purgatives then, is perfectly consonant with, and elucidates the fundamental principle, to be kept in view in fever—*a restoration of equilibrium in the balance of the circulation and excitability.*

3d.—MERCURY.

Various have been the disputes respecting the operation of mercury on the human system. A stimulant property has been very generally attributed to this mineral, apparently from its quickening the vascular action, and "exciting an artificial fever."* "Hence," says the enquirer (loco citato) "its efficacy in remittent and continued fevers is very equivocal. At the commencement of those diseases I believe that it does mischief, if exhibited in any form to exert its power on the salivary glands, *alone*." It would be difficult to select a passage in any medical work which contains so much error and so much want of knowledge in so small a space, as the above paragraph. In the first place, those who condemn the use of mercury most, condemn it on this principle, that in some very concentrated forms of inflammatory fever, as the endemic of the West Indies, it cannot be brought to exert its influence on the system in time, and therefore there is danger in trusting to its operation. In the second place, who ever saw mercury affect the salivary glands *alone*? Narrow indeed is that view of the mercurial action which stops short at its quickening the pulse, and "exciting an artificial fever."

The fact is, that ptyalism is merely a symptom that the salivary glands are affected in common with every other gland, and every secreting and excreting vessel in the system. Thus flood-gates are opened in all directions, and every part of the human fabric experiences a rapid diminution—in short, mercury is never more an *evacuant* than when it produces ptyalism. This general depletion is still farther increased by the ptyalism preventing any supply of nutriment which the patient or friends might wish to introduce.

---

* Ed. Journal, vol. 6, p. 181.

But its great *febrifuge* power seems to result from its steady action on the extreme vessels, both in the glandular apparatus and throughout the whole body, by which topical inflammation or congestion is resolved, and the secretions and excretions are promoted. In this way it is one of the most powerful remedies we possess in equalizing the balance of the circulation and excitement, and subduing the morbid actions of fever. *See Dr. Armstrong's inestimable work on typhus, and various sections of my work on Tropical Climates.*

4th.—COLD AND TEPID AFFUSION.

The operation of these *apparently* different measures, in mitigating or even arresting fever, is in perfect consonance with the principle laid down.

Leaving out the effect of *sensation* on the nervous system, during the affusion of cold water on the febrile surface of a patient, it is evident that the violence of re-action (at which time alone it ought to be applied) is mitigated by the cold, while the febrile irritation of a strictured surface is taken off.

That these objects tend to a restoration of balance in the circulation and excitability, need not be insisted on; the other effect of cold affusion, namely, a subsequent perspiration, will also be found to have a similar tendency.

The effect of *tepid* affusion during re-action, or the hot stage of fever, is precisely analogous to that of the cold, only less forcible in degree; for it must be remembered that the tepid bath is, or ought to be of a much *lower* temperature than the surface of the body, when applied in the *hot* stages of fever, and consequently acts in reality as a cold bath, only in a much more gentle manner.

When it is applied in the cold stage of fever, its operation in drawing the blood to the periphery, and thus restoring the balance of the *circulation*, is direct and obvious; while in restoring sensibility to the torpid skin, the balance of excitability is of course, equipoised. The action of cool air in fevers is easily explicable on the same principles.

5th.—EMETICS.

The gastric irritability which accompanies most fevers might have led to the suspicion that nature aimed at relief by unloading the stomach, and hence the early use of emetics. They are now much less frequently employed; though

it is certain that they produce other salutary effects beyond the mere evacuation of the stomach. They determine to the surface, in common with diaphoretics, and produce a relaxation there, which generally ends in perspiration. Their utility therefore, in certain states and kinds of fever, is unquestionable, and consonant too with the principle which I have endeavoured to establish; but their violence, in certain fevers and climates where unusual irritability of stomach too often prevails, has brought them much into disuse, even in opposite circumstances. The debility also which they induce gave the Brunonians a dislike to their employment.

6th.—DIAPHORETICS.

These have a close affinity to the last-mentioned remedies, but are of milder operation. In all fevers of a marked periodical type, there is such an evident remission, or solution of the paroxysm in the sweating stage, that physicians must have very early endeavoured to imitate this salutary process of nature by artificial means. This, however, has often led to disastrous results; for observing that heated rooms, multiplicity of clothing, warm liquors, &c. induced perspiration in health, the same means were resorted to in disease, and too often with the most pernicious consequences. They knew not till lately, that the strictured surface of a febrile patient will seldom relax into a perspirable state, till its temperature is *reduced* below the fever heat, and consequently when they failed in their object, they did much mischief, and when they succeeded in *forcing* out a perspiration, the temporary relief obtained, by no means counterbalanced the previous increase of febrile excitement.

Now that the principles which govern the perspiratory process are better understood, the long and endless farrago of sweating medicines is reduced to a few neutral salts, as the citrate of potash, or acetate of ammonia, accompanied occasionally with small doses of antimony. These, with *cool* diluent drinks, are the only safe or salutary diaphoretics in fever; and probably act on the surface from its sympathy with the stomach.

It is needless to state that the operation of this class of remedies is in perfect consonance with the principles I have endeavoured to maintain.

7th.—TONICS AND STIMULANTS, INCLUDING BARK, WINE, OPIUM, &c.

It may seem a little strange, that the most diametrically opposite plans have succeeded in fever, and been lauded to the skies by their supporters as infallible. Hence many have supposed that were fevers left entirely in the hands of nature, as many would recover as under the most skilful treatment.

Whatever truth there may be in this, it is not equally correct that nearly the same proportion recover under all kinds of treatment. There is very little doubt but that, under *judicious* modern measures, not only a greater proportion recover from the graver types of fever, but a vast number of fevers are prevented from assuming the more dangerous forms.

Neither need it be wondered at, that both stimulants and sedatives should occasionally prove useful in fever. I have shewn that when the excitability and vascular action are too great in one part of the system, they are deficient in others; hence the diffusive stimuli have the effect of rousing the torpid parts into action, but too often at the expense of the over-excited organs; and this has been the distinguishing feature of the Brunonian practice. Tonics and stimulants were also frequently necessary in the ultimate stages of fever, where early evacuations were not premised; because the system was exhausted by its own efforts, or by injudicious remedies, and nature required a stimulus at the close of the disease. But now it is found, after fatal experience, that by lessening re-action at the beginning, we preserve the powers of the constitution for ulterior efforts, and thereby obviate the necessity of stimulation at almost any period of fever.*

To shew how dangerous it was to draw conclusions respecting *debility* from the salutary operation of stimulants in fever, the following example may suffice. From deranged balance of excitability the heart and arteries become incapable of performing their office in a proper manner.—If their excitability be too great, they drive the blood with an impetus to the brain that may cause delirium: if their excitability be defective, the heart is incapable of unloading

---

* Vide Dr. Armstrong's work on typhus, where the subject is handled with infinite skill.

the venous system, and distension of the veins and sinuses of the head produce the same effect. Now, wine, if given *judiciously*, and to a certain extent, in the *latter* case, will impart such vigour to the heart as will enable it to unload the venous system of the brain, and thereby remove the delirium, without giving too much impetus to the arterial system; but if the same medicine be exhibited in the former case, it will evidently increase the symptom it was intended to relieve! In other words, some parts of the system being in a state of *torpor*, and others in a state of *irritability*, if stimulants be applied to the *former*, they *may* do good, but if to the *latter*, they *must* do harm. Hence the value and the necessity of discrimination in the practitioner; and the fatal effects of a *routine* practice.

In some of the more protracted fevers of this climate, assuming the typhoid and nervous type, the proper time for exhibiting the stimulating class of remedies requires the clearest judgment of the practitioner, and it is at these critical and decisive moments, that real ability unfolds its acuteness of discrimination, and snatches the patient from the jaws of death; while the blundering routinist unconsciously signs his quietus!

Little need be said of the minor or subordinate remedies, as blisters, sinapisms, &c. Their operation is evidently to restore the balance of the circulation and excitability by soliciting artificial determinations to superficial parts, with the view of relieving internal congestions or inflammations

PART II.

BRITISH HYGIENE;

OR, THE

CONSERVATION OF HEALTH, AND PROLONGATION OF LIFE.

Prestat argento, superatque fulvum
Sanitas aurum, superatque censum
Quamvis ingentem, validæque vires
Omnia prestant.

In all ages, *life* has been considered so invaluable a gift, that philosophers and physicians have endeavoured to discover the means of prolonging its range. The attempts to effect this by arcana and nostrums, beyond the ordinary boundary which nature allots to the human race, having failed, it was found that HEALTH was the grand secret for attaining old age, and hence, its preservation is one of the most interesting studies to which the mind of man can be directed.

The power of health, however, in protracting the period of our existence, is of infinitely less importance, than the influence which it exerts over our temporal happiness as a safeguard against pain. Religion and even philosophy may give us patience to bear sickness without repining; but they cannot deprive the tortured nerve of its sensibility, nor can they prevent the ruin which our families or friends may sustain from our loss.

As primitive *simplicity*, *temperance*, and *obedience to the rules of nature*, were evidently accompanied by a greater immunity from disease and premature death, than is observable in the progressive stages of civilization, philosophers and physicians have never ceased to hold *these*

forth as the only means by which we can evade the long train of morbid afflictions which a wide deviation from the path of nature had, in subsequent ages, produced. But the truth is, that time and circumstances have effected so complete a revolution in the manners and affairs of man, that we may, with equal prospect of success, attempt to arrest the tides of the ocean, as turn him from the habits in which he is now naturalized; or emancipate him from various morbific causes, which necessarily flow from the state of society in which he exists.

Will any human eloquence persuade the London alderman to change his turtle soup for the ascetic diet of the hermit, however necessary it may be for the prolongation of his life? Can any human power transfer the bloom of health from the cheek of the shepherd to that of the citizen, mechanic, or artizan, without reversing modes of life which it required ages to establish?

It is true, that a few individuals have the power, and a very few the resolution, to put in force the various *preventive* checks of disease, and thus attain a green old age; but the great mass of society must be contented to make the best compromise they can, with those evils which surround them:—in short, they must rather attempt to mitigate those ills they cannot shun, than hope entirely to prevent their occurrence.

It may be objected that, to point out the means of *counteracting* the effects of vicious propensities or indulgences, is little less than indirectly encouraging them; and that we should only pourtray the *causes*, and thus afford a warning against the consequences, leaving men to suffer for their trespasses against the laws of nature or morality. But it is probably most prudent to take the world as we find it—to leave to the divine the province of exhortation against vice or intemperance, and to the Almighty alone, the power of punishing them. In fine, I should conceive that the physician has nothing to do with what may be termed the *morality* of *diseases;* but that it is equally his duty to counteract those which are culpably induced, as to dilineate their causes. It is in this point of view that Hygiene Essays are particularly deficient, and consequently ineffective in their application.

By tracing several diseases to their sources in the first part of this Essay, a repetition of such causes of ill health is here unnecessary, though from the very nature of the sub-

ject, some little tautology will be unavoidable. I shall class my remarks under the following distinct heads, viz.

1. The air we breathe.
2. The food we eat.
3. The fluids we drink.
4. The exercise we use, active and passive.
5. The clothing we wear.
6. Ablution :—Hot and cold bathing.
7. The passions : Diseases of Literature.
8. Sleep ; Incubus, &c.
9. Medicines.

Sect. I.—AIR.

"Qualis aer, talis spiritus." *Jubertus.*

The two great causes of disease under this head, have already been amply considered, when delineating the effects of atmospherical *vicissitudes*, and atmospherical *impregnations*. It is probable that three-fourths of the disorders to which the human constitution is liable, in this climate, originate in, or are, at least, considerably influenced by, *aerial transitions;* and therefore we cannot be too much on our guard against this source of danger. Our principal defences against these atmospherical changes, so rapid and destructive in Great Britain, will be pointed out in subsequent articles, particularly in those on clothing and bathing. A few observations, however, on other points connected with air, may be properly introduced here.

If the natural state of our atmosphere be variable, and if certain parts of the surface of the earth, and even animal life itself necessarily tend to vitiate the composition of the air, our own folly, or the imperious customs of civilised life, give tenfold force to these unavoidable enemies of our health. It is not on the husbandman, the soldier, or the sailor, who are so much exposed to the conflicting elements, that their malignant influence principally falls. It is on the delicate female, the pale mechanic, and the *sedentary* artist, who add artificial to natural extremes—fly from one to the other—writhe under the effects of this imprudence—and then rail against the climate as the cause of all their miseries!

In the crowded ball room, heated to a tropical temperature, the sensitive Belle and effeminate Beau carry exercise to the extreme of exhaustion, and, in this state, rush fearlessly forth under the gloomy skies of a hyperborean night! The ghastly train of consumptions which annually follow this imprudent conduct, have no premonitory effect in preventing a repetition of it. Youth ever has been, and ever will be prodigal of life; and while the sick-bed and tomb lie masked under the seductive features of the theatre,

the ball room, and the drawing room, they will continue to be thickly tenanted by premature decay and self-destroyed beauty.

Against the effects of these noctural exposures, which society *will not* avoid, the medical philosopher can only propose such checks as a knowledge of the animal economy suggests.

There are five circumstances to be attended to when we are subjected to the influence of the night air. Viz.—1st. The condition of the body before going out of doors. 2nd. The defence of the body's surface while exposed. 3rd. The defence of the lungs. 4th. The exercise on the way. 5th. The conduct to be observed on getting home.

1st. The condition of the body ought to be as warm as possible, short of perspiration. Many lives are annually lost by the ill-judged caution of lingering about the halls and doors of heated apartments, till the body is cool, before venturing into the air. In this state, it is highly susceptible of the baleful influence of the night. It would be better to issue forth, even with some perspiration on the surface, than wait till the system is chilled. The greater degree of animal heat in which we are, on going first into the night air, the less injury will we sustain from it.

2nd. As this injury is received through the medium of the skin and the lungs, it is quite evident that the safeguard of the former is warm clothing, constructed of materials that are bad conductors of heat, as woollen, cotton, &c.

3rd. The defence of the lungs themselves has been hitherto strangely overlooked; though it requires but a moment's reflection to be convinced of the vast importance of this consideration. In the space of one minute the delicate structure of the lungs is exposed to an atmospherical transition of perhaps thirty or forty degrees—from the over heated theatre to the freezing midnight blast! Is it not strange, that we should have been so very solicitous about heaping fold over fold on the surface of the body, while we never dreamt of the extended surface of the lungs which we left completely exposed? Is it not still more strange that this should have been forgotten, when daily observation shewed that the lungs were the organs which, nine times out of ten, suffered by these exposures?

It cannot therefore be too strongly enforced, the necessity of guarding the organs of respiration from the direct influence of the night air, by such mufflings about the face,

as may not only detain a portion of the air expired from the lungs each time, but communicate a degree of warmth to each inhalation of atmospheric air. A large net, for example, such as is vulgarly called a comforter, folded loosely round the face, will receive a portion of caloric or heat from the breath at each expiration, which portion will be communicated to the current of air rushing into the lungs, at each inspiration; and thus a frigid nocturnal atmosphere is, in a considerable degree, obviated.

4th. As we proceed into the night air, while the body is warm, so we should, by a brisk pace, endeavour to keep up that degree of animal heat with which we sat out, and that determination to the surface, which is so effectual in preventing affections of any internal organ.

Lastly. As the sudden transition from a heated apartment to a frigid atmosphere must, in some degree, produce a determination to the centre, and more or less check the perspiratory process, some warm and moderately stimulating liquid should always be taken before going to bed, in order that the functions of the skin, and the balance of the circulation may be restored.

I have dwelt longer on this subject, because it is, in reality, of more importance than is commonly supposed; and because we are so familiarised to it by frequency, as to pass it almost unnoticed.

Atmospherical *transitions* being guarded against, other peculiarities of the air unfavourable to health, will be easily avoided, with the exception of *easterly* winds, which, in this island, exert so very powerful an influence on the human frame, both mental and corporeal. There certainly is something in an easterly wind, independent of its temperature, which is inimical to the free and regular performance of the animal functions, and particularly the functions of the skin; for invalids will feel its effects in rooms, where the temperature is regulated by a thermometer, nearly as much as though they were in the open air.

This observation is as old, if not older than Lemnius, who, after condemning the South and East winds, and praising the North and West, [*lib.* 1. *Hist. lib.* 1. *Cap.* 41.] says—"In a thick and cloudy air, men are tetrick, sad, "and peevish (aurâ densa ac caliginosa tetrici homines ex- "istunt et subtristes, &c.) and if the *western winds* blow, "and that there be a calm, or a fair sunshine day, there is "a kind of alacrity in men's minds; it cheers up men and

" beasts: but if it be turbulent, rough, cloudy, stormy " weather, men are sad, lumpish, and much dejected, " angry, waspish, dull, and melancholy."

Virgil seems to have had ideas of this kind in his mind, when he wrote the following passage.

> Verum, ubi tempestas, et cœli mobilis humor,
> Multavere vices, et Jupiter humidus Austris....
> Vertuntur species animorum, et pectora motus
> Concipiunt alios.

However well cleared and cultivated a country may be, yet the current of air passing over a large tract of land, is never so pure, or at least so healthy, as that which passes over the ocean. Deleterious impregnations, in a greater or less degree, must unavoidably mingle with a land wind; and when we examine the medical topography of those parts of the continent over which the easterly winds traverse, we cannot but conclude that vegeto-animal, and other terrestrial effluvia are the ingredients which give origin to the phenomena in question.

As the wind alluded to acts principally by confining the *secretions* from the skin, in the first instance, we can only obviate its effects by such means as tend to restore them—these are diluting warm drinks—the warm bath—exercise—and clothing; of which in their place.

Although the deterioration of the general atmosphere by the breathing of all living creatures, is not of a moment's consideration; yet, the effect of human respiration on those atmospheres which we inhale in our habitations, and particularly in crowded apartments, is not to be entirely overlooked. The vitiated condition of the air, in this way, is at least one of the causes of that *pallor* observable on the cheeks of people subjected to its influence. The means of obviating this source of ill health, are so obvious as to require no comment: but I may here remark, that many people have so exaggerated the consequences of breathing respired air, that in the anxiety for *ventilation*, they have subjected themselves to streams and currents of this element, of such unequal temperatures as induced *real and serious diseases*, when they strove to avoid the most trifling, if not wholly imaginary ones.

On many constitutions, and particularly on people denominated *nervous*, certain barometrical changes in the atmosphere have a remarkable effect. Thus when the glass

is very low, the wind southerly, and a storm impending, such a sense of sinking, weakness, tremor, and dejection is often felt by valetudinarians, that they are quite miserable till the equilibrium of the atmosphere is restored, when all their morbid feelings vanish "into air—thin air."

By the superficial observer, and often by medical men themselves, these ailings are laughed at as vapourish or imaginary; but they are real physical effects resulting from sudden diminution of pressure in the airy medium that surrounds us; and require rest, with some cordial drink and generous diet for their relief; for they cannot be entirely removed, till their cause ceases to operate.

Still, with every exertion and precaution, we cannot always counteract the insalutary effects of atmospherical vicissitudes—thermometrical—-hygrometrical—-and barometrical, on our constitutions. We are then forced, if our circumstances will permit, to migrate to those parts of our own or other countries, where the heavens naturally present greater uniformity. From various well known physical causes, the atmosphere of the ocean presents a superior degree of equilibrium, in these respects, to that of the earth; and consequently the *shores* of countries participate in this advantage.

Of our own island, the southern coast, has, for obvious reasons, the superiority in point of temperature, and particularly the shores of Hants and Dorset; as being equally removed from the piercing easterly winds, and rain-fraught gales from the western ocean; while a broad expanse of ocean lies in front. The ISLE OF WIGHT for instance, presents every advantage which England can afford to the pulmonary invalid, or to any one labouring under chronic disease of an internal organ.

Sect. II.—FOOD.

"Ut semel dicam, una gula est omnium
Morborum mater, etiamsi alius est genitor."
Fernel. Pathol, l. *C.* 2.

Although we agree with Celsus, that "to a person in health every kind of food is wholesome," (sanis omnia sana) yet, when we consider that in society, as it is now constituted, few individuals will be found who can be said to be in perfect health, we ought to hesitate in adopting the above as a general rule."

When the human frame is anatomically examined, and particularly the masticating and digesting organs, we shall be constrained to admit that man is naturally more of an herbivorus than a carnivorous animal; and without going so far as to adopt the Pythagorean doctrines, either of ancient or modern times, there can be little doubt that a considerable predisposition towards many of the most fatal diseases with which we are afflicted, is generated by the use or abuse of animal food. The mischief, however, lies infinitely more in the quantity than the quality of our diet. When we contemplate each varying tribe of mankind, from the turtle-eating Alderman to the earth-devouring Ottomaque, and see him subsist, exclusively or collectedly, on every thing which air, earth, or ocean can produce, with, *cæteris paribus*, an equal degree of longevity, we are irresistibly led to the conclusion that it is principally by *excess* that we convert food into poison.

Again, in the whole catalogue of human maladies, how many are brought on by deficiency in the *quantity* of food? scarcely one! While on the other hand, there is hardly a disease that is not ameliorated by diminishing the usual scale of our sustenance. Nature herself, in most instances, inculcates this important lesson. When any of the numerous tribe of acute and dangerous diseases approaches, the appetite is immediately withdrawn altogether; and, in a great proportion of the chronic ailments, it is impaired! How have we improved this hint of nature? By

not only turning a deaf ear to it, but by acting diametrically opposite to the salutary monition. No sooner does the appetite fail, than the cook, the confectioner, and chemist, are up in arms to redress this *grievous calamity*, and candles, condiments, and tonics, pave the way for bleeding, purging, and water-gruel!

> The first physicians by debauch were made,
> Excess began and still sustains the trade.

In medical affairs our attention is too often directed to *effects* instead of causes. Thus *debility* being a natural consequence of almost every derangement in the structure or function of the living machine, the object of the patient, and too often of the physician, is to remove this *symptom*, very frequently at the expense of aggravating the original cause, to the removal of which, the debility is in reality favourable. Where lesion of an organ suddenly takes place in a vigorous state of the system, we are forced to induce debility as quickly as possible; otherwise the diseased organ will be in the greatest danger. Thus it is that great strength and vigour of constitution are not only unfavourable to recovery from some diseases, but constantly predispose to them. How seldom do we hear of valetudinarians, or people who are forced on a low regimen, dying in any sudden or mysterious way? But does a week or a day pass that we do not see blazoned forth in the public prints, or circulated in private, the accounts of men cut off in the prime of life and health, with scarcely any warning—generally indeed after a hearty dinner—some vigorous exertion—or a convivial supper? From what then, can these accidents arise, but from too much blood (the natural consequence of too much food) overpowering some organ essential to life, by bursting its natural boundaries. In this way, but in a minor degree, it gives origin to a great proportion of fevers, and the immense tribe of inflammatory complaints. To the formation, too, of that proteian host of human miseries—THE NERVOUS DISEASES, this cause mainly contributes, by deranging the function or structure of the digestive organs, which are kept in perpetual irritation by flatulence and the presence of indigested remains of too much food.

But I shall not pursue this subject further, nor offer any other recommendation of abstinence than the foregoing

slight sketch of the dangers of repletion.* Man is so much the slave of his passions and appetites, that were a prophet to rise from the tomb, and warn him against indulging them, he would not be listened to; or at least his advice would not be followed! The only thing we can do, therefore, is, to point out as far as is practicable, such *antidotes* to the effects of repletion as experience can suggest, abandoning entirely the hope of weaning mankind from those habits to which they are bound by adamantine chains. In the last section of the work this subject will again be glanced at, and a principal antidote to the evils of repletion pointed out. *Vide Medicine.*

I shall conclude this section by recommending the valetudinary, (for no other will listen to advice) to study the *time* of taking food. Early breakfast—dinner as near the middle of the day as fashion, or folly, or pride will permit—a pretty hearty tea or coffee, in the evening, about six o'clock, and no supper, will be found the most salutary code which the physician can lay down.† People of weak digestion are told "*to eat little and often.*" I am very far from thinking that this is judicious advice. The stomach, and other digestive organs, require their intervals of repose, as well as the voluntary muscles; and if regular and stated periods are appointed for taking food, the appetite, by the force of habit alone, will return at these times, and digestion will follow. But if the stomach is kept constantly *nibbling* at little *tit bits*, there never will be a keen relish for food, or a powerful and easy assimilation. This advice is as old as the days of PLATERUS, at least, and, for aught I know, much older. "Assuescat bis in die cibos sumere, *certa semper hora.*"—*Observat. lib.* 1. Crato directs his patients to eat but twice a day, and that at fixed periods. He advises never to eat, even then, unless there be an appetite. How many diseases might be prevented if this advice were followed!

---

* Temperance is compared by Cicero to a bridle of gold, and he that can use it right, says he, "ego non summis viribus comparo, sed simillimum deo judico." *Orat. pro Marcello.*

† It may be remarked, however, that there are many constitutions where, even in valetudinary health, a *little* animal food for supper, both agrees well, and contributes to repose. Here the practice then is not detrimental,

Sect. III.—DRINK.

"Sævientia guttura satiare non possunt fluvia et maria."
Æneas Sylvius.

I shall not here attempt to prove that WATER is the simple and salutary beverage designed by nature for the human race. In every nation, even the most refined and modern, a great majority appear, by their practice at least, to *think* that water is only fit for beasts—thus giving the lie direct to the celebrated Greek prescription in the pump-room at Bath. They have, indeed, with no small ingenuity, contrived so to medicate the native fountain, that they are always either outstripping or lagging behind the placid stream of life! The same magic bowl which this moment

"Can pour remotest rapture on the sight,"

and raise its votaries into heroes and demi-gods, will, in a few hours, sink them beneath the level of the brute creation!

Instant her circling wand the goddess waves,
To hogs transforms them, and the sty receives;—
No more is seen the human face divine.

The moralist, the divine, and the philosopher, have long descanted on this theme, with little success! Present pleasure is, by the great mass of mankind, considered a certain good; while future sufferings are problematical events, and are therefore disregarded. Nay, where we know that a to-morrow of misery must necessarily succeed a to-night of debauch, the fear of pain is instantly absorbed in the prospect of enjoyment, and we voluntarily incur the one for the other's sake!

Of what use, after this, would it be to waste time in pourtraying the mental and corporeal ailments which flow from excess in inebriating liquors? Do not the maniac, the dropsical, the liver-grown, meet our eye in every street? Does not the groan of the suicide vibrate on every ear? Do we not see former affluence clothed in the rags of squalid poverty, in every hospital, workhouse, or charity, throughout the kingdom, or wandering, *in forma pauperis*, from door

to door? Do we not see every tie with which Nature, Religion, or affection binds us in social harmony, severed by the intoxicating bowl? Have these and a thousand other examples any operative effect in checking the evil? Little or none! "Morbos odimus et accersimus." *Card.*

Intoxication, however, is not our subject. No one will dispute the bad effects of this propensity.* But a very considerable proportion of the middling and higher classes of life, as well as of the lower, commit serious depredations on their constitutions when they believe themselves to be sober citizens, and really abhor debauch.

This is by drinking ale or other malt liquors to a degree far short of intoxication indeed, yet, from long habit, producing a train of effects that embitter the ulterior periods of existence. Corpulency, obesity, hebitude, vertigo, apoplexy, and other affections of the head, are known to result from the abundant use of malt liquors; but it is not generally suspected, that they have a peculiar tendency independently of the adulterations which too often enter into their compositions, to produce effusion of water in the cavities of the chest, and to predispose to those numerous organic affections of the heart itself, which, of late years, have forced themselves on our attention beyond any thing known in former periods.

Malt liquors assuredly give a greater degree of fulness to the blood-vessels than any other species of drink, while, in common with the latter, they paralyse the absorbent system, and render torpid many of the salutary secretions. The heart is thus called upon for unusual exertions, which eventually injure its functions or structure; while the equilibrium between exhalation and absorption on the serous membrane of the chest is deranged, and dropsical effusions in the pericardium or bags of the pleura ensue.

The beer-bibber then, has probably little reason to exult over the dram-drinker. If he escapes ascites, or dropsy of the abdomen, he runs the risk of hydrothorax, or water in the chest, a much worse disease! If he have an immunity from disorders of the *liver*, he becomes predisposed to derangements of the *heart!* If he experience not emaciation and tremors, he too often becomes overloaded with

* There are a few indeed who are very careful to commemorate the names of all those who have drunk hard and yet lived to a good round age; but make no note of those who fall early victims to intemperance. This reminds us of the sophism of Rabelais, that "Drunkenness is better for the body than physic, because there be more old drunkards than old physicians." Rabelais forgot that physicians seldom take physic.

fat, and dies apoplectic! If he be not so liable to maniacal paroxysms of fury, from the fire of ardent spirits, his intellectual faculties become sodden, as it were, and stupidity ensues!

Incidit in Scyllam cupiens vitare Charybdim.

It may be added, that deleterious as is the habit of excess in vinous, spirituous, or malt liquors, *after meals or on going to bed;* yet, there are some hopes of reformation, or, at the worst, of prolonged existence, while the *morning dram*, or other stimulating beverage is avoided. When the abominable precept of the Salernian school—

Si nocturna tibi noceat potatio vini
Matutina hora rebibas, et erit medicina,

is once adopted—farewell all hope, to health a long adieu!

It may be right to state, for the benefit of those who will not abstain from spirituous liquors, that acids correct, in a very considerable degree, their deleterious qualities. Punch is therefore far preferable to what is termed grog; and grog much less injurious than raw spirits. In what way the acid acts as a corrector of the spirit, I am unable to explain; but of the fact I am quite certain from long and attentive observation and inquiry. It is sufficiently obvious that water when mixed with the spirit, corrects its bad qualities, *first* by simple *dilution*, thereby rendering the spirit less stimulating to the digestive and biliary organs; *secondly* by increasing various secretions, particularly the urinary, whereby the blood-vessels are kept less turgid than they otherwise would be. On this account, it is probable that weak hollands or gin and water form the safest beverage where spirits must be indulged in.

Although the injurious effects of tea have been greatly exaggerated, yet when we consider how universal is this beverage, and how much reason there is to believe, from some recent disclosures, that the native plant is adulterated to a great extent with deleterious ingredients, we may fairly set it down as contributing, in no mean degree, to those derangements of the digestive organs and nervous system, which now meet our eye at every step. This is one of the penalties (and no trifling one it is) which we incur from civilization and refinement. Our food and drink have become so complicated in their forms, that thousands—perhaps millions make a livelihood by systematically poisoning us!

Sect. IV.—EXERCISE.

Physicians and philosophers, in every age, have extolled exercise as the grand prophylactic in guarding against the accession of all diseases. That man was designed for exertion cannot be doubted; but that much injury is every day done by invalids, and those confined to sedentary occupations, attempting to *strengthen* their constitutions by strenuous exercise, at intervals, I am well convinced. Violent exercise did great harm, even when nations were nearer a state of nature than they now are. Galen, in his discourse to Thrasibulus, inveighs against the athletic practices of the Gymnasium. A smart walk of a mile is, to a valetudinarian, what a furious wrestle would be to an athleta. If we trace those dreadful aneurismal affections of the heart and arteries in early life, we shall find their origins in violent exercise, or sudden over-exertion, in nine cases out of ten, where age and ossification are not concerned. In the long catalogue, therefore of nervous diseases, where there is any suspicion of functional or organic lesions, indicated by palpitations, shortness of breath, and flushings of the face, let long continued or strenuous exercise be dreaded. The passive exercise of a vessel or carriage is safe; but quick walking is extremely prejudicial. Because we see the laborious classes of society robust, having been inured to labour by long habit, we are not to expect that we can exchange debility for vigour, by imitating their manners, in the middle, or latter periods of life.

It is with exercise indeed, as with food and drink. By long habit we may become gluttons and drunkards, apparently with impunity; and so, by early and long continued habit, we may become capable of walking a thousand miles in as many successive hours, or of labouring hard, sixteen or eighteen hours out of the twenty-four. But although no organ or part gives out at the time, we are inevitably laying the foundation for future diseases in all three instances. If habit then cannot secure us from the injurious effects of *inordinate exercise*, how can we expect to escape when we fly to it, or indulge in it, at irregular periods? I shall exemplify this reasoning by an instructive lesson. During the late war, it was observed that

in its earlier periods, fever, fluxes, and scurvy made the greatest havoc; while in its middle and ulterior periods, these diseases almost disappeared, and pneumonia, with its too frequent consequences, PHTHISIS, became infinitely more prevalent and fatal.* The facts were apparent to all; but the causes few could divine. Some of our chemical wiseacres attributed the pneumonic diathesis to the lime-juice served out; but this hypothesis need not detain us, for I think a more rational explanation can be offered. As the period of warfare was lengthened out, discipline gradually became more perfect, and, at length, attained its acme.—Every evolution was now performed with a rapidity and precision that seemed the effect almost of magic. All machinery and apparatus were not only so arranged as to give human power its greatest force and facility of application, but human strength was put to its ultimatum of exertion, and every muscular fibre of the frame called into furious action, during each manœuvre of navigation or war. Thus, in exercising great guns, the heaviest pieces of artillery were made to fly out and in, or wheel round with almost the celerity of a musket in the hands of a fugle-man. The most ponderous anchors were torn from their beds with astonishing velocity; while the men were often seen lying about the decks, breathless and exhausted, after such ultra-human exertions!

But reefing and furling sails were still worse. Here, as in all other operations, there was a constant struggle against *time*. The instant that the word "*Aloft*" was given, the men flew up the shrouds with such agility, that, by the time they were on the yards, the respirations were nearer fifty than fifteen in a minute! In this state of anhelation, they bent across the yards, and exerted every atom of muscular energy in dragging up the sails, and securing the reef-lines, while the thorax was strained and compressed against the unyielding wood! What were the consequences? The air-cells were frequently torn; blood extravasated; and the origins of cough and hæmoptoes continually laid. The lungs were now in a proper state for receiving the impression of ærial vicissitudes; and constant exposure to the night air, to rain, and every inclemency of the season, soon evolved the long black catalogue of Pulmonic and Phthisical maladies, which swept off our men

* I here allude *principally* to the Channel and North-sea fleets.

in vast numbers to the no small surprise of the officers, who could not divine the cause of this new and destructive enemy.

But it was not the lungs alone that suffered here. The central organ of the circulation bore a part of the onus, and a host of anomalous and otherwise inexplicable symptoms were produced, which completely puzzled the naval medical practitioner, who rarely suspected any lesion of the heart. These last affections both aggravated, and were in their turn aggravated by, the depressing passions engendered during the long confinement on shipboard and separation from friends and native home. Hence, our gallant tars began to droop both in body and mind, in the last years of the war, when the stimulus of an enemy in view was seldom applied.

I hope this digression, if it deserve that name, will be excused, as it may serve to practically illustrate the effects of inordinate exercise better than many pages of reasoning. In fine, moderate and slow exercise in the open air is extremely salutary; but where it is carried to the length of much accelerating the velocity of the circulation, it endangers derangement of the heart, lungs, brain, or any weakened viscus, in valetudinary constitutions. In the healthy and robust, active exercise may be indulged in to a considerable extent, though even here it has its limits.

In my own person, I had, not long ago, a very severe and alarming instance of the bad effects of too great muscular action, occasioned by a habit of walking very fast.

After a day and a night of unusual fatigue, and rapid pedestrian exercise, together with considerable mental anxiety, I was suddenly seized with an intermission of the pulse, at irregular periods. During each intermission, I felt the heart give a kind of struggle, as it were, and strike with great violence against the ribs, accompanied by a peculiar and most distressing sensation in the cardiac region, which I cannot describe. The irritability of the heart soon became so great, that walking half a dozen yards, or going up a flight of stairs, brought on palpitation, and such a rapid and irregular motion of the heart, that the pulse could hardly be counted, and at these times the intermissions would be as often as every second, third, or fourth stroke.

These phenomena, somewhat alarmed me, and the more I dwelt upon the subject, the more aggravated became the

symptoms, till at length I could not walk at all, nor could I lie on either side in bed, without great uneasiness and palpitation.

This extreme debility and irritability of the heart continued, with little abatement, for eight weeks, during which time, I used horse exercise, and kept, when at home, in the horizontal position. At length the heart gradually lost its morbid irritability; and at the end of fourteen or fifteen weeks, I could walk nearly as well as ever. But occasional intermissions of the pulse took place, for some time, especially when flatulence prevailed in the stomach or colon; or when anxiety of mind was present. Many other curious and interesting phenomena attended this complaint, the particulars of which I shall probably lay before the medical reader, at a future period.

Now, if the mere exertion of inordinate walking, with mental emotion, could induce such derangement of action in the circulating organ, what must be the consequence of violent, interrupted, and straining exercise, on the heart, and vascular system in general, when alternated with sedentary habits and mental anxiety?

There is not a year that *cricket matches* do not lay the foundation for aneurisms, and diseases of the heart. It is on this principle, also, that *hard labour* is said by the vulgar, and most truly too, "to wear a person out." Blacksmiths, Porters, and all those who are accustomed to inordinate muscular exertion, or in the habit of lifting heavy burthens are particularly liable to diseases of the heart and arteries, that shorten their lives. Even that noble animal, the horse, is very subject to disease of the heart, in consequence of his spirited muscular exertions in the chase, in drawing heavy loads, and in racing.

As for ruptures and other consequences of violent exercise, straining, &c. they are too familiar to require animadversion here; but I trust that enough has been said to excite the attention both of patient and practitioner to this important subject. I wish it, however, to be distinctly understood that the foregoing observations are only applicable to *inordinate* corporeal exercise, especially when attempted by the valetudinarian, or those usually employed in sedentary occupations. *Moderate* or even pretty free pedestrian exercise is, in general, extremely salutary, and is probably the most *natural*, were we in a *state of nature*;

but, in proportion as we recede from this state, by advancing civilization, and particularly as we congregate in large cities, where every thing around us, almost to the air we breathe, is artificial, our muscles lose their tone, and incapacitate us for those athletic exercises so praised by the ancients. Fortunately there is another species of exercise within the reach of the upper classes of society, to whom it is most necessary, and which has not been duly appreciated by the profession, but to which we shall now endeavour to draw the attention both of patient and practitioner.

Subsect. 1.—GESTATION, OR PASSIVE EXERCISE.

As this is a subject of the greatest importance, and at the same time, so little treated of, I had almost said so little understood, I shall here enter into a pretty full investigation of it; convinced that it is one of the most powerful remedies, as well as preventives of disease, which the inhabitants of these isles, and especially of this luxurious Metropolis, possess. It is also, of all other remedial measures, the most agreeable.

The immediate effect of Gestation (horse, carriage, or swing exercise, sailing, &c.*) is to excite an occult, but a real movement in the fibrous structure of the various organs. The living tissues of which they are composed, become more firm, more strong—in short, acquire an augmentation of tone; while their functions are performed with greater freedom, and with greater facility. This is more particularly remarkable, where a debility or relaxation in those organs or functions had preceded, as was observed by the ancients. "*Omnis gestatio potest habitum corporis firmare, et actiones stupidas excitare.*"—ORIBASIUS.

1. *Effects of Gestation on Digestion.*—During gestation, for instance on horseback, the stomach, liver, intestines—indeed the whole digestive apparatus experience a succession of shocks, which develope the tonicity of these organs, and favour the exercise of their functions. If the stomach be empty, gestation awakens the digestive powers—whets the appetite—induces hunger:—if that organ be moderately filled with food, the whole chylopoietic system, enlivened by gestation, executes, with greater facility, promptitude, and perfection the elaboration of nutritive matter, and the whole fabric receives, in consequence, an accession of strength. Hence people afflicted with anorexia, or difficulty of digestion, experience the most marked benefit from *passive* exercise, especially if used *before* the hour of repast. When used by *them* after meals, it must be moderate in degree, and gentle in manner. Thus we every day see invalids to whom digestion is a painful process, escape the feelings of satiety by a gentle ride on horseback, or in a

* On no subjects are medical men more frequently consulted than on these on few are they so little prepared to give a decided answer.

carriage after dinner. In this respect muscular, or *active* exercise differs essentially from gestation. To run, to dance, to play at cricket immediately after eating is to assail the stomach with violent succussions which derange the natural order of its movements, and dissipate on the *voluntary muscles* those vital forces and energies which ought to be concentrated on the organs of nutrition.

But it is not on the process of digestion alone that gestation exerts a beneficial influence. It enlivens the whole abdominal circulation of blood, but particularly that of the various branches of the vena portarum. It thus affects the hepatic system, facilitating both the secretion of the bile, and its elimination from the ducts of the liver into the duodenum. It increases the peristaltic motion of the intestines; in consequence of which, the chyme is presented with greater regularity and rapidity to the mouths of the lacteals, and the chyle is poured, in a freer current, into the blood-vessel system.

2. *On the general Circulation.*—Gestation has a remarkable effect on this important branch of the animal economy. It equalizes the balance of the circulation—renders the pulse slower, more full, and nearer its usual rythm. This, Dr. Currie experienced always, when using horse exercise at a time that he was threatened with phthisis. Dr. Smyth felt the same effects in his own person, while using the swing. Hence many people, in whom an excessive irritability of the heart, and a universal debility of the nervous system obtained, have experienced the greatest benefit from gentle horse or carriage exercise. Palpitations of the heart and intermissions or other irregularities of the pulse have disappeared under its influence; and many diseases of a supposed organic or incurable nature have thus been happily removed.

3. *On the Respiration.*—As we have shewn that Gestation moderates the velocity of the pulse and equalizes the volume of blood, it follows that during its use less blood passes through the pulmonary system, than while the body is even quiescent; and *infinitely less* than during spontaneous or active exertion, when the blood is rapidly hurried through the delicate texture of the lungs. Hence Gestation is the exercise that is to be preferred in almost all disorders of the pulmonary system, as asthma, consumption, habitual difficulty of breathing, and many of those organic affections of the heart, where the lungs participate from contiguity, or obstructed circulation.

4. *On Absorption.*—Every kind of Gestation appears to augment, or at least maintain the energy of the absorbent vessels throughout the whole system. That the action of the lymphatics spread over the internal surface of the intestinal canal, is quickened by this kind of exercise may be inferred from the fact, that those who are much on horse back have the fecal discharges of a drier and harder nature, and of a smaller volume than those who are not accustomed to this species of Gestation. Absorption from the cellular tissues is also stimulated by the succussions of Gestation; and we frequently see dropsical swellings of the lower extremities, and various other cellular infiltrations speedily dispersed by riding on horseback, or in a carriage.

5. *On the Secretions and Exhalations.*—It is a remarkable, but a certain fact that horse or carriage exercise restrains *inordinate*, and increases *torpid* secretion and exhalation; thus, in different circumstances producing opposite effects. In restraining inordinate discharges, however, Gestation does not check them insalutarily; nor, in rousing torpid organs to increased action, does it stimulate them too much—in short, it raises them or lowers them to a healthy equilibrium, and that in a milder and safer manner than any other remedy. "Secretiones aut non adaugentur, aut secundum Naturæ ordinem tantummodo intenduntur."—*Lorry.*

6. *On Nutrition.*—Gestation is remarkably favourable to this process of the animal economy; and especially to *sanguification* [blood making]. This is proved by reference to those who ride much on horseback or in carriages. Their constitutions uniformly tend to the sanguine—their complexions are florid—they become subject to active hæmorrhages—to inflammatory complaints—to plethora—and to robustness.*

7. *On the Sensations.*—Horse and carriage exercise has great influence on the nervous system. It gives what is not inaptly termed *tone* to the *nerves*; corrects their too great irritability and obviates spasmodic affections. When we recollect the effects of Gestation on the *sanguiferous* system, and bear in mind the intimate connexion which subsists between that and the *nervous* system, we cannot wonder at the salutary results of Gestation in equalizing the balance of *excitability* as well as of the circulation. It is partly in this way we can explain the increased energy of the

* We may be convinced of this by a glance at stage-coach drivers, for example.

intellectual functions which uniformly follows Gestation; and partly by considering the *moral* effects of horse and carriage exercise in the open air. For example, we every day see people who, tormented by real or imaginary pains and ailments, experience, at the sight of the country, a considerable mitigation of their complaints. The pure air which they inspire—the diversified scenes of nature which are presented to their view, conspire, with the mechanical agitation of the journey, to dissipate melancholy emotions, and restore the various functions to a healthy equilibrium of action.

8. *Gestation as a preventive of disease.*—It is well known how much passive exercise tends to develope the organs during infancy, when spontaneous movements are on a *small scale* Hence an essential item of good nursing consists in carrying the child about, and swinging it up and down in the nurse's arms. In proportion to this kind of exercise we observe the fresh colour, agility, and liveliness of the infant, forming a striking contrast with the pallid complexion, laxity of fibre, dulness, and stupidity of the child which is kept as much as possible in a state of quiescence. On this account, the use of the cradle, if not abused, is, upon the whole, preferable to the modern custom of causing children to sleep in beds.

In *youth*, muscular or active exercise appears to be more salutary than Gestation. At this period, the muscles of locomotion are endued with an excess of vitality which requires constant dissipation. The dance, the course, all those juvenile amusements which demand considerable exertion, are then keenly relished, and sufficiently indicate the path of nature which ought to be pursued.

In *adult age*, we shall find it wise to combine Gestation with active exercise. At this epoch of our existence, a kind of *plethora* begins to take place in the *abdominal circulation*, with irregularity of action in the functions of the digestive organs. Now, horse and carriage exercise counteracts, in a very great degree, this plethora, and restores the functions of digestion to their pristine integrity; but as the same remedy also increases the procees of making blood, we must be on our guard against this effect; and endeavour to obviate it by abstemious diet, opening medicine, and occasional local or general bleedings.

If Gestation be necessary in infancy for the developement of the different organs, it is equally so in *old age*, for sus-

taining their vital and organic powers, and warding off decrepitude. The muscles of the aged are not adapted for active exercise; and if inactivity be indulged, then the digestive functions will fail, with a long train of concomitant evils. Gestation offers the best resource.

Passive exercise, however, has its limits, and there are many cases in which it might probably prove injurious. For example, the sanguine, and, in some instances, the bilious constitution is not likely to derive the same benefit from Gestation as the nervous. A disposition to corpulency—to plethora, and to excessive secretion of bile must be obviated rather by *active* exercise—temperance—and open bowels, than Gestation. *Cæteris paribus*, passive exercise is more adapted and more beneficial to the female than to the male sex. The situations where passive exercise is enjoyed, should also be attended to. The open country is to be preferred, because a pure air, even the light itself has considerable influence in augmenting the salutary effects of exercise.

9. *Gestation, as a curative process.*—However problematical might be the effects of Gestation on purely inflammatory or bilious fevers, there is incontestible evidence that a variety of the low, nervous, and malignant fevers have been bettered during transportation, *in the open air*, from place to place. In *intermittents* of long standing, horse exercise has proved extremely salutary. In *convalescence* from all fevers, passive exercise has a remarkably beneficial effect in restoring the functions of the various secreting and assimilating organs to a state of pristine integrity. Of this the ancients were well aware. "*Gestatio longis et jam* "*inclinatis morbis aptissima est; utilisque est et his cor-* "*poribus, quæ jam ex toto febre carent, sed adhuc ex-* "*erceri per se non possunt.*" Celsus.

Much advantage may be derived from *Gestation* in several of the *Phlegmasiæ*, particularly in those *chronic* inflammations of mucous membranes, accompanied by considerable secretions of thin mucus, from relaxation of the said tissues. The succussions of horse or carriage exercise have a remarkable effect in restoring the tone of these membranes, and in dissipating those sanguineous congestions which have their seat there. Carriage exercise is very useful in chronic diarrhœa, as was observed by Celsus. The same may be remarked of chronic catarrh. Indeed a great number of pulmonic and stomach affections yield unequivocally to gestation.

On the other hand, passive exercise is *injurious* in chronic inflammations of serous tissues, or of the parenchymatous structures—for instance, in Phrenitis, peritoneal or pulmonic inflammation, &c. whether acute or chronic. The shocks of gestation keep up irritation and increase the inflammatory action going on in these organs and tissues. Horse exercise has been highly extolled, and unconditionally condemned in pulmonary consumption. It is probable that in the *former* case, *chronic catarrh* has been mistaken for Phthisis—in the *latter* that it has been mistaken for chronic inflammation of the lungs. In genuine phthisis it is moderately serviceable. In the intervals of gout and rheumatism gestation is proper.

In *active* hæmorrhages gestation is of doubtful efficacy, because it powerfully promotes the process of sanguification—but in passive hæmorrhages, it is eminently useful, as promoting a more even balance in the circulation, and giving tone to the weakened tissues from whence the hæmorrhage proceeds. In *profuse menstruation*, we have frequently seen carriage exercise put an immediate stop to the discharge, when every thing else failed. On the other hand, the same kind of gestation will prove extremely useful in bringing on the *menstrual* flux when deficient.

But it is in the class of *nervous diseases*, that gestation evinces the most powerful and salutary effects. Hypochondriasis, melancholy, *nervous palpitations of the heart*, spasms of various muscles and muscular structures, will find, in horse and carriage exercise, the most certain remedy. In all these, there is a considerable derangement in the circulation and excitability, with consequent irregularity of function in various organs, for which gestation offers the surest relief, Finally I may add, from personal experience, that no remedy is equal to horse exercise in that painful and distressing complaint, the piles. The portal circulation is so completely enlivened by the succussions of equitation, that the hæmorrhoidal vessels are enabled to disgorge their load of blood, and the celluar tumours soon disappear in consequence.

Sect. V.—CLOTHING.

If the ancient Romans knew not the luxury of a linen shirt, and were not overnice in frequently changing their greasy flannels, yet their dress was probably much more conducive to health than ours. It were devoutly to be wished that silk was now worth its weight in gold, as formerly; for scrofula and phthisis would assuredly be then checked in their ravages. The necessity of defending the body from sudden atmospherical transitions has been so frequently enforced in various parts of this Essay, that the present section has been greatly anticipated.

It is not, however, so much from *lightness* of dress that we suffer, as from *inequality* of clothing. When the Indian was asked how he could bear to go naked beneath the rigorous skies of Canada, he replied that he was "*all face;*" and although I am not quite so great an admirer of nature as to think we ought to imitate the original pair of Eden; yet I am fully persuaded that we accustom ourselves, upon the whole, to a superabundance of clothes; and that were we to wear a lighter dress in winter and a heavier one in summer than we now do, that is, *a more uniform system of garment throughout the year*, we would lose, in a great degree, that keen susceptibility to aerial impressions, for which we are remarkable, and which occasions such a waste of life in this country. The same remark is still more applicable to the daily changes of dress; for here, indeed, is the great source of evil. Among the fair sex, in particular, and also among the fashionable and effeminate of the other sex, we observe a warmer dress worn in the morning and mid-day, when exercise is taken, and when the sun is above the horizon, than in the evenings, when the frame is languid, and the air damp and cold. If to this we add the rapid transitions from heated and crowded assemblies of all kinds, to the midnight skies, often amid rain or snow, we shall have abundant cause for the havoc which pulmonic complaints occasion among the upper classes of society. These dangers, into which the affluent voluntarily run, bring them on a par with the indigent, who are exposed to others from necessity.

It would be still worse with the upper classes of society, were it not for the very salutary effects of *frequent change of linen*, which, though indulged in for the sake of comfort or luxury, has a most astonishing influence on health. In this variable climate the functions of the skin are generally *below* par, and irregular; frequent change of linen excites the perspiratory process in a very strong degree, and therefore improves the cutaneous function.

The laws of dress then being so completely under the empire of FASHION, I shall not waste time in useless admonitions on the dangers and extravagances into which the votaries of this tyrant are led. I would only recommend that linen be preferred to silk, cotton to both, and woollen to all. That a lighter, *but more uniform* species of clothing be early introduced and steadily persevered in, by which a *habit* of bearing with impunity the transitions of the atmosphere will be gradually and cautiously acquired.* The invalid, however, who has any weak organ, will pause ere he attempts to attain this hardihood of constitution, which should have been slowly acquired from early youth; yet even here, much may be done by gradual and judicious exposure.

---

* Let me not be misunderstood. I should be far from sanctioning, much less recommending that *semi-nudity* of attire which has been said to distinguish the *present race* for two or three hundred years past. I again reiterate that it is against the practice of enveloping ourselves in seven-fold shields of woollen at one period of the day, month, or year, and exposing the naked pores to the "*pelting* of the pitiless storm," at other periods of the day, month, or year, which I protest; and that too among the weakest and most delicate portion of society, enervated by excessive refinement, civilization, and sedentary avocations.

Sect. VI.—ABLUTIONS.

By these I do not mean simple cleanliness—a virtue for which the English are conspicuous above all other nations; but I could wish to draw the attention both of physician and patient to the warm and cold bath, particularly the former, a mean of preserving health and removing disease, which is far less cultivated in this climate than it deserves to be. It seems strange that the general and salutary use of the warm and cold bath should be now confined to Asia, and the Russian and Hungarian parts of Europe, while the more enlightened nations of the latter have only recourse to them occasionally by the advice of their physicians. This is more to be wondered at, since the bath is proverbially one of the greater luxuries of life.

Sed vitam faciunt, balnea, &c.

The stupendous and beautiful baths of the ancients lie in ruins, and the ocean, lakes, and rivers now supply their place amongst us, as they did in the days of Homer, among them. In the eastern world, however, and in the Russian and Hungarian dominions, the importance of bathing is acknowledged, and the practice is general.

It is a mistake to suppose that it is only in a hot climate, where the perspiration is abundant, that the cleanliness of ablutions is necessary. In the wilds of Russia the peasant stews himself in hot vapour and then rolls himself in the snow. By early inuring himself to these transitions, he preserves health to a very old age, and seldom requires medicine.

When we reflect on the functions of the skin, and the sympathetic influence which they exert on the various functions of internal organs, as traced through the whole of this Essay, we shall be constrained to admit that of all preventive and curative means, bathing holds the foremost rank. Indeed it is inexplicable, the apathy which European nations, but especially the English, evince on this most interesting point; though I would fain hope that the views of health and disease which I have here laid open to the general reader, will lead to a more extended use of this powerful means of prolonging life and preserving health.

Subsect. 1.—COLD BATH.

If a person immerge into water at a temperature of 48° or 50°, the whole system receives a shock, and the blood is rapidly expelled from the capillaries of the surface, and driven upon the interior trunks, whose elasticity enables them to accommodate themselves to this sudden change of balance in the circulation.

Reaction next succeeds, more or less quickly according to the strength of the constitution. The contractile power of the heart and arteries soon overcomes the collapse of the capillaries, and there is a rush of blood to, and a glow of heat over the surface of the body. This oscillation, produced partly by art and partly by nature, is extremely salutary, under ordinary circumstances, and conducted in a proper manner. The previously torpid capillary and perspiratory vessels of the skin are thus roused, as it were, and distended by the new impulse *ab interno*, and the whole excretory apparatus is put in motion. But this is not all; the various glandular organs of the body sympathise with the skin; a new stimulus is given to their functions; and the whole system experiences a kind of renovation, evinced by the lightness, flow of spirits, and pleasant sensations which succeed the cold bath.

This reaction or glow is the criterion of salubrity in the practice of bathing, and the sooner it takes place after the immersion, the better. I say *after* immersion, for in very vigorous constitutions it commences before the person leaves the water. In proportion as the constitution is weak, or the action of the heart and arteries enfeebled, the access of the reaction will be later and later; and in some, it will not come on at all, when the bath is highly dangerous.

We may thus gain an insight into the diseases for which the cold bath offers advantages; and also those where it will, in all probability, disagree.

An erroneous opinion that the cold bath braced, and the warm bath relaxed, has led thousands labouring under symptoms of *debility* to use the former, with direct detriment to their constitutions. A very considerable proportion of those complaints characterized by *debility* are dependent on organic or functional derangements of the *heart*; andin

these the shock of the cold bath, the sudden afflux of blood from the surface to the centre, and even the effort at reaction, are highly deleterious, often very dangerous. Again, obstructions, or infarctions of the liver, spleen, or any of the glandular organs offer insuperable bars to the cold bath. Hence we see, how accurately should the seat and cause of a patient's disease be investigated and ascertained, before we thoughtlessly, as is too often the case, recommend the trial of sea bathing, when we are tired and foiled in the exhibition of other remedies. The chest and abdomen should be minutely examined, by percussion and compression; the phenomena of the circulation, respiration, biliary secretion, &c. carefully scrutinized, before we venture to prescribe a measure on which so much of the patient's health—nay life, may depend!

Where none of these objections exist, then a cautious experiment of the cold bath may be made; beginning with the tepid, and lowering the temperature gradually to the level of nature. The salt water bath is always preferable to the fresh. This seems, in some measure to depend on the excitement of the salt on the skin, and the consequent determination of blood to the surface.

But the utility of cold bathing as a *remedy* sinks into comparative insignificance, when contrasted with its importance as a *preventive* of disease, and as a temperer of the constitution when early begun, and long persevered in. Infants bear cold water better than adults; and if the cold *affusion* even, where the bath is inconvenient, were steadily pursued, the constitution would be habitually inured to those aerial vicissitudes, and accidental exposures, which in the varied scenes of life, so often destroy health and happiness afterwards.

It is almost superfluous now to observe that a moderate degree of warmth, from exercise, is salutary before plunging into the water; and that the dip should be of short duration. Indeed much harm is daily done by continuing in the water too long, and that very reaction of the system, which is the sole object of the bath, is thereby frequently prevented. The middle of the day is, in general, to be preferred, and gentle exercise used after the bath.

The shower bath, so easily constructed in private houses, would be a valuable apparatus to the Nursery, whereby a hardy race of children would be sent forth to meet the aerial vicissitudes of our climate.

Subsect. 2.—WARM BATH.

As the first instance of cold bathing, *as a remedy*, was that of Melampus bathing the daughter of the king of Argos; so Medea's cauldron is supposed to be the first record of the warm bath. From the derivation of the word (care-destroyer) and the fabulous stories of old age restored to youth by the effects of Medea's boiler, we may suppose that the warm bath was highly appreciated in ancient times.

It is still so in the eastern world, from the Equator to the Pole; and the very circumstance of its being considered so refreshing a cordial in hot climates, is a sufficient answer to the popular, but erroneous opinion of its *debilitating* effects. It is true, that the effeminate Romans carried this luxury to such a pitch of vicious extravagance, as to bring on it the title of one of the three great destroyers of human life; but this only proves its abuse, without at all militating against its salutary operation, when used in moderation. Indeed if the general use of the warm bath should ever become prevalent in this country, it will probably produce a more beneficial revolution on the health and longevity of the inhabitants, than any change which the hand of time has ever wrought. So far from weakening or enervating the constitution, it has a decidedly contrary effect; and therefore in *debilitated* subjects, it is infinitely more proper and safe than the cold bath. We have seen that the paramount good effects of the latter result from the reaction of the system. Now this reaction is entirely an effort of the constitution itself to resist, as it were, or undo what the cold immersion had produced. Here a considerable degree of vital energy is necessary, otherwise, some internal viscus may suffer. But the warm bath, say at 96°, elicits the blood to the surface of the body, with hardly any of that reaction observed after the cold bath. The whole cutaneous system of vessels is thus filled with blood, while the vessels of the interior organs are relieved, and that without any particular exertion of the heart which might render it liable to subsequent exhaustion. This accident we frequently see follow the cold bath, where the dip has been too short, and the reaction smart. The patient falls back after the glow into a chilly state, during the remainder of the day—an indication of weakness in the circulating organs.

On the other hand, where a patient is immersed for ten, fifteen, or twenty minutes in the warm bath, at 96°, the spirits are raised, the pulse mended, and the appetite increased; in short, a general renovation is felt throughout the whole frame. This is more particularly observed after exhaustion from fatigue; and the oriental nations have long known how to appreciate its virtues in this respect. Homer describes Ulysses among others, as refreshing himself with the warm bath, on his return home after all his toils and dangers. The diseases for which the warm bath may be employed, are much more numerous than those where the cold bath can be exhibited with safety. Atonic gout, indolent swellings of the joints or lymphatic glands, paralysis, scrofula, chlorosis, almost the whole class of cutaneous diseases and defœdations, incipient phthisis, chronic obstructions of the liver, and other abdominal viscera, chronic rheumatism, old syphilitic and syphiloid diseases, nephritic and calculous disorders, colic, enteritis, [particularly when the vascular action is reduced, and obstipation is violent] and a multitude of other "ills which flesh is heir to," are removed or mitigated by this sovereign and potent medicinal agent.*

Where perspiration is required, the evening is the proper time for warm bathing, the patient going to bed immediately after. Where this is not necessary, the forenoon is the best period, and gentle exercise should succeed the bath, to prevent any collapse of the system, which, in very weak constitutions, may occasionally follow the determination to the surface.

---

* No family indeed ought to be without a slipper bath. In the various diseases of children the warm bath is often our principal, or only remedy; and in many of those spasmodic seizures which so rapidly snap the thread of life, in all ages, the warm bath is our surest refuge. In disorders of internal organs, however, the chest, abdomen, and the whole circulating apparatus should be carefully examined by a competent judge, before the bath is ventured on. How often is it inconsiderately prescribed by the routinist, without any examination of this kind, but merely after a few common place questions!

THE PASSIONS.

Without, for a moment, giving countenance to the absurd, the degrading doctrine of materialism, yet, we are constrained to acknowledge that a most intimate connexion or mutual dependence exists between mind and matter, which nothing but the mortal pang can dissolve. It is not our place to trace the effects of corporeal derangement on the constitution of the mind, or the faculties of the soul. They are the subjects of daily and melancholy observation. But the play of the *passions* on the functions and structure of the body, has not been duly appreciated, in this country at least.

In the passions I, of course, include the whole range of mental emotions, from the most placid meditation up to a paroxysm of rage on one hand, or down to an abyss of despair on the other.

These have been quaintly, but not inaptly termed by Piccolomineus the "*fulmina perturbationum*," and by Burton "the thunder and lightning of perturbation, which "causeth such violent and speedy alterations in this our "microcosm and many times subverts the good estate and "temperature of it."—These various emotions are to the mind, what the various species of food and drink are to the body. They stimulate, they depress, they tranquillize, and they ruffle the soul; but what is more to our purpose, they produce the same effects on the body. Examples of this are every moment before our eyes. The vascular and nervous systems are perpetually under the influence of the mental emotions. What palpitations and tremors are every morning excited by the postman's rap, when we are in anxious expectation of intelligence from absent friends? How often are we hardly able to break the seal of important letters? The effects of the mind on the circulation of the blood were early observed; instance the detection of Antiochus's passion for Stratonica, by the pulse. But it is not on the heart and large vessels only that mental emotions operate: the minutest capillaries feel their influence. Let the idea of *shame* cross the imagination of sensibility, and instantaneously the capillaries of the cheek are gorged

with blood! Let the emotion be changed to *fear*; quickly the lily usurps the rose, and the vessels of the face are blanched and bloodless!

Certain passions of the mind can invariably cause an accumulation of blood in certain parts, and those parts *only* of the body, whenever they are excited. Other passions, as anger, can rouse the organs of the circulation into such preternatural action as to overcome lameness, and other decrepitudes—nay, for a time, to ward off the icy hand of death itself. Thus Muley Moluc, though lying on the bed of death, worn out by an incurable disease, and not expected to live an hour, started from his litter, during the important crisis of a battle between his troops and the Portuguese; rallied his army; led them to victory; and instantly afterwards sunk exhausted, and expired.

Terror and alarm have frequently the same stimulant effect; and numerous instances are on record of their removing obstinate diseases: thus Hildanus relates that a man disguised as a spectre seized another suffering under a paroxysm of gout; dragged him down stairs, with the gouty feet trailing along the ground; and left him on the cold earth. The gouty patient finding himself deserted by the supposed ghost, started on his legs, and sprang up stairs with infinite agility; and from that moment never afterwards felt a symptom of gout. On the other hand, terror has often produced such a sedative effect, as to arrest, at once, the circulation of the blood, and cause instant death. "A jew in France," says Ludovicus Vives (lib. 3. de anima) "came by chance over a dangerous passage or plank, that lay over a brook, in the dark without harm:—the next day, on viewing the perilous situation he had been in, he fell down dead!"

But the corporeal effects of mental impressions are not confined to these violent emotions or passions. The *imagination* alone, is capable of producing equally wonderful phenomena in the material fabric. The animal magnetism of Mesmer, and the metallic tractors of Perkins, though mummeries and impositions in themselves, effected real cures, and induced many of those extraordinary sensations described by the patients and dupes. Thus an eminent physician at Paris pretending to a lady that he was an adept in the art, made so evident an impression on her by the preparatory solemnity of voice and gesture, that, by the time he carried his hand to the region of the heart, he felt

that organ palpitating violently. Oppression and tightness of the chest followed; the muscles of the face became convulsively twitched; her eyes rolled; syncope supervened; and the contents of the stomach and bowels were evacuated!

It is an inexplicable fact, that our attention being strongly directed to any particular part of the body, will frequently cause what is called a determination of blood to that part, with various unaccountable feelings there. It is by the knowledge of this fact that we have a clue to the cures of Mesmer and Perkins. Thus Dr. Haygarth in Bath, and Mr. Smith in Bristol, having formed *mock* tractors and applied them with all due form and solemnity to patients labouring under chronic rheumatism, were assured by them that the greatest relief was obtained by drawing the painted pieces of wood over the affected limbs. It is in this manner that amulets, incantations, and charms have indubitably produced, in the times of ignorance and superstition, many of the now almost incredible effects recorded of them. They have lost their power by the diffusion of knowledge; but the principle is still in action, though under different forms. Thus during the siege of Breda, in 1625, when the garrison was on the point of surrendering to the enemy, from the ravages of scurvy, a few phials of sham medicine were conveyed into the fortress by the Prince of Orange's orders, and distributed among the scorbutics in doses of a few drops, as the most valuable and infallible specific. The consequences were, that the mental energy inspired by confidence in the medicine, worked miracles. "Such as had not moved their limbs for a month before, were seen walking in the streets sound, straight, and whole. Many who declared they had been rendered worse by all former remedies, recovered in a few days to their inexpressible joy." *F. V. Mye de morbis et symptomatis, &c.*

But the influence of imagination, through the medium of certain passions, as faith, hope, &c. over human infirmities, is probably wider and greater at this day, than in the darkest ages of ignorance. With the progress of medical science, its *real* cultivators have multiplied to a vast extent, and *soi-disant* professors have exceeded all calculation and belief. In the former class, when merit, chance, good fortune, or other circumstance establishes a reputation for *superior* skill, the efficacy of the prescription is infinitely enhanced by the patient's confidence in its power: and thus one physician will cure a disease with precisely the

same remedy which entirely failed in the hands of his less celebrated cotemporary. "Plures sanat, in quem plures confidunt." *Cardan de sapientia.* Hippocrates makes the same remark; and Avicenna says, "Ægri persuasio et fiducia omni arti et consilio et medicinæ preferenda."

It is in this way that the magnificent and unqualified promises of the charlatan inspire weak minds with extravagant expectations, and actually, in some rare instances, produce those marvellous cures which we hear trumpeted forth; and those too by drugs either totally inert, or diametrically opposite to the views of even the quack himself.

Sunt verba et voces quibus hunc lenire dolorem,
Possis, et magnam morbi depellere partem. *Hor.*

As the nervous and vascular systems are so particularly under the influence of the mind, we may form some idea of the wide range of effects resulting from the various and almost unlimited play of the passions among so thinking and so reading a people as the English nation.

Corvisart observes that diseases of the *heart* were extremely common in the times of the French revolution, when the minds of all classes were kept in a constant state of agitation and alarm. In this country, the attentive physician may daily observe both disordered action and disordered structure of the heart resulting from mental causes. With the progress of intellectual cultivation, civilization, and refinement, a host of what may be termed PREDISPOSITIONS to disease, have arisen, that lay us at the mercy of almost every breath of heaven!

Our feelings are rendered so acute, that we are all soul within, and all nerve without. We thus, like the spider, "live along the line;" and every event that happens on any point of the globe's surface is regularly transmitted, like an electric shock, to this sympathetic island! The consequence is, that a morbid *sensibility* is generated throughout the whole population, but particularly among those in the upper walks of life, where exposure to the vicissitudes of the atmosphere, temperance *per force*, and daily labour, blunt not the senses, and fortify not the corporeal fabric. Thus constituted, it may be imagined what havoc those great and predominant passions, love, piety, ambition, &c. &c. produce on the enervated frame, when they are carried beyond their natural and salutary boundaries. "Passiones maxime corpus offendunt (*ait Philo Jadæus de anima, lib.* 3.) et animam, et frequentissimæ causæ melancholiæ, dimoventes, ab ingenio et sanitate pristina."

Love, that cordial drop which heaven has thrown into the bitter cup of life, destroys and ever has destroyed, more victims than the conqueror's sword! I need not allude to the wide gulph into which the victims of its *illicit* indulgence are daily plunged, by myriads: this is evident to the most superficial observation. But it is little suspected by the profession, and not dreamt of by the world at large, that the *salutary boundaries of virtuous love* are so very generally *unconsciously* overstepped, as to occasion a range of moral and physical evil in the human race, that would startle the most stoical mind, were that range faithfully and accurately delineated! "De tantillâ lætitia, quanta tristitia; post tantam voluptatem, quam gravis miseria!"—*Bern. C. 3. Med.*

The investigation cannot be publicly conducted; but it may be privately prosecuted by the medical philosopher; and though a path but little explored, it will be found to lead to most important conclusions in the developement and treatment of many obscure and anomalous diseases.

"There are more things in heaven and earth
"Than are dreamt of in our philosophy!"*

Religion, too, the benefits of which extend beyond the confines of the grave itself, has too often been turned by the weakness of human reason, into superstition and fanaticism, which reacting on the corporeal fabric, have destroyed the physical as well as the intellectual powers of the unhappy and misguided zealot! Here the medical philosopher has too many opportunities of witnessing the havoc which intemperance in these sublime passions, produces on the nervous and vascular systems in particular, and through them on almost every organ and function in the human fabric. Those cheerful and moderate indulgences in religious meditations, and exercises of christian duty, which enable man to live in tranquillity and die in hope, are converted by the fanatic into engines of destruction to his own health and happiness. He lives in terror and dies in des-

* There is a veil of mystery over the Hymeneal fane which has never, and probably will never be drawn aside; but the eye of the Medical Philosopher which, like that of the Poet, "Glances from Heaven to Earth, from Earth to Heaven," can recognize, behind this veil, a host of phenomena that let in a flood of light, occasionally, on a variety of moral and physical evils! It has been a question whether knowledge is, or is not, upon the whole, conducive to happiness. However this may be, I am very certain that on *this* particular point, iguorance is *not* bliss; nor is it a folly to be wise!

pair! Or, as is too often the case, the seat of reason gives way, and the soul is immersed in a chaos of maniacal phantasies!

Should it be objected that we are here trenching on the confines of the divine, we may observe, that in their respective researches, the physician and metaphysician must frequently exchange grounds, and that it is difficult to lay down a precise line of demarcation between their territories.

To genuine religion, as taught in the precepts of Christ, the above picture has no applicability nor similitude, no more than the best remedies can be fairly branded with the name of poisons, because they may become so in the hands of ignorance or wickedness. It is the abuse not the use of religion that brings so much misery on mankind.

The subordinate passions, as envy, emulation, ambition, hatred, &c. predispose to, produce, and aggravate the various disorders of the nervous and vascular systems, to an extent far beyond what is generally believed or suspected. These passions are so universally, so constantly, and so commonly in action, that their familiarity puts us so much off our guard, that we scarcely notice the corporeal derangements which they are perpetually generating. Plato was so struck with the effect of the passions on the *body*, that in his Charmides he says—"omnia *corporis* mala ab anima procedêre:"—all diseases of the body proceed from the soul.

But it is the class of mental emotions, denominated *fear, grief, sorrow, and anxiety*, which make the greatest depredations on the functions and structure of the central organ of the circulation. Till the late writings of Corvisart, Burns, &c. cardiac affections were, comparatively speaking, passed over unnoticed by medical practitioners; yet there are many curious allusions in some of the ancient writers to this very subject. Chrysostome, in his epistle to Olimpia, describes sorrow "as a cruel torture to the soul, consuming the body and *gnawing the very heart*. Animarum crudeli tormentum, dolor inexplicabilis, tinea non solum ossa sed *corda* pertingens." Agrippa (*L.* 1. *C.* 63.) alludes to the palpitation of the heart and syncope induced by fear. "Timor inducit frigus, *cordis palpitationem*, vocis defectum, &c." But the most remarkable passage of antiquity is that of Melancthon, It would not dishonour the first pathologist of the present day. "Mœstitia cor quasi per-
"cussum constringitur, tremit, et languescit, cum acri
"sensu doloris. In tristitia, cor fugiens attrahit ex splene

" lentum humorem melancholicum qui effusus sub costis " in sinistro lateri, hypochondriacos flatus facit; quod " sæpe accidit iis qui diuturna cura et mœstitia conflic- " tantur." " Sorrow strikes the *heart*, makes it flutter " and pine away, with *great pain;* and the black blood " drawn from the spleen and diffused under the ribs on the " left side, makes those perilous hypocondriacal flatulencies " which happen to those that are troubled with sorrow."

This is a true picture of cardiac disorder from the nervous irritation of grief or sorrow; and ought to be kept in mind both by patient and physician.

The effects of grief, indeed, are often the cause of more suddenly fatal affections of the heart, than is here mentioned. Every one knows that Philip the fifth of Spain died suddenly on learning the disastrous defeat of his army near Plaisance. Zimmerman states than on opening his body, the heart was found burst. And thus it is, that the vulgar and metaphorical expression of a " *broken heart* " is sometimes pathologically correct.

A remarkable instance of the influence of the mind on the body, occurred, since the first edition of this work, at the Hospital *de la Salpetriere*, in Paris. Mary Glin, a widow, 70 years of age, and who had enjoyed remarkably good health all her life, was so astounded with horror, at learning her daughter, with two children in her arms, had thrown herself out of a window, and was dashed to pieces, that, in one night, her skin, from head to foot, became as black as that of a negro. This blackness was permanent, and the woman having died about two years afterwards of pulmonic inflammation at the hospital abovementioned, she was dissected by the surgeons of the institution, and the skin was found to correspond in structure with that of the negro. *Journal de Medicine, December* 1817.

But the peculiarly deleterious effects of anger, on the heart, stomach, and liver, should not be passed over entirely unnoticed. We have only to look in the face of an enraged man, to be convinced of the nervous and vascular emotion which obtains through every part of the system—

> Ora tument ira; fervescunt sanguine venæ;
> Lumina gorgoneo sævius angue micant.

It behoves every person, who has the least tendency to complaints of the liver or heart, to be incessantly on his

guard against this temporary madness, which deranges the functions of these two organs in a most remarkable degree.

I have said less of the effects of the passions on the stomach, liver, and bowels, because the phenomena are so striking as to be acknowledged and observed by all classes. I wish more particularly to draw the attention of the profession to their effects on the heart, because less known, and less suspected.* We shall conclude this section with a curious subject—the effects on health of literary studies, or passion for literary distinction.

MORBI ERUDITORUM; OR DISEASES OF LITERARY CHARACTERS.

"*Majore studio literarum disciplina agitari coepit, quæ, ut animo pracipue omnium necessaria, sic corpori inimica est.*"—*Celsus.*

If the literary classes of mankind, locked up in their libraries, be secure from various morbific causes, to which their brethren in the more active walks of life are daily exposed, they are preyed upon by a host of maladies, in some measure peculiar to themselves. It is a melancholy, but a certain fact, that a high state of intellectual cultivation is rarely attained but at the expense of bodily health; and hence the ludicrous observation of Frederick the great, that "man seems more adapted by nature for a postillion than a philosopher," is not without foundation in truth.

While the mind is on the rack of thought, the body is inactive; and while a determination of blood is constantly kept up to the head, and consequently an excess of excitability obtains there, the stomach, liver, and alimentary canal become torpid; and hence arise a long train of nervous dyspeptic, and hypochondriacal complaints, to which the literary amateur is proverbially subject. To quote the words of a most intelligent physician,† in a letter to the author, on this subject," unfortunately the physical "is too often in the inverse ratio of the intellectual appetite, "and with the *Bulimia Doctorum* there is too frequently "associated a stomach '*as weak as blotting paper*,' to use

* The author has long directed his researches to *the effects of mental emotions on the heart and nervous system*, and should a common degree of health be spared, he hopes to bring forward some new and important information on this interesting subject, ere long.

† Dr. Dickson of Clifton.

"Vogel's just but rather ludicrous comparison." The effects of literary study on the digestive organs, and, through them on the whole body, have been long observed, and sometimes exquisitely described both by poets and physicians. Ovid has painted the victim of intense thought with great spirit—"*pallor in ore sedet, macies in corpore toto;*" but Voschius and Ficinus have given us as good a pathological account of the business as Abernethy, Parry, or any modern physician could do. "Studiosi sunt ca-"chectici, et nunquam bene colorati, propter *debilitatem* "*digestivæ facultatis.*" *Voschius de peste.* Ficinus is still more particular. "Accedit ad hoc, quod natura, *in* "*contemplatione;* cerebro prorsus, cordique intenta, sto-"machum heparque destituit; unde ex alimentis male "coctis, sanguis crassus et niger efficitur, dum nimio otio membrorum superfiui vapores non exhalent."

This intellectual exertion produces deleterious effects also, by preventing sleep. The tired brain can no more repose, than the overstrained muscles after violent exertion; hence the studies of the day rise in incoherent images at night, or drive away sleep altogether. "Partem noctis, "studiis dedico, non vero somno, sed oculos, vigiliâ fati-"gatos cadentesque, in opera detineo." *Seneca.—Ep.* 8.

But the worst of all is that pest of literature, *Hypochondriasis*, which, in a greater or less degree, attaches itself to all classes of the studious.* The various uneasy sensations which the dyspeptic hypochondriac feels, are transformed in his imagination to the most dangerous diseases of which his reading has furnished him with any description. Indeed so closely do the nervous or sympathetic, imitate *organic* derangements, that medical men themselves are often deceived by the similitude, and how much more prone to error must the hypochondriac be, whose whole nervous system is unpoised; where the sensations are conveyed to the sensorium irregularly, and there make the most exaggerated impressions. Thus that flatulence in the stomach, so constant an attendant on sedentary habits and deranged digestion, will often so mechanically disturb the motions of the diaphragm, and obstruct the free action

* By the term "*studious*" I do not exclusively allude to the *man of literature*; but to all the more studious classes of the three learned professions; and also to all those of other professions and occupations, where much thought is combined with a sedentary life.

of the heart, that palpitations of this organ and intermissions of the pulse, with strange and distressing sensations in the chest, will be the consequence. Then the hypochondriac takes the alarm. Angina pectoris, polypi, ossification of the valves, and other diseases of the heart, arise in frightful review, and aggravate all the symptoms! If, as is almost always the case, he has frightful dreams, and starts suddenly from his unrefreshing slumbers, then dropsy of the chest or of the pericardium is his miserable and unhappy lot! In these constitutions, where leanness is so general, a pulsation can be very frequently felt between the pit of the stomach and navel, on making moderate pressure with the fingers. This symptom, which, in reality, is nothing but the action of the aorta, obstructed perhaps by fecal accumulations, is immediately converted by the literary hypochondriac into an aneurism of the aorta or cœliac artery, and great and direful will be his apprehensions and forebodings.*

There is no part of the body where these morbid feelings will not seat themselves, and ape the more serious organic lesions. In the bladder they will imitate stone, and harrass the hypochondriac with the constant dread of lythotomy. In the lungs they will assume the mask of asthma, nay of phthisis itself; and the pseudo-purulent expectoration will confirm the patient in his belief that consumption is his lot.

From their inactive life, torpid bowels, indigestion, and intense thought, the studious are very much affected with head-aches. These are soon converted by the sensitive patient into organic diseases of the brain or its membranes; and epilepsy, apoplexy, or mania itself are set down as the certain consequences that may be daily looked for!

It is no easy task to root this wrong impression out of the imagination, while the morbid sensation retains its seat in the corporeal fabric. Indeed arguments have oftener the effect of riveting the hypochondriac in his opinion, than of persuading him of his error. In truth, it sometimes requires all the discrimination of the physician to distinguish the real from the pseudo-affection; or, in other words, to draw the line between the sympathetic and organic lesions.

---

* *See note to page* 96, [Influence of the Atmosphere,] where the mode of detecting internal disease by *thoracic percussion and abdominal compression* is alluded to.

And here I shall make a short digression in order to introduce a most remarkable illustration of this subject, which lately presented itself in a public hospital of the French metropolis.

A female 30 years of age, was received into *La Charité* in October 1815, who had, for several months, laboured under symptoms indicative of organic disease of the stomach. These symptoms were, decline of appetite and strength—fixed pain in the region of the stomach on the right side—vomiting of every thing taken, except a small quantity of gum arabic and milk, which was occasionally retained—obstinate constipation &c. These symptoms all increased in violence, till, after lingering nearly 18 months in the hospital, death put an end to her sufferings. On dissection, the *stomach* and bowels were perfectly sound. In the brain was the grand source and seat of the complaint, the function of the stomach being merely affected through sympathy. The Parisian physicians candidly acknowledge that the affection of the *stomach* absorbed all their attention, and that the *brain* was never suspected by them. "Nous n'avons pas soupçonné pendant la vie l'affection du cerveau, les vomissemens avoient, pour ainsi dire, absorbé toute notre attention." *N. Journ. de Med. Mars* 1818.

In the Medico-Chirurgical Journal for October 1818, I have translated this memorable case, and, I hope, proved that there were several symptoms atending it, which might have led to a discovery of its nature, as far as regarded the stomach. Among these were, a preceding and accompanying pain in the head—a softness and freshness in the appearance of the skin—and a want of corresponding emaciation, proportioned to the vomiting and incapacity for food. I should not, however, have touched upon this failure in discrimination, had not the French Physicians themselves candidly and magnanimously avowed it. Neither do I draw my diagnostic principles from hypothetical speculations. On refering to my necrologic notes, I find that during the last twenty years' public and private practice, I have examined—assisted in examining—or been present at the examination of, more than two thousand bodies, with the histories of whose complaints, during life, I was either personally acquainted, or made acquainted by others. In that time, I am free to confess that I committed numerous oversights more glaring perhaps than that of the Parisian Doctors, and I could relate a few committed by others also.

Each error of the past, however, formed a landmark for the future; and to the rising generation of the profession I recommend the constant record of facts, whether humiliating or flattering, as the surest mean of arriving ultimately at satisfactory conclusions. But to return. When the disease of an interior organ is proved to be of the sympathetic or nervous class, nothing but dissipation of mind, and exertion of body can effect a cure. By dissipation I only mean the withdrawing the mind from literary pursuits, and from the opportunity of dwelling on the corporeal sensations, such as horse exercise, or any amusement that requires some management, and presents a succession of objects. When Pope wrote

> ——— "Study and *ease*
> Together mixt sweet recreation,"

he should have substituted *exercise* for ease, as the literary advocate can seldom be at ease *in his brain*, even when walking about, and much less when at rest.

Another species of dissipation is light reading, or the perusal of even a good novel occasionally. Rabelais, Cervantes, Burton, Butler, and Sterne have cured more of the MORBI ERUDITORUM than Hippocrates, Celsus, Galen, Boerhaave, and Cullen.

Whenever we find the *diseases of literature* assail us, we should have the *lamp* scoured out and no more oil put in it. It is *night study* that ruins the constitution by keeping up a bewildered chaos of impressions on the brain during the succeeding sleep—if that can be called sleep which is constantly interrupted by incoherent dreams and half-waking trains of thought. Such is the sensibility, and such the irritability of the studious brain and nervous system, that it is hardly safe to indulge in the sight of theatrical representations, as the mimic scene is sure to rise in the distempered imagination, should sleep take place; but more frequently the histrionic impression continues so vivid as to banish all tendency to repose, and the night is spent in tossing on a sea of incongruous images, and floating among the *disjecta membra poetæ!*

If, to procure repose, opiates or spirituous liquors are had recourse to, then the brain is likely to suffer congestion or inflammation, as was the case, I believe, with the celebrated Professor Porson. Here the morning alone should be dedicated to study, and the evening to light amuse-

ments, some entertaining occupation, or perambulation through town or country with a literary friend.

As the digestive organs are particularly implicated in the derangements resulting from literary studies, the blue pill and aloes, three grains of the former and one of the latter, should be taken every third or fourth night, to carry off diseased, and increase the healthy secretions of the liver and alimentary canal. Acidities in the stomach and bowels should be corrected by magnesia and the volatile alkali, while the sea air and bath should, if possible, be enjoyed in the summer season.

Lastly, I would recommend my literary brethren (from some little experience in intellectual avocations) to always keep in mind the "*invita Minerva*" precept of the poet. When we find the intellectual functions indisposed to exertion, we should not *press* them. "One *volunteer* is worth a dozen of *pressed* men;" and so it is here. One hour of *mental* energy is worth a week of forced labour. In the "iter ad astra" it is sometimes dangerous to goad our Pegasus too much. The path is narrow and intricate—the etherial courser is often restive when *spurred*, and flounces out of the proper road. The wise and parental admonition that was given to Phaeton, in his ambitious course, may be usefully remembered by the Poet, and by every author engaged in intellectual enterprizes.—

"Parce puer stimulis, et fortiter utere loris."

On a future occasion I shall more particularly delineate the connexion and mutual dependence that exist between the mental and corporeal functions, and open some pathological views to the literary classes of society, that may be of most essential service to them in their intellectual labours. Few of them are aware of the vast influence which the state of the *digestive organs* exerts on the finest effusions of the imagination!

Sect. VIII.—SLEEP.

Tir'd nature's sweet restorer—balmy sleep!
He, like the world, his ready visit pays
Where fortune smiles; the wretched he forsakes.

This mysterious state, in which we pass one-third or more of our existence, in nearly intellectual annihilation, has puzzled the philosophers of all ages to analyse. It is not by metaphysical disquisitions, but by physical and physiological investigations that we shall ever gain any insight into this most remarkable phenomenon.

The more intimately we become acquainted with the laws of our own frame, the more we will be convinced that there is no *function* in the body which has not its *alternate* periods of action and repose. This, however, is not the received opinion. One grand division has been made of the functions, into animal or voluntary, and organic or involuntary. The various muscles of locomotion, the muscles by which we masticate our food, &c. belong to the former class—are under the command of the will, and have their periods of repose when we sleep. Those muscles employed in the circulation of the blood—in the digestion of our food—in the secretion and absorption of various fluids, as the bile, &c. belong to the second class—are not under the will, and are *supposed* by physiologists to go on uninterruptedly both while asleep and awake. The intellectual system has also its alternations of exertion and rest; for when, in sleep, the senses, as hearing, feeling &c. cease to transmit impressions to the brain, the mind has no longer materials to act on, and immediately becomes unconscious of its own existence.*

This law of the intermission of action has been applied by Bichat to the theory of sleep. "General sleep," says he, "is the assemblage of particular sleeps. It is derived from "that law of the animal life which causes in its functions "a constant succession of periods of activity, and times of

* This statement refers, of course, to natural and sound sleep. Dreams will be noticed hereafter.

"intermission; *a law which pointedly distinguishes itself* "*from the organic life.*" Now I do not think that this *point of distinction* is so fairly made out as the celebrated Frenchman supposes. Let us take one of the viscera belonging to the organic life—say the heart, which is the *punctum saliens* in the embryo, and the *ultimum moriens* in old age. The time occupied in each systole or contraction of the ventricle is about the third of a second, and that required for the diastole or relaxation, two-thirds of a second. Here then the heart, the most active muscle belonging to the organic life *rests* sixteen hours in every twenty-four.

It may be objected to this, that in the diastole of the ventricle a motion of self-expansion is produced, and consequently that the walls of the heart are not then at rest. But this principle of self-expansion, if it do exist, must be produced by the elastic matter interspersed among the muscular fibres; for it will hardly be contended that muscular action, which must be muscular contraction, can have the effect of dilating the heart. In every point of view then this central and laborious organ of the circulation, has its "*periods of activity and times of intermission,*" just as regularly as, if not more so than, any voluntary muscle in the human frame.

The same may be said of the stomach, intestines, liver, lungs, and all the organs of secretion, excretion, and absorption. They are governed by the same general laws of *alternate action and repose* that regulate the voluntary muscles, the organs of sense, and the intellectual functions. Nor is this a useless or merely curious discussion. It teaches us an instructive lesson, in shewing us that the *organic functions* require *their* periods of sleep, as well as our wearied voluntary muscles; a consideration which seems to have seldom entered the thoughts of those who goad them on to almost incessant exertions, as though they were inanimate machines endowed with the power of *perpetual motion.*

But to return to the subject of sleep, as connected with Hygiene. I shall consider it under two points of view—1st, its proper and salutary periods—2nd, its abuse and interruptions.

1st, when the various stimuli of light, heat, noise, and the bustle of occupations connected with day, are withdrawn, then the tired muscles, organs of sense, and intellectual functions, would sink into a sweet oblivious quiescence till the sun again appeared, did we obey the dictates of nature,

This is the case with the majority of animals; though some of them, destined for prey and slaughter, necessarily select the night for their depredations. This last class is that which the votaries of fashion have resolved to imitate. They raise a host of *artificial* stimuli around them, the moment that the *natural* stimuli are withdrawn; and these are kept up till the night is far advanced, and till sober mortals, together with almost all animated nature, have waked from the first period of sound and refreshing sleep! Then again when—"the breezy call of incense-breathing morn" rouses all living creatures to exertion with renovated vigour, the night-consumer lies, like Polyphemus, immersed in the fumes of debauch, or tossing on an ocean of chaotic dreams, resulting from the unnatural and pernicious stimulation of every nerve of sense, during the preceding evening!! It is no wonder that the candle of life, thus lighted at both ends, should be rapidly consumed, independently of the numerous *wasters* which prey upon its substance in every direction!

The valetudinary then will ponder on these things; and will endeavour, as far as the evil habits of society will permit, to go early to repose, withdrawing all artificial stimuli of light, heat, noise, study, &c. and after eight hours of rest, will force himself from his couch, however difficult may be the effort at first. As he will soon acquire the habit both of sleeping and waking at a particular hour, he will thus not only prolong his existence, but will, by early hours, be able to turn the natural range of life to a much better account.

Interruptions of Sleep.—Many of these, such as asthma, water in the chest, organic diseases of the heart, &c. cannot be treated of here; but there is a large class of sleep-destroyers which are connected with the stomach and other organs of digestion, and which may be greatly mitigated by a little attention. They operate with such a powerful influence on our health and spirits, that I shall go into some detail on this interesting topic.

It has justly, I think, been considered by a late author, (Mr. Waller) that disturbed sleep, frightful dreams, and terrific visions, are all so many grades of NIGHT-MARE, which is the climax of the disorder.

The vulgar opinion that *bad dreams* are the forerunners of disease, is perhaps not entirely chimerical; since, in grown persons at least, they are indicative of derangement

in the biliary and digestive organs, and when they amount to frequent and distressing attacks of Incubus, they are by no means to be ranked among the lesser calamities to which our nature is liable. How many are there, in fact, to whom sleep is rather an object of terror than comfort; and who rise from their couches more wearied and exhausted than when they retired to rest!

The Greek term EPHIALTES is expressive of the weight and oppression felt in Night-mare, and which conveys the idea of some *living being* having taken its position on the breast, inspiring terror, impeding respiration, and paralysing all the voluntary muscles. The real nature of *Incubus* is to this day a matter of doubt; and as physicians have paid little attention to its investigation, the victim of this frightful hag is left without a remedy, and almost without a hope!

Virgil in the twelfth book of the Æneid has given a description of Incubus, and Walter Scott, in his Lady of the Lake, had evidently Night-mare in view, when he penned the following expressive lines.

> In broken dreams the image rose
> Of varied perils, pains, and woes;
> His steed now flounders in the brake,
> Now sinks his barge upon the lake;
> Now leader of a broken host
> His standards fall—his honour's lost!
> Then—from my couch may heavenly might
> Chase this worst phantom of the night!

The first attack of the fiend, is, if the sleep be profound, in the shape of a disagreeable dream. The patient imagines himself exposed to some danger, or pursued by an enemy whom he cannot avoid. He frequently feels as though his limbs were tied, or deprived of motion; at other times, he fancies himself confined at the bottom of a cavern or vault, and in danger of suffocation. This is often the whole of the sensation which the disease produces, when it goes off by an oblivious sleep or a pleasant dream. Here, Incubus is not fully formed—the predisposition to it only is evinced. A real paroxysm of Night-mare is thus faithfully drawn by Mr. Waller.

"When the paroxysm does actually take place, the uneasiness of the patient in his dream rapidly increases, till it ends in a kind of consciousness that he is in bed and asleep; but he feels to be oppressed with some weight, which confines him on his back and prevents his breathing,

which now becomes extremely laborious, so that the lungs cannot be fully inflated by any effort he can make. The sensation is now the most painful that can be conceived : the person becomes every instant more and more awake and conscious of his situation ; he makes violent efforts to move his limbs, especially his arms, with a view of throwing off the incumbent weight; but not a muscle will obey the impulse of the will : he groans aloud, if he has strength to do it, while every effort he makes seems to exhaust the little remaining vigour. The difficulty of breathing goes on increasing, so that every breath he draws seems to be almost the last that he is likely to draw ; the heart generally moves with increased velocity, sometimes is affected with palpitation; the countenance appears ghastly, and the eyes are half open. The patient, if left to himself, lies in this state, generally about a minute or two, when he recovers, all at once, the power of volition : upon which he either jumps out of bed, or instantly changes his position, so as to wake himself thoroughly. If this be not done the paroxysm is very apt to recur again immediately, as the propensity to sleep is almost irresistible, and, if yielded to, another paroxysm of Night-mare is, for the most part inevitable."

Where the disease is established, some confusion of head, singing in the ears, and spectra before the eyes, will remain for a time after being roused. There will also be in many cases acceleration of the pulse and palpitation of the heart. Mr. Waller is of opinion that when the paroxysm goes off, as frequently happens, without the patient waking, strange hallucinations are produced, which give origin to reputed visions, and supernatural visitations, even among people of great intellectual cultivation. The degree of consciousness during a paroxysm of Night-mare is so much greater than ever happens in a dream, that a person who has had a vision of this kind, can not easily bring himself to a knowledge of the deceit, unless he wakes out of the paroxysm, and finds some incongruity in respect to time or place. It was probably nothing but attacks of Incubus which gave origin to the following complaint from the amiable Cowper. " To whatever cause it be owing (whether to constitution or God's express appointment), I am hunted by *spiritual hounds* in the night season." *Hayley's Life of Cowper.* Now we know that when the digestive organs are deranged, there will be very preternatural pulsations extending from the œsophagus to the rectum, and

these combined with Night-mare, might very easily give rise to the idea entertained by the poet: indeed the visions accompanying Incubus are often of the most frightful kind. Forestus, when affected with this complaint, thought he was pressed upon the chest by a black dog, in consequence of which he could not breathe. "Putabat pectus suum comprimi a cane nigro, unde respirare non potuit."

There is little doubt but that, in this way, many well-meaning persons have deceived themselves and others with the belief that they have seen spectres, heard voices, &c. in the dead of the night; and very possibly that such convictions have, under certain circumstances, produced the event foreboded or dreaded.

To a modification of Incubus, Mr. Waller attributes that indescribable terror which some persons feel in their sleep, and which frequently obliges them to vociferate aloud, and generally to start with such violence, or even to jump out of bed, with or without a terrific dream.

Incubus will sometimes occur in the healthiest persons, when any indigestible food happens to lie in the stomach or the upper portions of the alimentary canal, during sleep.—But a peculiar habit of body is necessary to render a person *subject* to it. Many feel it from youth. These are generally of a contemplative disposition, and of that particular temperament which disposes to Hypochondriasis and Nervous diseases. Sedentary employments, confinement within doors, great application to literary or other studies, &c. also predispose to the attacks of Incubus. Those too, who are accustomed to coarse and unwholesome food, however exposed to the open air are obnoxious to this disease; hence its great prevalence among sailors. Hypochondriacs and pregnant women are also its victims.

The proximate cause of Incubus has given rise to various speculations. A very general opinion prevails that this affection is produced by mechanical obstruction to the blood's circulation, from particular position of the body.—It is a certain fact, however, that no posture is a security from Night-mare among the predisposed; neither is a full stomach to be accused as the cause, nor an empty one to be expected as the antidote of this disorder. There is, however, an almost universal opinion, that Incubus attacks persons *only* while on their backs! and this opinion *seems* to have some foundation in fact, from the following circumstances. One of the symptoms almost inseparable from the

disease is this, that the patient *appears to himself* to be kept down upon the back by some external force; and as, at the moment of recovering the power of volition, a great confusion of ideas prevails, a person may easily imagine that he has recovered himself by some effort of his own by turning from his back to his side. But these things are extremely fallacious, as there is no trusting to the senses during a paroxysm of Incubus.

It appears, however, from the mode of treatment to which this disease gives way, that the primary cause, in whatever manner it may act, has its seat in the digestive organs, and that Night-mare originates in defective digestion, whereby the food, which should be converted into good chyle, is transformed into a half-digested mass of *acid* matter, which is productive of heart-burn, eructations, flatulence, gripes, with a long train of dyspeptic and hypochondriacal complaints.

There are many stomachs which quickly convert every thing they receive into an acid; and such will be generally found to be the case with persons subject to habitual Night-mare, or frightful dreams, and disturbed sleep. Such stomachs are too freequently distended with some acid gas, which alone gives rise, in many cases, to paroxysms of Incubus; and may often be instantly removed by any warm cordial, as peppermint, gin, brandy, carbonate of ammonia, &c. Whytt used generally to take a small wine-glass-full of brandy going to bed, in order to keep off Night-mare and terrific dreams, to which he was very subject.

Of all medicines, however, the carbonate of soda, taken in a little ale or porter, as recommended by Mr. Waller, will be found the most efficacious. About a scruple going to bed, is a sufficient dose; and where acidities prevail in the stomach, the same quantity twice in the day, will be useful. This medicine not only neutralizes any acid in the first passages, but likewise brings away by stool, vast quantities of viscid slimy matter, so acrid as to burn and excoriate the parts it touches. The appetite now generally improves; but the propensity to acidify remains for a long time in the stomach, and requires great attention to diet and regimen. There are few people with whom particular kinds of food do not disagree, and these being known should be avoided. Thus chesnuts or sour wine will almost always produce Incubus among those predisposed to it, as was observed by Hildanus. "*Qui scire cupit quid sit Incubus?*

Is ante somnum comedat castaneas, et superbibat vinum fœculentum." In this country, cucumbers, nuts, apples, and flatulent kinds of food, are the articles most likely to bring on Night-mare.

The following draught I have found very efficacious in preventing attacks of Incubus, viz. carbonate of ammonia, ten grains, compound tincture of cardamoms, three drachms, cinnamon water, two ounces, to be taken going to bed.

Intemperance of any kind is hurtful. Most vegetables disagree; and pastry, fat, greasy, and salted meat, are to be avoided. Moderate exercise is as beneficial as sedentary avocations, intense study, and late hours are prejudicial.*

---

* A question is often asked, is it hurtful to take a nap after dinner? It is certain that both man and animals feel a natural propensity to sleep after a full meal. That rest, or at the most *passive* exercise, is proper after the principal meal, is unquestionable; and in valetudinarians, I have not observed a short slumber on the sofa, after dinner, either injurious to health, or preventive of sleep in the night. I need hardly remark that to eat and drink to satiety, and thus induce an irresistible sleep, is injurious to the constitution. Those too, who undergo much fatigue before dinner, may fairly be indulged in a short repose after that repast.

Sect. IX.—MEDICINE.

"Haec nusquam quidem non est."—*Celsus.*

Some good and much harm are every day done by the family medicine chest, and the patent medicine warehouse. If the experienced physician is often at a loss what to prescribe, and frequently finds it most prudent to prescribe nothing at all; what infinite mischief must be hourly produced by the patient, and the still more ignorant quack, pouring drugs, of which they know little, into a body, of which they know less! The dictionaries of *popular* medicine and gazettes of health slay annually their millions; not *directly* indeed, by the actual injury of the remedies which they congregate without knowledge or discrimination, but *eventually*, by procrastinating the interference of the regular practitioner till the period of cure is past, or until the disease has taken that hold on the constitution or part, which will baffle all future remedial measures.

Speaking generally, every domestic or patent medicine which simply evacuates from the skin or bowels, *may* do good; but all those which, in any way, lull pain, (and most of them have opium in their composition for this very purpose) or prove stimulant or cordial, *must* inevitably do injury, in nine cases out of ten. It has been abundantly proved throughout this Essay, that *debility* is rarely independent of some organic or functional disease, and that the latter must, for the most part, be removed by remedies which operate as evacuants, in some shape or other—such as purgatives, diaphoretics, sialagogues, cholagogues, &c. including blood-letting. Now it may easily be conceived how deleterious must that medicine prove, which, by an anodyne property, soothes, for a time, the painful sensations proceeding from, and wisely designed to point out the nature and seat of, the disease; thus masking the enemy, and enabling him to revel on the very vitals of the unhappy victim, unsuspected—unassailed! Again, if any stimulant or cordial property be combined with the anodyne (as is generally the case in patent medicines) then the *gilded* poison gives redoubled force and activity to the original

malady, and the patient is pushed forward with an accelerated, though hidden velocity, to the confines of the grave, or what perhaps is worse, to a state of irremediable torture, and lingering decay.

These are the glorious fruits of that wide system of *charlatanism* which pervades these islands, and which must prove as strong "a preventive check" to population as the statistical philosopher can desire! It is on this account, I have been solicitous to pourtray the *causes* of disease as beacons to general readers; but to attempt to teach them how to use the remedies, when they are actually overtaken with illness, would be to furnish them with the letters of Bellerophon for their own destruction.

Nevertheless a few observations on some safe and useful medicines, may be allowed here. As by far the greater number of our maladies flow from repletion, or the excessive indulgence of food and drink, so an open state of the bowels, or rather a periodical evacuation of them by purgatives, would obviate a very great proportion of the disorders we incur. Man will not abstain from animal food two days in the week; but he will take a couple of doses of physic, as an alternative—and it is the best alternative we have. Five grains of the blue pill and one or two of aloes, (where the person is not disposed to hemorrhoids, or three or four grains of jalap as a substitute for the aloes, where he is,) taken regularly twice a week, for three or four months in the year, with half a pint of the compound decoction of sarsaparilla, every day, for the same period, would do more towards the preservation of health and prolongation of life, than all the balsams and elixirs from the "Balm of Gilead" down to the "Dutch Drops." If ever a medicine deserved the name of *diacatholicon*, it is this. Happy would it be for mankind if every patent for sealed poison were burnt, and the foregoing formula substituted instead!!

The old custom of bleeding in the spring, and taking some cooling physic, has been ridiculed by modern physicians; but as the season alluded to generally brings with it a host of inflammatory affections, I know not upon what principle the practice has been condemned. For my own part, I am old-fashioned enough to most warmly recommend the revival of this exploded precaution.*

* Since the first edition was printed, I have observed the following passage from the pen of a distinguished physician, Dr. Percival of Bath. "It may be remarked that the old and popular custom of taking purges in the spring and fall of the year, to prevent fevers, serves to confirm the value of this practice." *Dublin Hospital Reports.*

Before concluding this part of the work, let me say a few words in favour of injured innocence—of the helpless infant, who cannot tell his sufferings. Childhood is peculiarly liable to acidities and other derangements of the stomach and bowels. Nature has wisely given the infant, therefore, the power of crying and drawing up its little legs, to indicate the griping sensations by which it is annoyed. But what is the consequence? The infatuated mother, or criminal nurse, procures the "Daffy," or "Godfrey," and by stupifying the child's senses, smothers its cries, and actually locks up the disease! From repetitions of this practice, bowel complaints, engorgement of the liver, inflammation, and water in the brain result; and then, when the little sufferer is no more, the misguided parent has to lament, in vain, (if conscience yet maintains it seat) the destruction of her progeny!

O, taught by counsel, timely learn to shun
The fatal path where thousands are undone!

CONCLUSION.

I have thus brought to a close a work which is at least free from one demerit—the MEGA BIBLION evil! Under the genial influence of a modern typographical atmosphere, it would have easily attained a very different kind of stature and corpulence. But I have preferred utility to profit; and I trust that both to the rising generation of the profession, and to the public at large I have offered observations and reflections that may tend to the "prolongation of life and conservation of health," long after the spirit that dictated them has fled to other regions.

JAMES JOHNSON.

London, August 1st, 1818.

FINIS.

MR. JOHNSON'S QUARTERLY JOURNAL OF

MEDICAL & SURGICAL SCIENCE.

THE

Medico-Chirurgical Journal,

OR

Quarterly Register

OF

MEDICAL AND SURGICAL SCIENCE,

INCLUDING, OCCASIONALLY,

RECORDS OF NAVAL AND MILITARY MEDICINE.

ARRANGEMENT.

I.—Practical Essays and Communications original or translated.
II.—Bibliology; or Analytical Reports of all important Medical Publications.
III.—Foreign Medical Literature.
IV.—The Quarterly Periscope; or Synthetical view of the British Journals, with Practical Commentaries.
V.—The Port-folio; or Medical and Surgical Miscellany.

EDITOR,

JAMES JOHNSON, ESQ.

Consulting Surgeon to his Royal Highness the Duke of Clarence; Author of the "*Influence of Tropical Climates on European Constitutions*"; of the "Influence of the Atmosphere on the Health and Functions of the Human Frame &c."

Assisted by several eminent Practitioners.

LONDON:

Printed by WILLIAM THORNE, Red Lion Court, Fleet Street, to whom communications [post paid] are requested to be sent. Sold by BALDWIN, CRADDOCK, and JOY, Paternoster Row; and all other Booksellers, if previously ordered.

(To be continued Quarterly, price 3s. 6d.)