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PRACTICAL ILLUSTRATIONS

OF THE

SCARLET FEVER,

MEASLES, AND PULMONARY CONSUMPTION;

WITH

OBSERVATIONS

ON

THE EFFICACY OF SULPHUREOUS WATERS IN CHRONIC COMPLAINTS.

BY

JOHN ARMSTRONG, M.D.

PHYSICIAN TO THE FEVER INSTITUTION OF LONDON.

The end of every thing should direct the means.

WILLIAM PENN.

SECOND EDITION.

LONDON:

PRINTED FOR BALDWIN, CRADOCK, AND JOY;

PATERNOSTER ROW.

1818.

C. Baldwin, Printer,
New Bridge-street, London.

TO

CHARLES WIGHTMAN, M.D.

AS A MEMORIAL OF REGARD

FOR HIS WORTH AND TALENTS,

THIS VOLUME IS INSCRIBED,

BY HIS FRIEND,

JOHN ARMSTRONG.

Dec. 15, 1817.

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PREFACE.

NAMES have governed or influenced the world in almost every age. But an æra has arrived in the history of physic, when the vague conjectures of the most celebrated individuals must give place to the inferences of unbiassed observation. The improvement of the medical art is one of the most important circumstances of the times in which we live. Though it may have attracted less attention than other passing events, yet it must strike those who shall hereafter review past transactions; for its beneficial effects will not be limited to the present, but extend, with an accumulating force, to the remotest posterity. This improvement has not been brought about by the labours of any one man, but of many men, who, in disregarding systems, have assiduously investigated particular diseases. Experience and reason have gained a signal triumph over the dogmas of

the schools and the prescriptions of speculative authorities. An active and impartial spirit of inquiry has pervaded almost every department of the profession; and its continued operation finally promises to place medicine in the class of the more perfect sciences. Lord Bacon observed, that up to his time only one man had studied physic in the right way, and that man was Hippocrates. But had he now lived, he would have acknowledged, that numerous men of different countries were cultivating it in the spirit of his own philosophy, and with an enthusiasm which cannot be paralleled, much less surpassed, in the history of medicine.

Anxious to contribute something to the general work of improvement, it has been my business for a series of years to note the phenomena of disease at the bedside; and having collected many facts, and deduced many inferences, I ventured to publish the results of my experience. New editions of my writings having been recently called for, this volume has been carefully revised; and it is hoped that it will be found less imperfect than the former edition. In reviewing the his-

tory of my own mind, I have found, that one of the first steps in the progress of practical knowledge is to unlearn. But in having freed myself from many erroneous associations of education, I am exceedingly desirous not to be entangled in those strong partialities which men are apt to entertain for their own productions; and therefore I shall studiously attend to the suggestions of candid criticism, whether publicly or privately conveyed, as I trust that my sole object is the advancement of that Art, to which so large a portion of my life has been devoted.

Once our libraries were crowded with Commentaries on the opinions of others, a state of literature which, when general, always marks the declining genius of a country; but now, instead of such servile employment, the press daily teems with the productions of those who possess that independence which prompts them to observe and to think for themselves. Many of these productions, it is true, may bear the evidences of too precipitate an ardour, but still they are the earnests of better times and things; and where such numbers continue to present their offerings, the trea-

sury of science must be enriched at last. Among these I have presumed to appear, conscious that the labour of a mind like mine can add but little to the general stock; yet it would be most consolatory to me, if that little should at all be found to alleviate human suffering, or to stimulate others to more successful exertion.

23, *Southampton-Row, Russell-Square,*
November 12, 1818.

CONTENTS.

	Page
PREFACE	v
THE SCARLET FEVER	3
Description of the Scarlatina Simplex	5
——————— Anginosa	8
——————— three Forms of the Scarlatina Maligna	11
Treatment of the Scarlatina Simplex	33
——————— Anginosa	39
Method of treating Suppurations in the internal Ear after Scarlet Fever	48
Treatment of the Scarlatina Maligna	55
MEASLES	115
History and Pathology	116
Treatment and Sequelæ	142
PULMONARY CONSUMPTION	181
Diseases with which it is liable to be confounded :—	
Chronic Inflammation of the Bronchia	182
Ulceration in the Trachea	187
Chronic Inflammation of the Pleura	193
Chronic and Common Inflammation of the Lungs	197
Causes of Pulmonary Consumption enumerated, and its Pathology illustrated	206
Diagnostic Signs	264
Treatment of Chronic Inflammation of the Bronchia	270
Dr. Chapman's Cases of Chronic Inflammation of the Bronchia cured by Bark	277

Page

Hints on a Method for improving our Materia Medica.... 280
Treatment of Ulceration of the Trachea 283
———— Chronic Inflammation of the Pleura, &c. ... 290
———— Pulmonary Consumption 297
Remarks on Digitalis and Tartarized Antimony 322
Proposal to establish a Society for the purpose of further elucidating the Nature and Treatment of Phthisis..... 338
Dr. Barlow's Remarks on the Use of Flannel..... 339
Observations on the Efficacy of the Balsam of Copaiva in Inflammations of Mucous Membranes 347
General View of the Pathology and Treatment of Chronic Diseases, with Illustrations of the Utility of Sulphureous Waters..... 363
The Abuse of Opium and Mercury..... 390
Simple Excitement a State different from Inflammation.... 462
Arrangement of the Functions of the Human Body into the Vital, the Mechanical, and the Chemical 467

THE SCARLET FEVER.

THE SCARLET FEVER.

THE Scarlatina Simplex, Anginosa, and Maligna, are the three species into which most authors have divided this disease: and certainly the first of these adjunctive terms is sufficiently exact, but the last are objectionable, since they do not mark the proper characters of the two remaining species. With respect to the epithet Anginosa, it denotes a symptom more or less common to all the modifications, and therefore cannot be correctly applied to one in particular. As for that of Maligna, it expresses nothing distinct concerning the nature of the disease, and confounds under one species some striking varieties; while it also involves an hypothesis as to the presence of something hostile to the principle of life, and may thus mislead by its received import. Yet to avoid innovation, I shall adhere to the old nomenclature, and, to remove obscurity, shall at the same time point out those peculiarities of the complaint not included in our common classifications; and though little or nothing new may be adduced relative to the first two species, it is hoped, that some additional information will be communicated on that which is deemed malignant.

An intelligent writer * has observed, that it is by a clear and distinct recapitulation of *little* circumstances, that orators, and all those who address the passions, render their descriptions more vivid and complete, and interest as well as influence the minds of their hearers. Be this as it may, it cannot be doubted, that the medical art might often be advanced, and humanity benefited, by authors attending to such *minutiæ* as mark the similarities, discrepancies, and stages of diseases. Under this impression, I shall be rather particular, in speaking of certain points in the character and pathology of this distemper, which have not yet been made sufficiently prominent.

SCARLATINA SIMPLEX.

It is not unknown to me, that Sydenham and De Gorter have noted the scarlet fever under so mild an aspect, that it terminated spontaneously without any inflammation of the internal fauces. But, so far as my observation has extended, inflammation of the throat constantly attends the cutaneous affection: it even takes place in some cases without that affection, and, according to my experience, may therefore be fairly received as an essential part of this fever. The inflammation of the throat, however, is slight in the simple scarlet

* Letters on Literature, Taste, and Composition. By George Gregory, D. D. In two Volumes. See vol. i. p. 17. London: printed for Richard Phillips. 1808.

fever; that form of the disease which is usually ushered in without much rigor, or disturbance of the stomach; though uneasiness of the head, restlessness, and lassitude, are almost invariably present, with weakness of the pulse, and paleness of the face. These symptoms may continue from one to two or three days, and, designating the primary stage of the disease, are succeeded by an universal excitement. It is commonly within the first thirty or forty-eight hours of this second stage that the scarlet efflorescence comes out, first upon the upper, and then over other parts of the body; finally colouring the skin somewhat like the shell of a boiled lobster, and diffusing itself over the mouth, tongue, and throat. Early in the second stage some soreness or fulness is most frequently felt in the throat, and the voice is not quite so clear and sonorous as ordinary. The skin also, from the preternatural flow of blood towards it, soon becomes not only morbidly sensible to the touch, but rough, dry, and hot; though the temperature of it perhaps rarely rises above 103° of Fahrenheit's scale. The lips are now of a more vivid colour than natural; the face flushed and rather fuller; and the tongue commonly whitish in the middle, but red round the edges. Except in children under two years of age, who are always very irritable, the pulse is seldom much above 100 or 110 in the minute; though during the greater part of this stage it is increased in tone as well as in velocity. For the

most part the thirst is not very urgent, yet the functions of the stomach are always impaired, and the alvine evacuations often somewhat darker than common. The pyrexia slightly remits in the morning, and rising in the course of the day, mostly reaches its highest point about bed-time, when a slight delirium sometimes occurs. But, as Heberden justly remarks, there is no form of fever in which such an occurrence is of so little consequence as in this; for as it proceeds from the exacerbations, so it almost always disappears on the approach of the remissions. The second stage, or that of excitement, seldom continues longer than four or five days, when it is followed by one of slight collapse, in which the pyrexia disappears, the pulse becomes slower and softer, and the skin more relaxed. About the time that the excitement gives way, the efflorescence begins to recede, and fades entirely away about the seventh day; after which there are commonly more or less scurfiness and desquamation of the cuticle.

Agreeably to my observations, the above is the common form and course of the simple scarlet fever. But it is occasionally of shorter duration, and in general terminates most favourably; because there is hardly any internal congestion in the first stage, only a short and moderate excitement in the second, and of course no serious collapse in the third. Yet having now and then seen this variety, suddenly as well as gradually, pass into that form

denominated Scarlatina Anginosa, I cannot assent to the unqualified assertion of the illustrious Sydenham, that it is but a disease in *name*, only dangerous from the too great officiousness of the physician. In the very mildest form of the scarlet fever there is an increased heat of the skin and an accelerated pulse; but the blood seems to be so equably distributed throughout the arterial system, that local inflammation cannot be strictly said to exist. This equable distribution of the blood, when attended by a hot surface and a quick pulse, may be dominated simple excitement of the circulation, which is always accompanied with more or less change in the secretions; and this state, though it has been so constantly confounded with inflammation, obviously differs from it, inasmuch as in the latter the blood is always preternaturally accumulated in a particular part. Yet simple excitement may readily produce inflammation, and in fact is the most frequent cause of it; for if there be a latent weakness in any organ, the simple excitement, if not timely moderated, is sure to give rise to inflammation there. It is on this account, that many diseases, merely marked by simple excitement at the beginning, are complicated with inflammation in their progress; and hence it is, too, that apparently benign seizures of scarlatina may eventually become the causes and concomitants of serious affections of some of the viscera. Nor is this doctrine to be confined to the scarlet fever alone, since it is alike applicable to almost every other febrile complaint. It is indeed only in

subjects of the soundest constitutions that we ever see simple excitement uncombinedly exist throughout a disease; and the reason why it so frequently occasions inflammation is, that some tissue or other had been secretly in fault before its occurrence. Constitutional shocks are by far the most common causes of internal inflammation; and the precise seat of that inflammation is determined by some antecedent defect in the organ attacked. But it is time to pursue the inquiry of the scarlet fever.

SCARLATINA ANGINOSA.

The Scarlatina Anginosa is more strictly an inflammatory form of the disease, and attacks nearly in the same way as the simple scarlet fever. But to greater degrees of chilliness, head-ache, and restlessness, in the first stage, are superadded a marked oppression of the præcordia, and prostration of the voluntary powers, with nausea, retching, or vomiting. The efflorescence most commonly appears on the skin within the first three days from the development of the excitement, and about the same time redness and swelling are observable on the internal fauces; the patient complains of stiffness in the neck and jaw, and fulness as well as soreness in the throat, particularly when he attempts to speak or to swallow. The pulse is throughout quicker than in the simple scarlet fever; the thirst greater; the tongue drier, and more florid at the edges; the uneasiness in the head more distinctly

felt; the stools darker, or more morbidly bilious; the heat of the surface more elevated, often rising to 106° or 108° of Fahrenheit's scale, and even sometimes higher. The evening exacerbations are also greater, and they often induce a species of delirium, in which the patient, particularly if left alone, or in the dark, talks much to himself. In this modification of the disease, as in most others, the affection of the throat is dependant in a great measure upon the fever: if the latter should kindly abate, from the first four or five days, there will be seldom either sloughs or specks about the tonsils; but merely an increased secretion of mucus, some of which often adheres to the part, and looks like an ulcer. But when the fever continues longer, or runs higher, specks generally form about the tonsils, which are finally converted into superficial, ash-coloured sloughs. Even when such cases are favorable, the throat is loaded with a glutinous mucus, and the pituitary membrane often much inflamed; but neither the discharge of the throat nor of the nose is of an offensive or acrid nature. The superficial sloughs in the throat begin to separate as the fever declines, which it frequently does about the eighth day, and then the sores beneath heal rapidly. It sometimes, however, happens that, instead of ending so favorably, very dangerous symptoms arise in the progress of the fever; and in most of these examples the sloughs grow fouler, and the discharge from them and from the nose becomes very acrid. Painful indurations of the glands in the neck, tenesmus, or diarrhœa, are then

not uncommon, all of which seem to be connected either with the irritation or with the foul secretions of the fauces. Under these circumstances, patients sometimes gradually sink into an irrecoverable collapse; or expire from an attack of bronchial inflammation, or from gangrene of the throat. In other unfavorable instances, however, the danger is not confined about the throat, but rather proceeds from the brain, which is sometimes greatly affected in the stage of excitement; and the patient at last dies comatose, about the end of the second week. Again, in cases of a still different character, where the brain is less seriously disordered, symptoms of abdominal disease arise in the stage of excitement, and by degrees become most urgent. At first there are only slight pain and soreness in some part of the abdomen, with a quickened pulse and respiration; but the pain and soreness gradually increase, and at length are attended with vomiting, eructation, fulness of the belly, and general restlessness. In six, seven, or eight days, the abdominal soreness and pain abate or disappear, while the pulse grows more rapid and feeble; the breathing more anxious; and the vomiting more urgent. Cold clammy sweats, and an universal collapse now speedily supervene, and are the immediate precursors of death.

It will appear, then, from the above account, that the Scarlatina Anginosa is sometimes attended with moderate, and at other times with severe symptoms; and it is of great consequence to bear this

its two-fold character in mind, more especially as the severe may follow the moderate symptoms at any period of its progress. In those cases where the symptoms are moderate, the inflammation is chiefly limited to the throat and mucous membrane of the nose, and the excitement of the arterial system subsides without inducing actual inflammation of the viscera; yet where the symptoms are comparatively severe, the inflammation is not limited to the throat and nasal lining, but attacks some of the viscera, commonly under a sub-acute character. As the Scarlatina Anginosa, however, is only a less degree of the most common variety of what has been termed the malignant scarlet fever, its pathology shall be more fully explained in the next section.

SCARLATINA MALIGNA.

The Scarlatina Maligna of authors ought not to be described under one indiscriminate form, as has generally been done, since it most unquestionably comprehends three varieties; the first of which is highly inflammatory, the second highly congestive, and the third has certain relations to both of these, because it is attended by venous congestions of the viscera, and by a partial and an impeded arterial re-action. But these varieties shall be separately described, and some remarks subjoined to each, by way of more clearly showing their leading peculiarities.

The first variety of the Scarlatina Maligna, how-

ever highly inflammatory, has several symptoms in common with the Scarlatina Anginosa; and in fact may arise out of the latter, as an effect, from the continued excess of arterial excitement. Nay, when it takes its proper characters at the very commencement, it is to be considered, not different in kind, but in degree only, as already hinted: for then it comes on with rigors; dejection of spirits; pain in the head and back; giddiness; vomiting; and much general oppression. Sensations of chilliness and heat succeed each other, until the stage of excitement be developed; when, as in the other preceding forms, the efflorescence appears, which in general has nothing unusual in its colour, except that it often becomes of a somewhat deeper shade in the progress of the disorder. The fever is intense, and proceeds with impetuosity. Specks, therefore, are soon visible on the inflamed fauces: at first they are of a whitish, afterwards of a dingy ash, and lastly of a brown or blackish colour. But in the most formidable cases, the disease ends mortally before the throat passes through these gradations; and in general it is only when the fever is lengthened beyond the fourth day, that there are ill-conditioned sloughs, with an acrid discharge from them, and from the nostrils. In some instances, however, I have seen deep and extensive sloughs cast off on the fourth or fifth day of the excitement, and in others have known patients expire before they separated. Soon after the stage of excitement is developed, the pulse is rapid and vibratory; there is frequently a very

great determination of blood to the brain, which speedily produces redness of the eyes; intolerance of light; throbbing pain of the head; tinnitus aurium; watchfulness; and confusion of the mind, or delirium. To these symptoms an overpowering but imperfect stupor often succeeds, now and then broken by loud screamings, or by fits of extreme violence or fretfulness. In some instances the head is less powerfully affected throughout, and during the whole stage of excitement, the patient complains most of pain, soreness, and heat, in some of the abdominal regions, accompanied with tension or fulness of the belly; short, quick, anxious breathing; very rapid, small pulse; and considerable irritability and flatulency of the stomach. In other cases neither the head nor belly seem so very decidedly affected as above described; but the greatest oppression appears to exist in some part of the pulmonary system, especially in the trachea. But whatever parts may be disordered, the stage of excitement soon begins to give way, and is followed by that of collapse, in which the heat is diminished; the general powers fail; the pulse becomes weaker and quicker; the skin laxer; the tongue fouler; and the respiration more laborious—in a word, those symptoms called putrid and malignant are now conspicuous. In this last stage patients sink under convulsions, vomiting, or suffocation, according to the organ principally affected. But in whatever mode death approaches, there is always, in the beginning of the disease, a marked and unequivocal stage of

general and high excitement, to which the appearances of extreme debility and putrescency of the last stage may be clearly traced as mere consequences. It is this acutely inflammatory form of the scarlet fever, that Huxham, Heberden, and Cullen have denominated the most malignant; their descriptions distinctly showing, that very great excitement existed in the commencement, whatever degrees of putrescency might accompany the close.

This form of the Scarlatina Maligna so far resembles the Scarlatina Anginosa from the first, that in both the stage of oppression is of an uncertain continuance: sometimes it extends to three or four days, at other times occupies a shorter, and seldom a much longer term; but in general the re-action follows soonest in those cases where there is a manifest fit of rigor. The last remark is perhaps applicable to most febrile diseases. In this form of the Scarlatina Maligna, as in the Scarlatina Anginosa, the danger is not to be apprehended from the first stage; except that in it, short as it may be, more or less venous congestion of the internal parts exists, which may predispose to inflammation in the second or excitive stage, in which there is an emergence of preternatural heat, and of arterial activity. It is, indeed, in this second stage, that the main mischief is generally produced, both in the above form of the Scarlatina Maligna, and in the Scarlatina Anginosa; and these two varieties then differ in nothing but in the degree of their at-

tendant excitement, which is greater in the first than in the last mentioned. Whatever putrid or malignant symptoms may appear towards the conclusion of each, they are simply the products of the previous excitement; and to consider them in any other light will give us most erroneous views of the nature and treatment of both these varieties. In the Scarlatina Anginosa, independently of the sore throat, and the occasional occurrence of pulmonary disorders, there are often early evidences of an affection of the brain, and of some of the abdominal organs. Among these evidences may be enumerated, constant pain, aching, giddiness, or some similar uneasiness in the head; preternatural distention and throbbing of the temporal and carotid arteries, with an increased heat of the forehead and whole hairy scalp; whilst the morbid appearances of the feces soon and clearly indicate the disordered state of the abdominal secretions, and consequently of some of the abdominal viscera themselves. If by any means, whether natural or artifical, the excitement should be timely moderated, the morbid actions subside without deranging the structure of any vital part, and of course the patient is speedily restored to health. But if the excitement should not be moderated, it generally advances until it produces disorganization, and is then succeeded by a fatal collapse. In the Scarlatina Anginosa, the excitement most frequently proceeds into the second, and sometimes even into the third week, before it occasions any mortal lesion. But in the more aggravated

form of the Scarlatina Maligna, as the excitement runs much higher, so it terminates life much sooner, by disorganizing some vital texture. Yet diseases do not always observe the characters attributed to them in books, but change their forms at different periods of their course. Thus, as already intimated, the Scarlatina Anginosa sometimes assumes the appearance of the highly inflammatory form of the Scartalina Maligna; and on the contrary, the violence of the latter may be so checked in its onset, as to cause it to put on the characters of the former. From a cautious survey of the symptoms during life, and from the examination of several bodies after death, I am warranted in affirming, that the brain, the liver, the stomach, the intestines, and the lungs, are the parts most often inflamed; and that the inflammation in these parts is generally the cause of death, together with the affection of the throat. It is imprudent to disregard a particular symptom, which uniformly accompanies any febrile disease; but, on the other hand, it is often equally injudicious to fix the attention so exclusively upon that particular symptom, as to withdraw it from many others. Several practical writers have certainly deceived themselves and their adherents, by considering the throat as the chief topical affection, and by disregarding those internal derangements, which are the constant concomitants of all the more urgent forms of the scarlet fever. It must not, however, be presumed from these remarks, that I mean in the least degree to depreciate an

attention to the fauces. For, on the contrary, I think that they cannot be too narrowly watched, not only with a view to lessen the inflammation there, but to prevent it from spreading to the adjacent parts. It may be remarked, once for all, that whenever the respiration becomes at all oppressed in the scarlet fever, the observation should instantly be directed to the pulmonary organs, and especially to the mucous membrane of the trachea, which is not unfrequently inflamed during the course of this disease. Having thus endeavoured to give a brief exhibition of the pathology of the inflammatory forms of the scarlet fever, I shall pass on to the consideration of the congestive varieties, which will enable me to advert more distinctly to what has been called the Scarlatina Maligna.

There are strictly two congestive forms of the Scarlatina Maligna, one in which the re-action is partially and irregularly developed, and the other in which it is almost entirely suppressed. The lines of distinction between these two forms being very obvious, it is only proper that they should be separately described. The first, therefore, shall be denominated the irregular, and the last the regular congestive form.

The irregular congestive form is the least dangerous, and more protracted of the two; yet it often proves fatal, either from some defect or delay in the treatment, or from the peculiarity of its

nature. It comes on much after the manner of the preceding varieties; but the first obscure stage, in which the sense of chilliness, head-ache, sickness, and lassitude commonly predominate, is almost always longer, and the following one of excitement much less perfectly displayed. Indeed, in the second stage the heat is principally concentrated about the trunk and upper portions of the thighs and arms, while some part of the wrists, hands, ankles, and feet, is often cool, or at least of the natural temperature. The excitement, too, varies in the course of the day. During each increase of fever the rash becomes more florid, and fainter as the re-action subsides; both the heat and colour of the skin undergoing correspondent changes to these temporary exacerbations and remissions. The patient sometimes complains of preternatural heat, and sometimes of preternatural coldness,; and occasionally of the latter, when the trunk feels hot to the touch of another person. The throat is always more or less red and swollen, after the occurrence of the stage of imperfect excitement; and specks or sloughs generally appear in a few days. In every modification of the scarlet fever, with the exception of the regular congestive, the state of the fauces is almost always proportionate to the degree of fever; and as the excitement is less uniform and intense in the irregular congestive, than in the inflammatory forms, so the throat is in general less powerfully affected. Although the sloughs, commonly, be neither so deep nor so

extensive, as in the inflammatory forms of the scarlet fever, yet the throat is liable to put on a gangrenous appearance, sometimes so early as the end of the first week, but far more frequently not until the second.

It may be remarked, by the way, that, however striking may be the relation between the conditions of the throat and of the pyrexia in the scarlet fever, a similar relation does not so generally prevail between the conditions of the efflorescence and of the throat; for there is sometimes a considerable affection of the latter, when the former is partial, and even evanescent. But to resume the description. In the irregular congestive form, the efflorescence is neither so much diffused, nor of so vivid a colour, as in the simple and inflammatory modifications; and it is, besides, much more liable to disappear, and to leave a sickly pallidity of the face. Nor are the lips and edges of the tongue of so bright a red, as in the two last mentioned varieties. Soon after the attack, the mind often labours under dejection or alarm, which is strongly depicted on the countenance; but sometimes the patient is in a state of dulness, confusion, or indifference, and the eyes are then vacant, and the pupils dilated. Yet in some instances, the intellect remains clear for a time, though uneasiness is always felt in the head, and often a load or anxiety referred to the region of the heart. Delirium is not very common at the onset, but it very often appears after-

wards, and is generally a conspicuous symptom in the advanced stage. The stomach is flatulent; the belly irregular; the epigastric region frequently somewhat fuller than usual; and the stools are always unnatural in colour and smell, indicating either a morbid or deficient secretion of bile. The pulse is low and oppressed in the first stage, and it rarely acquires much firmness or fulness in the second, though it is then quick and variable. In its natural progress, this form of the scarlet fever is often protracted to the end of the second week, and occasionally much longer. When it ends successfully, the recovery is frequently very slow, on account of the great collapse which succeeds to the state of imperfect excitement. If it be not actively treated soon after the attack, there are, for the most part, symptoms which indicate some serious affection of the brain, liver, stomach, or of other important parts; and if these symptoms should not be speedily arrested, they may gradually or suddenly become much aggravated, and at last terminate life by coma, or low muttering delirium; by vomiting and purging; or by apparent suffocation. Towards the conclusion of such cases, there are frequently appearances of a dissolved state of the blood, as inky petechiæ, oozings of black gore from the nostrils, and the like.

The scarlet fever which appeared among the children in Heriot's Hospital in the autumn of 1804, was a degree of the irregular congestive

form ; and would doubtless have proved very fatal, but for Dr. Hamilton's great attention, and judicious treatment. It appears from this author's concise but perspicuous history of the fever, that the symptoms were at first *apparently* mild. The throat was so little affected, that the uvula and amygdalæ were only slightly swelled and inflamed ; and superficial suppuration and sloughing only existed in a few cases. The cutaneous efflorescence was partial, mostly transitory, and left the countenance peculiarly pale ; the eye was dull and heavy, the thirst moderate, but the debility great. Sickness and prostration of appetite continued throughout the disease, and in some there were peculiar dejection and despondency hardly to be expected in such young subjects. The surface of the body was only *occasionally* of a pungent heat. The bowels were obstinately constipated, and the stools mostly black or greenish, and fetid, though sometimes less offensive, and of the colour and consistence of clay. The pulse was variable, never full, but always quick, except towards the end of the complaint, when it sometimes became slower than natural. The patients, Dr. Hamilton informs us, were the objects of his serious attention for twelve or fourteen days, and even six weeks elapsed before some of them left the sick-room. The danger in this epidemic obviously depended, not on the state of the throat, but of the internal parts, the congestions of which prevented the free emergence of the fever, and especially affected the functions of the liver and

intestines. That excellent author has reported the cases of three boys, who recovered from the fever, and who, in two or three weeks from their convalescence, were attacked with dropsy, to which they all rapidly fell victims.* Similar cases have come under my care; and it has indeed always appeared to me, that *fatal* dropsies are far more liable to supervene the congestive, than the other varieties of this distemper.

The irregular congestive differs from the inflammatory modifications of the scarlet fever, first, in generally having a more protracted stage of oppression; and, secondly, in having a less perfect development of excitement afterwards. The danger in this form may be three-fold,—from the partial congestions about the large internal veins, from the unequal distributions of blood to different viscera in the capillary arteries, and lastly from the affection of the fauces. The congestions, however, of the first stage are not so considerable as to occasion any *immediate* mischief; though they pave the way to future lesions in the organs affected, and predispose them to be more readily influenced by the irregular distributions of blood, which attend the stage of defective excitement. Hence we find, that visceral engorgements and gangrenes are more frequently the cause of death than the disorder of the throat; at

* See Appendix III. p. 66, of Observations on the Utility and Administration of Purgative Medicines in Several Diseases. By James Hamilton, M.D. Fourth Edition. Edinburgh: 1811.

least repeated observations and dissections have led me to this conclusion. In this form, the brain and liver are the organs which generally suffer most; although, on examination after death, there are sometimes vestiges of low inflammation or of gangrene in other parts, especially about the stomach, intestines, fauces, and mucous membrane of the trachea. So much for the character and pathology of the irregular congestive form of this disease.

The regular congestive form, next to be examined, so oppresses the vital functions in the first stage that there is then still greater internal remora of venous blood, and less internal and external re-action of the arteries than in the forementioned variety. The subjects of this modification are for the most part suddenly attacked. They become pale, faint, and sick; and chiefly complain of pain, load, or giddiness in the head; extreme oppression; and much uneasiness in the region of the heart, or at the pit of the stomach. Sometimes they at once sink, as if overcome by an uncommon shock,* and lie in a state of confusion and oppression, without making much complaint. At other times, they walk about pale and

* The lower orders of society, who generally speak in a highly figurative language, in describing the attack of such cases, have sometimes told me, that the patient dropped down as if he had been shot through the head, or struck by lightning. This was clearly an exaggeration; but at the same time it showed how deeply their imaginations had been impressed by the singular and striking mode of the attack.

languid for two or three days, and then take to their beds, like persons completely worn out by some great fatigue, or mental anxiety. When the attack has once decidedly occurred, the respiration is either quick and anxious, or slow and impeded. There is often a mixture of livor and paleness in the face; the eyes are frequently dull, but sometimes glairy, and they acquire a fatuous or an inebriated expression in the course of the disease.

The mind, at first alarmed, confused, or dejected, soon becomes disordered with delirium; or an indifference to surrounding objects, and a stupor, succeed, under which patients finally expire. From the beginning the pulse is generally low, impeded, and irregular, and commonly continues so to the last; but in those cases where there is a very slight degree of re-action, it sometimes has a short and rather a sharp feel for a certain period, and at last grows weak and undulating. At first the tongue is commonly whitish in the middle, paler than natural, and covered with a slimy saliva; but towards the close it often becomes rough and darkish, and the breath is then usually offensive. The bowels are commonly distended with flatulency, constipated or irregular in the first stage, but frequently loose in the last. The feces are sometimes darker, at other times lighter than natural. The stomach is often extremely irritable; yet occasionally it retains every thing that is taken; though the deglutition be-

comes more difficult as the disease advances. This form of the scarlet fever frequently runs its fatal course in two, three, or four days, from the occurrence of the extreme general oppression; and there are almost always appearances of putridity in the last stage, such as oozings of blood from the mouth or nostrils, dark hemorrhages from the bladder or bowels, inky petechiæ, or gangrenous spots upon the skin. A few hours before death there is often a superficial glow of heat diffused over the body, accompanied with a darkly flushed face; high breathing; accelerated pulse; and partial or general sweats. But this mere semblance of excitement soon subsides: the extremities grow cold; the face assumes a cadaverous hue; and where the skin is pale it often has almost the smooth, waxen appearance of the surface of a corpse.

In this regular congestive form, the efflorescence is from the first of a purplish or copperish hue, and deepens as the disease advances. Sometimes it quickly recedes without ever returning again; a circumstance which, though not peculiar to the congestive modifications, is most liable to occur in them. In some very rapid and fatal cases of the form under consideration, the throat is but slightly affected; yet in the instances which continue beyond the fourth day, there are generally specks or sloughs in some part of the fauces; and I have witnessed those appearances when there had been previously little or no constitutional excitement. This fact seems to prove, that local inflammation

may exist under the severest modifications of congestive disease; and it also forms an exception to an assertion formerly made, that the affection of the throat is generally proportionate to the degree of constitutional excitement in the scarlet fever. But notwithstanding the above remark, relative to the throat, it is very doubtful whether the inflammation existing there, would of itself pass into gangrene, uninfluenced by the condition of the internal organs, and of the general system; for the fauces usually do not assume an alarming appearance, until the disease is protracted to the fourth or fifth day, or until the vital energies evidently begin to fail. The affection of the throat, abstractedly considered, is perhaps rarely the cause of death. In what parts then, it may be asked, are the principal derangements to be sought in this form of the scarlet fever? It may truly be answered, in venous congestions of the brain, liver, spleen, lungs, or of the vessels about the heart; for if these congestions be not timely removed, they produce an universal collapse, and visceral disorganizations, and also tend to change the constitution of the blood itself. In four mortal cases of this form, after death the brain and liver were found engorged with grumous blood, and the large vessels in the vicinity of the heart much distended; with some loose and large coagula in the right cavities of that organ, while the left auricle and ventricle were empty and partly collapsed; and it may be here remarked, that in most diseases of the strictly congestive character the right sides of the heart will be found much distended with

blood after death. There was in one of the above cases an appearance of gangrene in the throat; but in the other three, which ended on the second day, the traces of disorder were comparatively slight in that situation. Dr. Currie, in alluding to this form of the Scarlatina, mentions that the heat does not rise much above the standard of health; and on this ground seems to think, and rightly too, that the cold affusion is not applicable. In those cases which have fallen under my care, the heat has generally been rather somewhat below, than somewhat above the natural point; and where the central parts have been warm or hot, the extremities have mostly been cold. It is deeply to be lamented, that this enlightened physician did not more independently pursue the investigation of so obscure a variety of the scarlet fever; for had he done so, there can be no doubt but he would have deviated from the beaten track of error. He acknowledges, with his accustomed candour, that all remedies had been equally unsuccessful in his hands; and this was not surprising, since the chief of those remedies were cinchona and wine, and since even he has so blended the symptoms of the first and last stages together, as to persuade himself, that this form is highly putrid from the very commencement.* Yet if accurately attended to from the first attack, it will be found, that the signs of putridity or ma-

* See Vol. II. p. 43, 44, of Medical Reports on the Effects of Water, Cold and Warm, as a remedy in Fever and Febrile Diseases. By James Currie, M.D. F. R. S. London: printed for T. Cadell and W. Davies. 1805.

lignancy do not constitute a primary and essential part of this form, but are purely the consequences of excessive congestions; for if we can remove the congestions in the beginning, we most certainly prevent the occurrence of putrid or malignant symptoms. It is only from a cautious and repeated survey of febrile diseases from their onset to their termination, that their real nature can be known; and opinions principally deduced from the phenomena of the advanced stages, are as erroneous in theory, as they are dangerous in practice. The whole result of my experience in febrile diseases, has fully convinced me, that wherever there are appearances of malignancy in the last stages, these appearances have always been wrought by visceral inflammations, or visceral congestions, in the first stages. If this observation be more forcibly applicable to one febrile disease than another, it is to the highly inflammatory and to the highly congestive variety of the scarlet fever.

In the open forms of fever, where heat and arterial re-action are universally developed, the danger is to be estimated by the degrees of the general excitement, and of the topical determinations; whereas in the masked or congestive forms of fever, the danger is proportionate to the defect of the excitement, and to the extent of the local accumulations of venous blood. Arterial excitement is an excess, venous congestion a deficiency, of natural action. The first is most liable to occur in constitutions of a high tone, the last in re-

laxed or torpid habits; but there are exceptions to this remark, since the applied cause may be so slight as to rouse a feeble frame into re-action, or it may be so severe as to oppress a vigorous one into perfect and overpowering congestion. The extremes of excitement and of congestion appear to be more common in tropical than in temperate climates; and hence the great danger of the most concentrated attacks of the bilious remittent fever, which are either highly inflammatory, or highly congestive. In Great Britain, we most frequently witness fevers of excitement, though those of congestion have not been sufficiently marked or investigated. The attention of the medical public has been too exclusively directed to the phenomena of the arterial system; but it is to the venous system that we must look for the foundations of many important diseases. From the whole tenor of these remarks, it will be readily perceived, that the irregular and the regular congestive varieties of the Scarlatina Maligna may occasionally change their character; since any cause which tends to lessen the venous fulness of the viscera may create the perfect re-action of the simple or of the inflammatory varieties. But as each of the modifications of this disease most commonly begins and proceeds in its peculiar characters, they all have been singly noticed; and as the descriptions were drawn from an extensive observation at the bedside of the sick, it is hoped, that they will be found correct in the most important particulars.

Before concluding the history of the scarlet fever, there is one circumstance, to which I cannot refrain from pointedly adverting, and it is simply this:—when that disease prevails epidemically, children and even adults, some time after exposure, now and then die suddenly, from the operation of the contagion, without any appearance of efflorescence or of sore-throat. They are attacked with convulsions, or with the symptoms of apoplexy, and frequently sink into insensibility and death in a few hours; and therefore, properly speaking, such instances are but increased degrees of the regular congestive variety. No author, with whom I am acquainted, has noticed this the occasional effect of the contagion of the scarlet fever; but as it took place casually during an epidemic, witnessed some years ago, I have deemed it a duty to record it here. Occurrences of this kind, it is well known, are not uncommon in the plague: and perhaps they happen oftener in the contagious fevers of this country than we are at present aware; at least they are not limited to the contagion of this particular fever, but now and then follow that of the measles, and of typhus. It now remains for me to attempt their explanation. One of the first obvious operations of contagion, like that of cold, is a change of action in the cutaneous vessels, and a recoil of blood from the surface towards the centre. But contagion also produces, directly or indirectly, a peculiar effect on the nervous system, which is chiefly evinced in the disturbed functions of the brain and of the

stomach. The change of action in the cutaneous vessels, the recoil of blood towards the centre, the want of sensorial power, and the disorder of the stomach, all concur to oppress the heart and the arteries; and we accordingly find, that the arterial circle every where beats more languidly than natural, a superabundance of blood being accumulated about the right side of the heart, and in the larger internal veins. Now this venous accumulation is sometimes so great as to overwhelm the functions of the brain, lungs, liver, or heart; and the last mentioned organ collapsing, the usual interchanges of blood between the venous and arterial apparatus are carried on no longer, and the death of the whole system necessarily ensues. In general, however, the venous congestion is not thus mortally overpowering at once, but rather of such inferior degrees as to rouse at least into some resistance the latent energies of the heart; and indeed it most frequently happens that a tone is at length acquired, which gradually extends throughout the whole arterial circle. The stage of re-action, therefore, whatever may be its final tendency, is immediately beneficial. Whenever the stage of re-action is not partially or perfectly developed in febrile diseases, the danger is instant and imminent. Most sudden deaths arise from great venous congestions. It cannot be doubted that venous congestions are *cæteris paribus*, more dangerous than arterial re-actions; because, as the former are more rapid, and also more difficult to remove, so the latter relatively give longer time

and greater facility for medical aid, nay, sometimes spontaneously subside into health. Arterial re-action is the mean by which nature preserves the human frame from the sudden and dangerous shocks of venous congestions. As it is the business of the physician to attempt the removal of venous congestion, when it impedes or prevents re-action, he ought also to moderate arterial excitement, when excessive; for as the congestion may be immediately, so the excitement may be ultimately fatal. But these points will be more properly illustrated in the treatment; and I shall now only further observe, that in three unfavourable cases, which followed an exposure to the scarlet fever, and which assumed an entirely apoplectic appearance, the brain and liver were found much, and the lungs moderately congested with venous blood.

From all the preceding remarks it should appear, first, that the Scarlatina Simplex is generally an affection of slight excitement, which now and then, however, passes into the Scarlatina Anginosa; secondly, that the Scarlatina Anginosa and the first form of the Scarlatina Maligna are not only connected with sore-throat, but with an excitement that may arise into sub-acute or acute inflammation; and thirdly, that the two congestive forms of the Scarlatina Maligna are combined with less or more venous fulness, and the one with only a partial, and the other with an almost total want of excitement in the arteries. It is indeed to the

different degrees of excitement, and of congestion, that all the modifications of the scarlet fever owe their pathological peculiarities, and that some of them are mild, others moderate, and the remainder severe. Hence it must be evident, that the rules of treatment should be as various as the characters of this disease, and these rules shall now be concisely demonstrated.

TREATMENT OF THE SCARLATINA SIMPLEX.

The treatment of most febrile complaints is founded upon the same or similar principles, in that notable stage of oppression, which invariably precedes the re-action or the hot stage which we strictly denominate fever. The first stage of oppression is a struggle between the innate powers of the body and the morbid cause: and therefore the practitioner ought to assist the efforts of nature in the first place, and to moderate them in the second, should they become greater than is necessary. If it be asked, what is meant by the efforts of nature, it may be rejoined, that their essence consists in the tendency which there is in the system to return to the long established actions of health; and we see this tendency conspicuously displayed in many diseases, though it may itself be ultimately productive of disorder, as already shown in speaking of the quality of re-action. Numerous writers on fever have re-echoed the opinion, that the excitement in the hot stage is in a ratio with the cold and rigor in the first stage,

here termed that of oppression: but it would be far more correct to say, that the degree of re-action in the hot stage is in a ratio to the degree of internal congestion in the first stage, except where that internal congestion is so extreme as wholly to overpower, or greatly to depress, the *vis insita* of the system. Yet as the signs of congestions in the stage of oppression are not uniformly the measure of the degree of the congestions themselves, it always becomes us to act with the greatest circumspection on the first appearance of the precursory symptoms of fever; and we should not, as is too generally done, leave them to proceed uninterruptedly, until all doubt of the abstract nature of the disease be removed, by the subsequent occurrences. It should be repeated again and again, that most of the rudiments of danger in fevers are laid in the first stage of oppression, and if we can alleviate the symptoms of that stage, we thereby usually insure a most favourable issue. This is beginning to attack diseases earlier than is generally recommended; but the force of remedies is then often far the greatest, since the morbid actions are but just engendered, and yield sooner than when they have acquired a determined mode and character from continuance. For some years past it has been my study to attend closely to the first indistinct stage of febrile diseases; and the sum of my observations is, that proper remedies applied at that period, at least, always render their course more moderate than it would otherwise have been. Hence whenever the scarlet fever has prevailed, I

have directed parents to watch narrowly over their children, that they might inform me of the very first signs of the operation of the contagion: when called thus early, while paleness of the face and skin, head-ache, sickness, and lassitude, were perhaps the predominant symptoms, I have found a brisk purgative first, an antimonial emetic next, and the tepid bath last, of the most essential service: in fact, they free the system from the pressure of the plethora of the internal blood-vessels, equalize the whole circulation, and thus most frequently render the future case mild and manageable. Sometimes a combination of the tartrate of antimony with the sulphate of magnesia, or of the pulvis antimonialis with calomel, will rapidly reduce the heat and quickness of the pulse, by acting as an emetic and a purgative at the same time; and the efficacy of one or other of the above compounds is often exceedingly great in most incipient fevers of simple excitement, where the stomach has not been previously irritable. When the head or some other internal organ has appeared to suffer more than ordinary pressure in this stage of the simple Scarlatina, I have first put the patient into a warm bath, strongly impregnated with salt; and immediately afterwards have either applied a few leeches near the part most affected, or taken a *very little* blood from the arm. This practice, assisted by a brisk purgative, has, in general, not only given immediate relief, but powerfully contributed to moderate the subsequent re-action. In the slighter congestions of the first stage, the

milder plan will generally answer every purpose; yet in cases where the symptoms are suspicious, there need be no hesitation about abstracting a *little* blood, the warm salt bath being premised to stimulate the torpid surface. At this early period, and under these circumstances, large bleedings ought to be avoided, as they are often extremely prejudicial on the very first shock of the disorder. When the re-action is once fairly developed, we estimate by its degree, by the affection of the throat, and by the state of particular organs and of the general system, whether the fever be strictly the Scarlatina Simplex; and even if it should be found of that form, the sooner the excitement is restrained the better; for if left alone, it might sometimes pass into the Scarlatina Anginosa, and finally derange some vital part. In very young children the excitement of the simple scarlet fever is more especially to be checked; as in them it sometimes directly affects the brain, or indirectly, through disordering the functions of the thoracic or abdominal viscera, and eventually leads to convulsions.

For the above reasons, therefore, when the reaction emerges in the simple scarlet fever, the tepid affusions should be used four or five times in twenty-four hours, and an active aperient daily, with rest, ventilation, cleanliness, a bland liquid diet, and such measures will be all that are requisite. In the stage of collapse, which is usually very slight, milk, light animal broths, and similar arti-

cles, should always be preferred to wine and cordials; because they restore the strength much sooner, without the risk of creating any secondary fever. Nor is this a matter of such small importance as it may at first sight appear; for it must be remembered, that it is generally a disease of young subjects, who even after its decline are often easily excited into fever by strong stimulants. There are certainly examples on record, where large quantities of wine have been given without apparent prejudice, if not with advantage, about the decline of the scarlet fever. Where the collapse is extreme, and unconnected with local lesions, such a treatment may sometimes be beneficially pursued. Yet in the greater part of febrile complaints, it is frequently quite unnecessary in the last stages, in which it may often occasion more mischief than advantage. Some cases of what has been termed hydrocephalus internus have followed the simple scarlet fever in my practice, which seemed to result from the administration of wine in the last stage; and I have seen low inflammations of the chest and abdomen induced by the same cause, finally leading to dropsies of those regions. After recovery from the simplest forms of fever, the circulatory system is in a very susceptible state for some time; and if there be anywhere a tendency, constitutional or acquired, to increased action, the administration of cordials is almost certain to produce an actual inflammation in that part. In strumous habits, this irritable state of the circulation is more particularly conspicuous, and in them

enlargements of the internal and external glands are then readily induced by the free employment of wine. In short, the pernicious effects which so frequently result from this excitant, have long since made me abandon its exhibition altogether in children recovering from fever. Mild fresh ale has been my substitute, where any stimulus has been thought necessary for them: it excites much less than wine, and often tends to restore the tone of the general habit, and keep the bowels moderately open.

After the cessation of the simple scarlet fever, the desquamation of the cuticle will be much accelerated by the occasional use of the tepid bath, which is likewise a good preventive of those hydropic swellings, which may follow the mildest attack. But the best way to guard against such distressing consequences is to avoid stimulants, to keep the bowels daily open, to confine the patient within doors for several days after his complete recovery, and when he goes abroad to order him some additional clothing. These precautions should be particularly enforced when the disease has been mild; as in such cases the relatives of children are generally thrown off their guard, never anticipating the chance of any secondary disorder. Several cases of dropsy, which I have seen follow the scarlet fever, could be traced to hasty and imprudent exposures to a cold or changeable atmosphere. The duration of the confinement within doors ought of course to be greatly regulated by the

state of the weather, and may always be shorter in summer than at any other season of the year.

The hair generally comes out on the abatement of every form of this disease; and if the head be not shaved, it neither looks nor grows well afterwards. But if the scalp be shaved two or three times, and repeatedly washed with warm water, when the patient is recovering, it will frequently, I believe, grow and look as well as it did formerly. Nor ought the preservation of the hair to be deemed unworthy the attention of a medical man; for, independently of contributing much to the beauty of the form, it serves to protect the integuments of the head from the influence of cold, and to lessen the force of accidents. When, however, the scalp is shaved, especially in cold weather, it should always be kept moderately warm afterwards, by flannel or some similar covering; since to the neglect of this precaution, I have sometimes traced severe head-aches, and occasionally even more serious affections of the brain.

TREATMENT OF THE SCARLATINA ANGINOSA.

As in the simple scarlet fever, the treatment of the first stage of the Scarlatina Anginosa should consist in brisk purgatives, a mild emetic, the warm bath, and bland tepid diluents; unless there be decided marks of visceral oppression, and then, as an additional measure, a little blood should be drawn. As soon as the stage of excitement be-

comes apparent, by the whole surface being morbidly hot and dry, the cold affusions should be promptly employed, and repeated, for the first twenty-four hours, as often as the burning heat and dryness of the skin return. In several cases I have seen this disorder completely arrested, by five or six repetitions of the cold affusion, used on the first day and night of the excitive stage. In the beginning of this modification it can hardly be said, with the exception of the throat, that any one part is positively inflamed; though there are evidences of unequal distributions of blood in different quarters, and an elevation of arterial tone, which clearly indicate an approach to actual inflammation. It has repeatedly struck me, that the great utility of the cold affusions consists, not so much in directly abating an existing topical inflammation, as in removing or diminishing that general excitement of the heart and arteries, by the continuance of which topical inflammation may be produced or prolonged. Hence their great efficacy at an early period of the second stage of those idiopathic fevers, in which the general excitement occasions or increases local irregularities in the circulation.

According to my observations, however, it is only within the first three days of the stage of excitement, in this variety of scarlatina, that the cold affusion will generally be of the most decided benefit; for though they may sometimes alleviate urgent symptoms when the re-action has continued

longer, they will rarely extinguish the pyrexia, as at an early period. When those febrile diseases which are called idiopathic have advanced beyond a certain term, they seem to have a sort of determinate duration; at least our remedies have then less influence, so that they rather moderate than at once subdue the fever. If depended on singly, in the first, second, or third day of the stage of excitement, the cold affusions will not always succeed, as reiterated trials have enabled me to prove. On the whole, the advantages of this valuable practice have been too highly estimated by Dr. Currie and some of his followers, in the scarlet fever. But in venturing upon this assertion, it is not meant to cast the slightest imputation on the memory of that excellent physician, whose labours deserve to be consecrated by a national monument. Yet such is the tendency of human nature to generalize too far, that when an useful discovery has been made in physic, its powers for the most part have been much overrated, especially by the person who first brought it decidedly into public notice and repute. This indeed might naturally be expected. The consciousness of having extensively benefited mankind tends to create an exalted enthusiasm, which overlooks many probabilities of failure, and anticipates little else than continued success.

Having often been disappointed when I trusted to the cold affusions alone, it has for some time past been my established practice, to use them in

conjunction with active purgatives, in the Scarlatina Anginosa. Experience has fully satisfied me, that these measures are far more efficacious unitedly than separately applied, during the first, second, and third day of the stage of excitement. After the last mentioned period, it will generally be much better to omit the cold, and to use the tepid affusions, which may be daily continued with the purgatives through the whole of the second stage. Some judicious practitioners of my acquaintance entirely confide in the tepid affusions and purgatives; and the great success, which I have repeatedly witnessed from this treatment, warrants me in giving it a strong recommendation, in this variety of the scarlet fever.

The late Dr. Clark, of Newcastle-upon-Tyne, was an advocate for the warm bath in the scarlet fever. It may be employed, whenever the tepid affusions are suitable, and possesses some great advantages over them in the congestive forms of this complaint, as will be shown in discussing their cure. The tepid affusions, to be efficient, should be used six or eight times every twenty-four hours, during the stage of excitement; and the purgatives also should be then so administered as to produce four or five very copious motions in the day.

It is recommended, by high authorities, to exhibit cathartics during the day, that, the bowels being opened before bed-time, the patient may have a respite from their operation throughout the

night. Greatly as I respect some of those authorities, I cannot implicitly subscribe to this special recommendation. It is certainly highly adviseable to get the bowels freely moved before bedtime: but why should the purgatives always be omitted in the night? It is at that period, that the febrile exacerbation is commonly present, and therefore the practitioner should not allow it to proceed unimpeded: on the contrary, he ought to strive to lessen its intensity and duration, and this may often be most effectually done by using both the tepid affusions and purgatives freely during the night. When this treatment is pursued, it will be found, that the patient generally falls into a quiet sleep about the period of the morning remission; whereas if it be omitted, he will usually pass an uneasy or a watchful night, and be restless the greater part of the next day. It is too common a practice to administer little or no medical aid during the night, in most idiopathic fevers. But in certain cases, the loss of so much time may be dangerous, if not fatal to the patient; for if the excitement should run high at that time, and not be reduced, it may give rise to topical inflammations of the viscera, which no subsequent care can remove.

It has already been hinted, that the affusions alone may fail in curing the Scarlatina Anginosa; and this is sometimes the case, though rarely in comparison, even when they are, cold or warm, jointly employed with active purgatives. In such

untoward cases, morbid dissection will almost invariably show, that inflammation of some of the viscera, as well as of the throat, was the cause of death. When, therefore, the cold or tepid affusions and purgatives do not afford relief, the practitioner may be sure that there is some latent inflammation present, and should endeavour to detect and remove it, without loss of time. In several cases of this nature, minute investigation has satisfied me of the existence of visceral inflammation; and moderate venesection has been used with the most admirable effect. The crassamentum of the blood drawn was always covered with a buffy coat. When symptoms of *a sub-acute* visceral inflammation appear on the second, third, or fourth day of the second stage, there need commonly be no hesitation about general blood-letting, provided it be used soon after those symptoms apparently originated. But when the visceral inflammation has been permitted to advance for several days without resistance, or when it arises about the sixth or seventh day of the second stage, it often becomes a delicate point to determine whether the lancet should be employed. If there be appearances of universal collapse, and of an approach to gangrene in the throat, all thoughts of bleeding ought to be abandoned. But if, on the contrary, there be neither appearances of universal collapse, nor of approaching gangrene in the throat, general or local blood-letting may sometimes be safely and even advantageously used under the circumstances here

considered. In such examples, the question is simply this—Whether is there greater danger to be apprehended from the inflammation, or from the depletion? Visceral inflammation has almost invariably a natural tendency to terminate mortally. Depletion produces debility only, and debility alone is rarely the cause of death in fever. As there is, in this stage, more danger from the inflammation, than from the depletion, an attempt ought to be made to arrest the inflammation, whencesoever it may proceed, or wheresoever it may be situated. When, by the long continuance of the inflammation, or the extreme delicacy of the patient, I have been deterred from general venesection, it has been usual with me to order several leeches near the region of the topical affections; and considerable benefit has often resulted from this practice, especially when it has been followed up by purging and the warm bath. In such cases, blisters are sometimes beneficial, in conjunction with the means above mentioned; but they should seldom be applied in the advanced stage of the disease, as they then not only produce much general irritation, but are sometimes succeeded by a gangrene of the part to which they had been applied.

It is fortunate for the practitioner who has an early opportunity of trying venesection, as he then possesses the power of fairly demonstrating its efficacy; but it is mostly painful to him to be compelled to venture on this measure late in the dis-

ease, when the probabilities are against any plan that may be adopted. No man should practise physic, who is not at all times fully prepared to risk his professional reputation to the chance of saving his patient's life. In cases like those now contemplated, it is often almost certain that the disease will end fatally, unless it be arrested or moderated by some prompt application. Under circumstances so delicate and so trying, personal expediency might suggest to the physician to shelter himself under a cautious prognosis, and to avoid risking his character by measures which may make an immediate impression: but in contravention to this cold and selfish doctrine of expediency, there is, indubitably, a right and a wrong in human conduct, independent of consequences; and that which we know and feel to be our duty, we ought always steadily to pursue, even if it should expose us to open censures, or to secret insinuations. We cannot always command success, even in the most promising cases; and where we fail in doubtful and dangerous ones, the best consolation is, the consciousness of having done our utmost. Yet there is a point which, if once past, renders the employment either of general or local bleeding more hazardous than its omission. Whenever, therefore, the practitioner has just reason to dread that the general powers of the system might sink under the loss of blood, he should determine to trust to purgative medicines, combined with frequent doses of calomel, and the use of the tepid affusions, or of the tepid ablu-

tions; and it is only candid to acknowledge, that these measures will sometimes succeed under a concourse of symptoms which seem all but desperate.

When the Scarlatina Anginosa is efficaciously checked within the first three or four days of the second stage, ulcers very seldom form in the fauces. But when the force of the disease is not broken by the fifth or sixth day, the throat is commonly more or less affected with the well-known, peculiar, sloughing sore. Gargles of the sulphuric, nitric, or muriatic acid, or of lemon juice, properly diluted with water, are sometimes useful, not only in cleansing these sores, but in clearing the fauces from viscid matter; and where they have not produced the desired effect, I have rarely hesitated to order mild emetics, provided no evidences of abdominal inflammation existed. In fact, emetics are far the best gargles, where the throat is much obstructed from an accumulation of tenacious mucus; their operation effectually dislodges that morbid secretion for a time, often greatly relieves the respiration, improves the appearance of the ulcers, and may even prevent an attack of cynanche trachealis, as well as lessen the chances of the inflammation in the throat extending along the Eustachian tube to the internal ear. They may be repeated, the above caution as to the abdominal inflammation not being disregarded, at any time during the continuance of the fever, when the respiration or deglutition is much impeded by ac-

cumulated phlegm: but since I exhibited purgative medicines freely from the commencement, I have seen infinitely less of those foul sloughing sores in the throat, and have therefore had comparatively little occasion to prescribe emetics. And it may be here also remarked, that nothing contributes so much to preserve the structure of the internal ear from derangement, as the early and continued use of aperients: almost all the aural discharges of pus which I have seen follow the scarlet fever, occurred in cases where free alvine evacuations had not been daily procured.* Where gargles are deemed necessary for the throat of young children, they should be injected by a syringe, since they can seldom be used by them with advantage in the ordinary way; and whenever the fauces are much loaded with phlegm in such subjects, the most assiduous care should be taken, day and night, to keep the breathing as free as possible. From an ignorance of the necessity of so constant precautions, I have known some patients suddenly lost in convulsions; and once saw an only child who died in that mode, while the nurse had fallen asleep. Impediments

* When a discharge of pus from the ear follows the scarlet fever, all that is necessary, as a local application, is to keep the part clean by occasionally syringing with tepid water; for medicated lotions do no good, and the cure must chiefly depend upon a strict attention to the digestive organs, which are always disordered in such affections, and the correction of which, by mild aperients, the blue mercurial pill, fresh air, regular exercise, and a simple diet, will often have the happiest effect upon the ear.

to the respiratory functions are in general more speedily fatal to infants, than to those more advanced in life; either from at once producing suffocation, or from sympathetically disturbing the brain, the last of which effects is perhaps more frequent than the first.

In the early part of my practice, I gave wine with much freedom in the advanced stages of almost every form of this disease; but I gradually and most satisfactorily ascertained, that brisk and repeated *purgatives* in the first and second stages, and *laxatives* in the last, best removed the depression of strength, and rendered the use of wine far less necessary. Indeed wine should never be exhibited in the first and second stages; and only in the third when there is an urgent debility. The diet should be of the lightest kind in the first and second stages, such as barley water with lemon juice, or milk whey. In the last stage, milk and water with a little arrow root, chicken broth, or beef tea, may generally be allowed. If any diffusible stimulants have been deemed requisite on the supervention of the stage of collapse, moderate quantities of mild fresh ale have often proved much more efficacious than wine, but particularly in children, who are so easily excited. In some instances, however, where the collapse was very great, I have given, at certain intervals, equal portions of Madeira wine and milk, with unequivocal benefit. But when wine is ordered, its effect should always be minutely observed, as

was advised in typhus; and whenever it augments the fever, it should be abandoned for some less powerful excitant. In a state of convalescence, wine should hardly ever be allowed; for it then tends to re-produce general excitement and topical accumulations, which may lead to fatal inflammations, or to dropsies of some of the visceral regions.

In summing up the treatment of the Scarlatina Anginosa, it may be added, that if purgatives, aided by the cold or warm affusions, be properly exhibited from the beginning and during the advancement of the excitement, it will seldom be necessary to recur to bleeding in the second, or to wine in the last stage; for the combined influence of these expedients, with an antiphlogistic regimen, most frequently so diminishes the general and the local excesses of the arterial system, as alike to ward off inflammation and debility. The publication of Dr. Hamilton's excellent work on purgative medicines has been doubly beneficial. In the first place, it removed many absurd fears and prejudices, and clearly showed the utility of purging in several diseases; in the second place, it insensibly led us to push cathartics, with increased advantage, further than he had recommended, in the first stages of many highly acute distempers. Those physicians, whether practising in temperate or in topical climates, who have tried large and repeated doses of calomel, must be fully convinced of their superiority in the onset of ar-

dent fevers; but in no febrile disease do they seem of more decided benefit than in this, when daily determined to the bowels by some other auxiliaries. Confident in this important fact by numerous observations, I have not hesitated to prescribe calomel boldly throughout the whole stage of excitement, always accelerating its operation by jalap or rhubarb, with moderate doses of the sulphate of magnesia; and it is somewhat remarkable, that though I have given from six to eight grains of this mercurial to children, twice, thrice, or even four times in twenty-four hours, yet I have not once seen ptyalism supervene. It must, however, be observed, that I have never continued the use of the calomel beyond the decline of the stage of excitement in favorable cases, having always in them employed milder measures from that time. Decisive practice is only necessary during the urgency of the pyrexia, and it is the height of empiricism to continue it indiscriminately throughout all stages; nay, such a procedure is almost always more dangerous than beneficial, and is calculated to bring the best remedies into disrepute. If we suppose, that the action of medicines is the same in disease as in health, we shall often be egregiously mistaken, and particularly in respect to calomel; because a few grains of that preparation will usually affect the mouth in health, whereas in fevers attended with a hot and dry skin, we may give full and repeated doses without producing any such result. The operation of almost all medicines is materially

modified by the state of the system at the time of their exhibition; so that small doses may at one period suffice to induce some desired end, and at another it can hardly be accomplished by large and often renewed doses. It is still too much the fashion to declaim against the bold administration of calomel in the commencement and progress of ardent fevers; as if it were neither dangerous to trifle away those precious moments in palliatives, nor judicious to attempt a radical cure. Only let practitioners put calomel fairly and extensively to the test in febrile diseases, and we shall soon cease to have imaginary and unfounded clamors against its free employment: for here it is a medicine which, like an injured and innocent individual, will have its character restored by an impartial and a strict examination.

Nevertheless, calomel must not be entirely depended on in the Scarlatina Anginosa, since its efficacy will be greatest when it purges freely; and such is often the torpor of the bowels, that it frequently fails to operate, unless assisted by the remedies before mentioned. The stools will always be found to indicate a disorder of the hepatic secretions; and this is an additional reason why calomel should be boldly prescribed. The effect of purgatives on the heat of the skin is very conspicuous in this form of the disease: indeed I have never known them to fail in reducing it, and sometimes several degrees when they acted freely;—an incontestable proof that their influence is not con-

fined to the primæ viæ, but extends through the whole vascular system. Yet highly as I commend purgatives in the first and in the second stage, they must generally be withheld when the stage of collapse approaches. Those milder medicines, strictly called *laxatives*, will then be the most beneficial; except where the bowels have been previously neglected, and then one or two brisk purgatives may be given, the strength being sustained by cordials during their operation. Whenever the general system is in a state of actual or approaching collapse, cordials must always be combined with the evacuants; for if the evacuants be employed alone, they will often depress the vital powers irrecoverably. Many patients have, in fact, been lost purely from excessive purging in the last stage of acute fevers. The body is then prostrate from the previous excitement; and we should make as little demands as possible upon its remaining resources. Our evacuations, in particular, should be carried no further than to remove feces actually accumulated in the bowels, and to allay irritation. On the first attack of fevers, the strength may be said still to exist, though in a *latent* state; and proper depletion, if we must preserve the chemical figure, will only serve to render it *sensible* again. But in the last stage, the vital energy, like the vital heat, has begun to fail, and may be wholly extinguished by the very measures, which would have preserved it in the first stage. This difference between the beginning and the conclusion, is often remarkably manifest in

the Scarlatina Anginosa; so much so indeed, that what was excellent practice at the one time, would be mortal at the other. It is for want of having properly marked the various stages, that that so much discrepancy of opinion exists as to certain modes of depletion. If there are circumstances which make us turn from copious evacuations of all kinds, but especially from bleeding, still there are others which confessedly render this measure absolutely necessary; so that when the symptoms cannot be early restrained by the ordinary evacuations, we must promptly have recourse to the lancet. Though it will appear, from the foregoing pages, that I have been cautious in advising venesection, yet in several instances I have bled moderately and most successfully in the onset of the excitive stage of the Scarlatina Anginosa; and can conscientiously declare that, at this period, and in this modification, I have not known it prejudicial in a single example. At the same time it is only proper to state, as a caution, that I have been called to cases where blood-letting was rapidly fatal, from having been employed at an advanced term; and I have seen the same melancholy result from the application of the cold affusions, under similar circumstances. In the last stage, even the fatigue occasioned by the employment of the tepid affusions should generally be avoided; instead of which, partial ablutions should be used, and the fresh air freely admitted into the chamber of the sick. The treatment, in short, must be materially regulated by

the stages; as will be more distinctly shown, in discussing the cure of the Scarlatina Maligna, to some forms of which venesection is more particularly adapted.

TREATMENT OF THE SCARLATINA MALIGNA.

When the scarlet fever is epidemical, any train of ill-defined signs of fever, accompanied with much disorder of the head and stomach, should always be most narrowly watched, as they are often the precursors of the highly inflammatory or the highly congestive varieties; and if they should not be relieved by purgatives, an emetic, and the tepid bath, a small portion of blood should be abstracted, for the reasons before stated. It was formerly noticed, that the most common form of the Scarlatina Maligna only differed in the degree of its excitement from the Scarlatina Anginosa; and indeed this seems implied in the writings of many authors, who assert, that the former does not so much differ in its very onset, as in its progress, from the latter. Yet it sometimes happens, that we have the same terrific combination of symptoms at the close of the Scarlatina Anginosa, as at that of the highly inflammatory form of the Scarlatina Maligna; and the only difference then is, that the last mentioned has run a more impetuous course, producing the malignant symptoms in a less time. It is indeed the grand discriminative sign of the highly inflammatory form of the Scarlatina Maligna, that the general excitement

is brief and excessive, rapidly effecting the destruction of some vital organ. When, therefore, the excitive stage of this form is once fairly revealed, it is absolutely necessary to act with the greatest decision, since every moment of time is then most precious. If it should be allowed to proceed many hours without being checked, it occasions the lesion of some important part, and an irretrievable exhaustion of the general powers. Wine, bark, and aromatic cordials, so forcibly, so indiscriminately, and so fatally recommended by numerous authors, were once the means upon which, unfortunately, I relied for the cure of this modification of the scarlet fever; and from repeated trials of them, I can truly affirm, that they are most pernicious in the first stage, and most destructive in the second. At the latter period they always add fresh momentum to the impetuous excitement of the circulation, which, without such auxiliaries, has a tendency to consume the living energy, and to derange the organic tissue. Instead, then, of adopting the stimulant plan, let the practitioner give a fair trial to the cold affusions as soon as the stage of excitement is developed; and if they should not effectually reduce the fever, let him not pause an instant longer, but open a vein in the arm or neck, or a branch of the temporal artery, and allow the blood to flow until it is stopped by an approaching faintness. The rules laid down as to phlebotomy in typhus, are also applicable here; for in the acute inflammatory form of the scarlet fever, a repetition of the operation ought, if pos-

sible, to be avoided. But as the excitement is higher in this disease than in the inflammatory typhus, the first blood-letting should be a most decisive one, so as to induce a lessened action in the whole of the circulatory system. If, however, it should not give a marked relief to the most prominent symptoms, a second, but more moderate venesection should be tried, in an hour or two afterwards, as that interval will generally afford sufficient time to estimate the effects of the first; and even where a second bleeding may not be deemed adviseable, it will be mostly found advantageous to apply some leeches to the temples, or to the region of the liver. The head should always be raised very high, and after having been shaved, it should be repeatedly covered with folds of linen soaked in cold water. This practice in cases so violent is much superior to blistering the scalp. As half measures will only bring discredit upon the depletory treatment, the practitioner must not stop here; but he should endeavour, immediately after the blood has been drawn, to get the bowels freely and frequently moved, by very large doses of calomel and jalap, aided by the sulphate of magnesia, or some other neutral salt. The purgative plan must be persisted in vigorously, in combination with the calomel, until there be a visible change for the better in every respect.

But it must be recollected that these powerful proceedings should be solely confined to the stage of excitement, and that unless they are carried

into effect within the first thirty hours of that stage, nothing decidedly beneficial is, for the most part, to be expected from them. Having too frequently witnessed the fatal results of depletion, when prosecuted in the last stage, and likewise the complete inefficiency of half measures in the second, I am certain, that nothing short of very early, prompt, and decisive blood-letting and purging can afford a fair chance of success, when the cold affusions fail in the first instance. No cases of this form of the scarlet fever have come under my observation, in which diffusible stimulants appeared to be really serviceable in the first and second stages; but on the contrary, several cases have occurred in which they were rapidly destructive. Bleeding and purging, however, employed at the time and in the mode above recommended, have been the means of snatching many patients from the most imminent peril. Nevertheless, it is only justice to acknowledge, that though the depletory practice has frequently succeeded, it has also sometimes failed, even when fairly and fully tried. But what method of treatment is always successful in acute diseases? The most judicious and well-timed depletion now and then fails in simple inflammations of the viscera: yet the knowledge of this fact forms no objection to its general applicability in those affections; neither ought the occasional failure of the above measures, in the highly inflammatory variety of the scarlet fever, to be made a ground of objection against the general propriety of their early employment. The more completely,

however, to illustrate the evacuant treatment, a few cases shall be detailed, in some of which it miscarried, and in others succeeded.

Some years ago, a robust girl, in the tenth year of her age, was attacked early in the day with chilliness, head-ache, and sickness. She remained much oppressed during the whole day, and became restless and hot towards the evening; when she complained much of stiffness of the neck, load at the stomach, and deep pulsating pain of the head. She passed a most uneasy night, and next morning the scarlet efflorescence was evident on the neck, breast, and arms; the throat much inflamed; the tongue white in the middle, and of a blood-red round the edges; and the pulse quick, small, and hard. The temporal arteries throbbed with violence; and the surface was every where dry and pungently hot. At this period the cold affusions were thrice applied in the space of two hours, but they gave no permanent relief. Purgative medicines were therefore prescribed; but as the greater part of them were rejected by the stomach, and as the symptoms continued to grow more urgent, eight ounces of blood were abstracted from a large orifice at the arm. This produced some alleviation for five or six hours, after which the fever returned with nearly as much violence as before. The warm affusions were now used, in conjunction with aperients. But as the stomach again became irritable, the latter produced very little effect, and only a temporary reduction of the morbid temper-

ature was obtained by the former. The signs of excessive disorder in the stomach and head almost hourly augmented; and on the fourth day the stage of collapse supervened, attended with petechiæ, black tongue, dark bloody stools, fetid breath, and other malignant symptoms. The patient died at an early hour of the fifth day.

In this case, the cold affusions had, perhaps, a tolerably fair trial, at least it seemed useless to persevere longer in their employment; but the stage of excitement had existed probably more than fourteen hours before their application—a great loss of time in cases so severe. The venesection should have been carried further in the first instance, or promptly repeated when the fever returned: and it is to the one or other of these omissions that the failure was perhaps chiefly attributable. At all events, it is not unlikely, that a more copious detraction of blood might have so impeded the fever, and allayed the irritability of the stomach, that the purgatives administered would have operated freely, and thus given a chance of recovery. This reasoning is in some degree borne out by the morbid appearances which were exhibited on dissecting the body; the brain, liver, and throat having presented the vestiges of considerable inflammation.

A stout vigorous boy, about nine years old, went to school in the morning, apparently quite well; but returned home in the afternoon, com-

plaining of coldness, giddiness, and pain at his stomach. About eight o'clock in the evening he became hot and thirsty, and vomited some liquids which had been given him. Soon after this period, he said that he was drowsy, and at his own request was put to bed; but, so far from sleeping, he had a most restless night, and early on the next morning was highly delirious. At this time a deep red efflorescence was diffused over the neck, breast, arms, and thighs. The temperature of his whole skin had been excessively high during the night. He continued to rave almost incessantly, and at nine o'clock on the following evening, twenty-nine hours from the period of his sickening, my opinion was first requested. The surgeon in attendance, from whom I obtained the preceding history of the case, informed me, that he had been consulted about fourteen hours after the attack; that he had prescribed an emetic and a purgative, both of which had operated without producing the least relief; and that he had not been able to examine the throat, on account of the violence of the patient. At this time, the efflorescence chiefly occupied the neck, breast, and upper parts of the arms and thighs, and was of a deep red colour. Numerous small petechiæ were observable on different parts of the body; the cheeks were deeply suffused and hot; the lips livid and cool; the tip of the nose and lobes of the ears quite cold, and the eyes blood-shot. The trunk was considerably above, while the extremities were somewhat below the natural temperature. The boy lay, with

his eyes half open, in an apparent stupor for several minutes, then started upon his breech, threw his arms violently about, and shrieked loudly. His breathing was quick and anxious: his pulse about 160 in the minute, and though very small, yet it firmly resisted pressure. Under such a combination of dangerous symptoms, little was to be expected from any mode of treatment, at so advanced a period of the second stage. The reduction of heat on some parts of the body, warned me, that the stage of collapse was not far distant; yet the evidently engorged state of the brain, and the hard resisting pulse, induced me to recommend venesection, as a dernier effort. Repeated attempts at opening the temporal artery having been frustrated, a large orifice was in consequence made in the median basilic vein. The blood flowed in a full stream; but from the excessive struggles of the patient we could not get more than six ounces. No benefit resulted from the operation, and his continued violence prevented us having recourse to other expedients. General and strong convulsions came on about five o'clock on the subsequent morning, which rapidly put a period to his existence, about thirty-eight hours after the first attack.

From the speedy termination of this case, there was every reason to suppose, that the throat was not ulcerated. After death the abdomen became swollen and tense; and part of the integuments of the back, abdomen, and thighs remained of a

deep, livid red colour. An examination of the viscera was repeatedly requested in this case, but was always peremptorily refused. In all probability the cause of death was an intense degree of cerebral inflammation, together with a similar and co-existent affection of some of the abdominal organs. Venesection was certainly attended with no positive advantage, either because it was used at too advanced a period, or because a sufficient quantity of blood could not be obtained. Perhaps to a mind prejudiced by the doctrines of debility and putrescency, phlebotomy might appear contra-indicated, and even prejudicial in both of the examples above related. It is, in truth, no difficult matter to bring the evacuant practice into apparent discredit. Depletion used too sparingly, or too late, will never be serviceable, and will sometimes really hasten the fatal event, by sinking the general powers, without removing the topical affections:—hence evidences might be easily furnished, which would enable its decided opponents to draw inferences against its general utility. But as its failure, in cases like the forementioned, may generally be traced to its unseasonable, or to its partial application, so the following will serve to illustrate its efficacy, when opportunely and fully tried.

An irritable boy, in the ninth year of his age, who had been infected from a mild case of the scarlet fever, began to complain after bed-time of faintness, pain and swimming in the head, and

uneasiness of the stomach. He felt alternately chilly and hot, during the night, and next day the scarlet efflorescence began to appear, and the skin became of a high and uniform heat. At four o'clock in the afternoon, he had a manifest tendency to delirium, complained almost constantly of flying pains in different parts of the body, and was exceedingly restless. The pulse was above 140 in the minute; the tongue dry, and of a bright red; the throat inflamed; the neck stiff and painful; the eyes wild, suffused, and sparkling; the face swollen and deeply flushed; and the breathing hurried, almost to panting. In addition to these symptoms, there were fulness and tenderness in the epigastric region; frequent retching or vomiting; much flatulence of the stomach; intolerance of light and noise; and a peculiar deep, throbbing pain in the forehead. When my advice was requested, the symptoms had existed about eighteen hours, including the stage of oppression; but the excitement had not been developed more than half that period. Here then was a fair opportunity to prove the powers of the depletory treatment, and it was accordingly adopted without loss of time. A large orifice was made at the arm, and the blood permitted to flow until it was stopped by an approaching syncope. About ten ounces were requisite to produce this effect. When the patient recovered from the fainting, four leeches were applied to each temple; and soon afterwards half a scruple of calomel was exhibited, and its action determined to the

bowels by repeated doses of jalap and the sulphate of magnesia, and an occasional cathartic injection. The general and local blood-letting had effectually allayed the irritability of the stomach, and the aperient medicines operated powerfully in four or five hours. The most striking alleviation followed this practice; and a regular perseverance in the use of calomel and other purgatives, brought the patient to a state of convalescence in four or five days. In this case, the brain and stomach seemed the organs chiefly disordered; and I have not the smallet doubt but it would have ended unsuccessfully, if depletion had not been promptly and decidedly pursued.

About the same period, a girl in the thirteenth year of her age, came under my care, who, nearly twelve hours after the developement of the excitement, was afflicted with a violent, continued pain in the head, and vertigo; confusion of mind; sense of faintness; load at the stomach; nausea and retching; great general restlessness; and quick, anxious breathing. The skin was excessively hot, and of a deep scarlet colour, and there were considerable redness and swelling in the fauces. The eyes were morbidly sensible to light; there was an inexpressible anxiety depicted on the countenance: and the temporal arteries throbbed forcibly, and the pulse at the wrist felt like a small chord. Twelve ounces of blood were abstracted from a branch of the temporal artery, which brought on complete syncope; when that, how-

ever, receded the patient expressed herself much relieved. But as there still remained evidences of a preternatural accumulation of blood in the head, purgatives were freely exhibited as before, and cold stupes frequently applied over the scalp. When the medicines had acted plentifully, there was a still further abatement of the urgent symptoms; and they were therefore omitted for a time, the room where the patient lay being kept very cool and quiet. But after the lapse of three or four hours, there was an evident exacerbation of the fever. As the mischief seemed to be still seated in the head, the hairy scalp was shaved, and ten leeches applied to the temples and forehead. The purgatives were again administered with great freedom, until they produced several copious evacuations. These measures had the desired effect; for they not only completely broke the force of the fever, but removed the affection of the head, and the recovery of course was rapid. Yet the patient was for some months afterwards troubled with a deafness, which had appeared at an early stage of the disease. The brain was perhaps the only viscus attacked with inflammation, which at first was merely checked, but eventually subdued by the blood-letting and by the brisk purgatives.

Several other cases of the acute inflammatory form of the scarlet fever have been treated successfully under my immediate inspection, by early and active depletion; but the similarity of their symptoms and results to those already reported, renders

an account of them unnecessary in this place. Possibly it may be contended by the abettors of the doctrines of debility, that in the two cases last detailed, there were few or no marks of malignity present. If any practitioner were so infatuated as to wait for the accession of the putrid symptoms, to satisfy himself of the malignant nature of the disease, he would unquestionably lose every patient who laboured under this form of the scarlet fever. The putrid symptoms only occur in the stage of collapse, and are the products of the preceding stage of excitement. An attentive study of the disease at the bed-side, from its commencement to its termination, will convince any candid mind of the truth of these assertions. But if there should be any one so sceptical as not to be satisfied by a contemplation of the symptoms during life, let him in mortal cases examine the viscera of the head, chest, and belly, and all his doubts and prejudices will be entirely removed.

In some instances of this form, I have bled twice freely in children from the arm, from the external jugular vein, or from the temporal artery, before a sufficient impression could be made upon the visceral inflammation; yet as it has always been my aim to make one general bleeding answer if possible, I have never had recourse to a second, but from the most imperious necessity. It has appeared to me a great error to trust solely to venesection, in fevers connected with very high excitement. For, to give efficiency to such a practice,

the evacuations of the vital fluid must generally be repeated again and again, and even after all they often fail to arrest the progress of the local affections; and where they do apparently arrest those affections, they not unfrequently induce an irritation and exhaustion, under which patients may rapidly sink, or from which at least they recover slowly, and seldom afterwards gain their pristine vigour. It would be a most instructive lesson to the medical world, if those practitioners who have trusted to profuse bleedings alone were candidly to state the whole results of their experience; and I cannot but apprehend from my own observation, that their successful cases would be arranged with many melancholy instances of failure. The partial statement of facts, with regard to a particular practice, is frequently both deceptive and dangerous; since it may lead us to place so complete a reliance upon it, that we only might be convinced of its imperfections by its actual miscarriage on our fellow-creatures. Perhaps the history of medicine, from Hippocrates to the present time, would bear me out in the assertion, that physicians in all ages have been too much in the habit of trusting to a favourite, unassisted remedy; and this has been more especially the case with respect to venesection, upon which so many eminent men have exclusively rested their hopes of success in inflammatory diseases. If bleeding and purging had always been combined in the treatment of highly acute complaints, the results would have been much more favourable, than where either of

those plans had been separately pursued. It is in the early, decisive, yet moderate use of the lancet, speedily followed up by purgatives and alteratives, that we shall alike avoid rashness and timidity; and it is in a judicious combination of these three agents, that a method will be formed far superior to any plan founded on an exclusive preference for one remedy. If it be injudicious and dangerous to bleed too often and too largely in adults, it is still more so in children, many of whom have been lost from a disregard of the golden medium as to venesection. Were it inquired why large bleedings are more dangerous to children than to adults, I should answer, that in the former, they induce greater nervous irritation, and greater constitutional debility; and these effects may be marked by a short, weak, hurried, anxious respiration, and by a pulse which has a sort of tremulous and convulsive rapidity. Large losses of blood in children bring on an excessive re-action of the heart and arteries, different from that which existed before the operation. It is a re-action combined with an irritability of the nervous system, and with the agitated struggles of wasted strength; and therefore it can only be allayed by soothing means, such as opiates, perfect quietness, free ventilation, or the tepid bath.

But if such are the perils of excess, we have nothing to dread from seasonable and moderate venesection in children, when they labour under fevers combined with inflammation: and in that variety

of the scarlet fever under consideration, it will be found indispensable in a large majority of cases; since the cold affusions, however promptly applied, will often not make the slightest impression, and since the operation of purgatives alone would be much too slow to arrest its rapid advancement. But after early and moderate bleeding, we must not pause an instant, as before hinted, but prescribe active and alterative purgatives with a boldness commensurate to the danger; for upon their efficacy the favourable issue of the case will ultimately depend, whatever immediate benefit may have been derived from the blood-letting. In speaking of the Scarlatina Anginosa, I have strongly insisted on the efficacy of full doses of calomel, succeeded by other purgatives, in the stage of excitement; and in this more impetuous form, the calomel must be still more freely administered, and the same or even greater care must be taken speedily to assist its operation by the bowels. To use unnecessary delay in such cases, in the exhibition of cathartics, is to risk the life of the patient; and as the morbid actions are unusually active, so must be the nature of our remedies. When we recollect the great length of the intestines, we cannot be surprised that frequent and copious motions should lessen the general excitement and the topical determinations; and, doing this without the hazard of consequent debility, they are particularly adapted to the second stage of inflammatory fevers, after the judicious employment of the lancet. But in almost every such fever the abdominal secretions will be

found disordered, at least they are strikingly so in the variety under consideration; and calomel not only tends to restore them to a natural state as a purgative, but likewise exerts an influence over all the capillary system, by which it equalizes the circulation. That portion of blood which was oppressively superabundant in one or more parts, calomel diffuses throughout the whole habit; but there are certain circumstances which must be overcome, before it can generally effect so beneficial a change. Whenever there is an excessive emergence of heat and of arterial re-action, especially when combined with a cerebral determination of blood, the body resists both the purgative and the specific action of calomel; and under such a morbid condition, calomel will seldom be useful, except in conjunction with other depletory measures. But where bleeding has been premised, or where evacuations of the bowels are simultaneously procured, the universal excitement and its concomitant oppression are so reduced, as to render the system permeable to the power of calomel; and acting then under the most favourable circumstances, it produces benefits which cannot be wrought by any other medicine, and, like oil poured over ruffled water, it reduces agitation into calmness. We have often erred in our opinions of calomel, from considering its operation the same in ardent fevers as in affections unattended with increased heat. But its effects are varied by the condition of the body under which it is given; and where it has to encounter a highly febrile action, the system re-

ceives no shock from its free administration, as its main force is spent on the reduction of that morbid action alone. Yet when that morbid action is subdued, the system returns towards the ordinary laws of health, and the calomel must be withdrawn; because its further use would then produce different and perhaps prejudicial consequences, seeing that the present state of the system is widely different from the past.

During the administration of the purgatives, the tepid affusions will sometimes be found useful; but where the abdominal viscera seem to have been considerably affected, the warm bath should have the preference. Both these expedients, when properly employed, tend to lessen nervous irritation, and arterial excitement, but more especially after bleeding, and while an action is maintained on the bowels: sometimes they equalize the circulation, like calomel, by creating an universal perspiration, which considerably diminishes the internal affections. Still, however, they must only be considered as secondary means at the best, in this violent variety of the scarlet fever; and therefore the practitioner should never allow his attention to be occupied by them exclusively, since far more effectual measures are at the same time necessary. It is one of the nicest points in the practice of physic, not to be too profuse or too sparing in our applications, but to make their united force exactly equivalent to the reduction of the prominent symptoms. To prescribe mild measures for dangerous,

or active ones for slight affections, equally betrays a want of discernment; but errors of the first kind are generally soon fatal, whereas those of the second may be repaired by the renovating powers implanted in the system. Whatever energetic means may be required in the stage of excitement for this form of the Scarlatina, it must never be forgotten, that those means are only to be continued during that stage, and while the dangerous symptoms remain unsubdued; since to continue powerful evacuations when the symptoms for which they were at first prescribed have actually been removed, or to push them on vigorously when universal collapse approaches, would be an indiscriminate rashness in the practitioner, that might be hazardous, if not mortal to his patient. In this form, the excitement varies in its duration considerably in different subjects: sometimes it terminates in less than twenty-four hours, as in a case already reported; and in other instances it is protracted to the third, fourth, or fifth day, but seldom longer than the last mentioned term. For these reasons, there is a considerable range as to the time in which depletion may be employed; but it may always be made with more boldness the nearer it is used to the onset of the stage of excitement. If the evacuations should arrest, generally and locally, the morbid activity of the circulation, the strength of the patient will thereby be saved; because the continuance of that morbid activity would exhaust much more than the evacuations, and besides it has a tendency to derange the structure of vital parts. It is not an uncommon thing to

hear some practitioners contend, that the strength of a febrile patient should be nursed and preserved in the beginning, to enable him to meet the collapse which must necessarily occur at the close: and under this fallacious, this perilous impression, I have seen cordials administered with a view to guard against the very consequences which they were powerfully calculated to produce. The collapse in the last stage of fevers attended with an open and universal developement of heat, is proportionate to the degree of arterial excitement which always precedes that collapse; and whatever tends to increase the excitement also tends to increase the collapse; and on the contrary, whatever lessens the excitement likewise lessens the degree of collapse. We cannot therefore support the strength of patients by cordials during the excitement, since they necessarily augment the excitement which ultimately occasions the collapse; but we most effectually support their strength by promptly checking the excitement at its first invasion, or before it has advanced far, through the agency of measures which remove heat, allay irritation, and lessen the force and the quantity of the circulating fluids. We now hear much less of malignant and putrid fevers than we did formerly, and what is the principal cause of this? What but the active and antiphlogistic treatment more generally used at the commencement of such affections,—a treatment which destroys or moderates the excitement in embryo, and thus prevents the appearance of malignant symptoms, the mere products of unrestrained inflammations or congestions.

Upon this point I must be allowed to speak decidedly, because I was once so far misled by great authorities, as to exhibit stimulants even in the beginning of some idiopathic fevers; and I now enter my earnest protest against their too early exhibition, that others may hereafter avoid the mistakes which arise from a deference to the recorded opinions of our predecessors. It is still too much the custom, among certain practitioners, to have re course to diffusible stimuli, the moment they apprehend that any typhoid signs have appeared; and even in the most approved of our treatises on the scarlet fever, we find the stimulant practice fully and unequivocally recommended in what has been termed the malignant variety.

When the excitement has been timely checked in the highly inflammatory form of the Scarlatina, the stage of collapse will be comparatively slight; and a milk diet, with quietness, proper ventilation, and laxatives, will be all that are necessary to ensure recovery. During convalescence, great care must be taken to avoid cold, and whatever may excite the vascular system; as very slight causes may reproduce visceral inflammations, or occasion dropsical effusions—for the prevention of both of which effects, purgatives and the tepid bath are amongst the best measures. If the excitement should not have been successfully restrained, the stage of collapse will almost always be combined with disorganization; and therefore little good is in general to be expected from medicinal means.

But as the disorder of function sometimes assumes the character of derangement of structure, we should never abandon any case as utterly hopeless; on the contrary, we should be the more attentive in our endeavours to save the patient, so that if we fail, we may be satisfied of having performed our duty. Venesection is then entirely out of the question, and the only evacuation that can be safely induced must be by aperient medicines; and even that must not be pursued too far, lest it sink the feeble remains of life. The strength should be supported under the operation of the laxatives by small and repeated draughts of warm wine; and if any irritation should arise, it may be allayed by moderate doses of opium, which are occasionally more beneficial than might be expected, especially when combined with the aromatic confection and camphor. The hands, face, breast, and soles of the feet, may be now and then washed with warm brandy and vinegar, and some refreshing aromatic water may be sprinkled over the bed-clothes. Ventilation and cleanliness should be particularly regarded, since they are necessary in all the forms, and at all the stages of this and every other contagious fever. Frequent observations have convinced me, that the accumulation of any febrile contagion is highly detrimental to the sick: it having the power to augment the fever in the first stages, and to change the constitution of the fluids in the last.

In the irregular form of the congestive scarlet

fever, or that in which the excitement is partially developed, purgatives and the warm bath are the best remedies. But to ensure success, they must be employed from an early period, and diligently persevered in for some time afterwards. The bath should be used about twice every twenty-four hours for the first four or five days, and then only once in the same term, until there be appearances of recovery. The purgatives should be so exhibited as to move the bowels about four or five times daily, so long as the general oppression and irregular state of the excitement remain. As soon as the pulse is free and full, the skin of a moderate and equable heat, the general oppression overcome, and the hepatic disorder corrected, the purgatives must be administered more sparingly: nor is it ever prudent to omit them entirely, until a state of complete convalescence be established, because there is a great tendency to relapse in this modification of the disease, particularly if the bowels be neglected after a remission has occurred.

The belly is generally torpid at the beginning, and the dark or clayey appearance of the excrement shows, that the functions of the liver are much affected; indeed, if they can be brought to a natural state, recovery will mostly follow apace. On this account calomel is peculiarly serviceable, which should be given with considerable freedom at first, and its action on the bowels accelerated by the compound powder of jalap, or the tartarized infusion of senna; the last of which, when rightly

prepared, is a medicine which children like better than almost any liquid purgative. When the feces have become of a healthy colour, and the functions of the skin have been restored, the calomel may be omitted, and a little castor oil occasionally substituted, or calcined magnesia mixed with lemon juice. In conjunction with aperients and the warm bath, small doses of pulvis antimonialis or of the liquor ammoniæ acetatis may be sometimes useful as diaphoretics; although small and repeated doses of the carbonate of ammonia are often superior in occasioning a gentle and general perspiration, which materially contributes to remove internal congestion. It is commonly necessary, in this form of the disease, to give moderate portions of some diffusible stimuli as soon as the stage of collapse approaches; and mild brisk ale, or porter, is one of the best that can be given to children, or a little Madeira wine diluted with milk.

In bad cases where, from neglect, the feces have been allowed to accumulate, it is sometimes absolutely necessary to purge briskly for a short time, even in the stage of collapse. And whenever this is done, the strength of the patient must be supported by the occasional exhibition of good wine, during and after the operation of the purgative, as has been fully explained in treating of typhus. But it must be recollected, that so long as the stage of irregular excitement continues, wine is generally a dangerous agent; warm diluents, such as gruel or weak chicken broth, being

infinitely preferable. Great errors have been sometimes committed in the use of the cold affusions, from not having rightly discriminated the congestive from the other modifications of the scarlet fever. In two instances of the irregular form now under review, I have known the application of cold water to the surface speedily sink the patients into an irretrievable collapse, and in some others have witnessed most distressing effects from the same practice. It may be laid down as a practical maxim, that in this form of the disease the cold affusions are decidedly prejudicial. It was formerly noticed, that the scarlet fever, which occurred among the children in Heriot's Hospital, was allied to the irregular congestive variety; and Dr. Hamilton successfully encountered it by repeated purging—a mode of treatment which, with the assistance of the calomel and the tepid bath, will be found perhaps the best in every similar modification of the disease. In three or four cases, I ventured upon early and moderate venesection, and it seemed to shorten their duration. But my experience does not warrant me to speak decidedly of its powers, in this variety of the distemper, having generally trusted to the measures already recommended. For some time after convalescence from the irregular form of the congestive scarlet fever, great care is requisite; as there is not only a singular tendency to obscure visceral inflammations, but also to dropsies. The occurrence, however, of both these affections may frequently be prevented, by the occasional use of

laxatives and the tepid bath, together with warm clothing, a milk diet, and a residence within doors for two or three weeks. The dropsies of the chest and abdomen, which supervene after recovery, are commonly the effect of a low inflammation of the pleura, or of the peritonæum, or of some obstruction left in the liver; and therefore those parts should claim particular attention for some time after the abatement of the original fever. As the regular congestive is an aggravation of this modification, and as it constitutes one of the chief varieties accounted malignant, I shall enter more into detail respecting its treatment.

The regular form of the congestive scarlet fever, the cure of which is next to be explained, is occasionally preceded for two or three days by obscure febrile symptoms, as chilliness, paleness of the face, heaviness of the head, languor, and loss of appetite. If the attack were reckoned from the time that the above mentioned symptoms occurred, we could say with truth, that the lancet might be used with propriety so late as the second or third day. But as this form generally makes an open, sudden, and overpowering invasion, the period proper for venesection is for the most part limited within the first twenty-four hours of the decided signs of congestion. After the appearances of great and general oppression occur, the stage of universal collapse soon supervenes, and the mass of blood is changed into a dark, uncoagulable gore. As soon therefore as

the attack is clearly manifested, not a moment should be lost in having recourse to the most active measures; as delay is more dangerous in this than any other modification of the disease.

The first thing that should be done in these cases is to immerse the patient in a warm bath strongly impregnated with salt, provided it can be speedily prepared; and while he remains in it, or immediately after he comes out of it, as much blood should be abstracted as will free the pulse from oppression; the skin in the mean time being well rubbed with coarse flannels dipped in some stimulating liquid, such as warm vinegar and salt. The warm bath and frictions cause a flow of blood towards the surface, and thus contribute to relieve the central parts from congestion; and, in fact, unless these be premised, it is generally a very difficult matter to abstract blood in the most severe instances, so striking is the change induced in the cutaneous circulation. Where the warm bath cannot be readily obtained, frictions by warm flannels and warm stimulating liquids must be used instead, and bottles or bladders of warm water applied to the feet and other parts; that is to say, this plan must be pursued previously to blood-letting, where the internal congestions afford sufficient time, and where the skin is of an irregular heat, for want of its ordinary distributions of the sanguiferous fluid. The writings of Hippocrates and of Celsus show, that the ancients paid far more attention than the moderns to the

use of the warm bath and frictions of the skin in febrile diseases; and in the congestive modifications, they are certainly expedients well fitted towards equalizing the circulation. Among the moderns, however, the ingenious and elaborate Dr. Willan speaks favourably of warm brandy and vinegar as an application to the skin, in what he denominates the malignant Scarlatina; though his general remarks on the subject are strongly imbued with the doctrines of malignity. Blood must be drawn with much more caution in the highly congestive than in the highly inflammatory form; since the state of the circulation in the one differs essentially from that in the other. In the highly inflammatory form, we have a rapid tense pulse, with all the signs of an excess in the force and in the frequency of the whole arterial streams of blood; and therefore, when called early, we may safely venture on decisive venesection, the effects of which will then only be to reduce the preternatural fulness and rapidity of the arterial currents to something like the ordinary calmness of health. But in the highly congestive form of the scarlet fever, there is an actual diminution in the force of the arterial circulation, on account of an excessive accumulation of blood in the venous apparatus of the interior parts; and therefore, if we bleed too largely, we may so diminish the already oppressed energies of the arterial system, as to make the heart at once sink under the shock. Consequently, small or moderate bleedings are generally preferable in this congestive modifica-

tion; although instances now and then occur in which full bleedings are required, to restore the lost equilibrium. At first sight, it might appear almost ridiculous to say, that phlebotomy is a direct stimulus; but it really is so when properly employed, in the congestive examples of fever. It frees the over-burthened vessels from a portion of the oppressing cause, and thus brings those innate powers into play, by which the balance is maintained between the two systems of veins and arteries. In highly congestive cases, life is oppressed and endangered by an almost stagnant plenitude of blood, some of which must be taken away, before the common course and purpose of the remainder can be restored; as the light of a candle may be nearly extinguished by too great an accumulation of melted wax round the wick, and yet be quickly revived by drawing off the superabundant fluid. One would naturally suppose, *à priori*, that bleeding from the veins would be most beneficial as the engorgement exists in them; and yet in some cases where blood could not be obtained from the veins, I have seen the best effects follow the abstraction of blood from the temporal artery. There seems an intimate sympathy, probably through the heart, between almost all the blood-vessels, whether venous or arterial; so that a certain impression made at some of the branches extends, like an electric influence, throughout all the vascular system.

Whenever the practitioner bleeds in the highly

congestive variety of the scarlet fever, he should keep his finger constantly upon the pulse, from the moment that the blood begins to flow: and if he should find it rising in force, he may be assured, that he may safely proceed to a moderate extent; but if, on the contrary, he should find it continue to sink, he must immediately bind up the orifice. Venesection should never be carried to fainting in great venous congestions. During syncope almost all the blood is accumulated in the veins; and where there has been extreme oppression before the bleeding, throwing a patient into that condition might prove fatal. It most frequently happens in cases of this variety, that the blood at first merely trickles from the punctured vessel; but the operator must wait for some time, and he will generally obtain a stream of blood at last. Many a life has probably been lost from binding up the arm too soon, in examples of disease accompanied with excessive congestions of venous blood. When there is a free return of blood to the skin after venesection, warm diluents will be the best drink that can be administered; but when the skin remains cool after venesection, it will mostly be necessary to give the patient small and repeated portions of warm wine and water, until some degree of arterial re-action succeed, and then diffusible stimuli of all sorts must be omitted. Immediately after the use of the warm bath, frictions, and bleeding, a large stimulating cathartic enema should be injected—an expedient which is more or less beneficial, not only by clearing the

lower part of the bowels of their contents, but also by lessening the irritability of the stomach. In conjunction with the means above mentioned, there is no agent with which I am acquainted, that tends to equalize the circulation in congestive cases so much as calomel; and whenever it can be made by a bold administration to create a free, warm, and universal perspiration, with a copious flow of bile, the patient may be generally considered out of danger. In the most formidable examples of the highly congestive variety of the Scarlatina, the secretion of bile is often totally suspended at the commencement; the liver being in a state precisely analogous to that which occurs in the worst instances of cholera morbus, so engorged with venous blood as to be incompetent to perform its wonted offices. All the instances of this modification of the scarlet fever which proved rapidly mortal, were designated by an absence of bile in the motions; and the same has been the case in all the most concentrated attacks of cholera morbus, which have fallen under my inspection.* In both these affections, therefore, a plentiful flow of bile is a favorable circumstance; and I believe that few cases of the highly congestive scarlet fever will end fatally where the hepatic

* 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 in modern pathology, I refer the reader to his valuable work on the Influence of Tropical Climates.

secretion became copious and natural at the same time. As the stomach is generally very irritable in this form of the Scarlatina, the calomel must be given suspended in mucilage, and in eight or ten-grain doses even to children; and this quantity must be repeated two or three times within the first thirty hours—the short period in which the patient will be either saved or lost. If the calomel should not purge, it may be assisted by other cathartics, after it has been two or three hours in the intestines; and where the stomach is exceedingly irritable, it may be advantageously exhibited with small doses of the camphorated tincture of opium, which accelerate its action on the skin, and do not retard either its specific or its purgative operation, both of which are requisite at the same time, that calomel may be eminently beneficial.

If it were ever so much desired, it is a most difficult thing to excite ptyalism very early in children labouring under febrile diseases, but particularly when under those of the congestive class where the brain is disordered; and it is not in general until the cerebral oppression be lessened by evacuations, that we see salivation take place. In ordinary complaints, ptyalism is one of the first obvious effects of mercury, but is often the last in those of an extraordinary nature: hence in the highly congestive scarlet fever we most frequently find the liver, kidneys, and skin excited by the calomel, while the salivary glands remain unaffected, unless it be continued when the general

oppression is on the decline. The most certain test of calomel performing its intended office in congestive diseases is, the appearance of an universal excitement under its exhibition; and if that action can be fairly established, every vestige of the previous and opposite one of venous congestion will soon be erased. Ptyalism is certainly so far desirable in these cases, that the moment calomel begins to act as a salivant, we have distinct indications of re-action throughout the whole extent of the arterial system; but it is prudent when that re-action has once been created prior to ptyalism, particularly if the skin be moist, not to exhibit calomel very largely, but rather to employ it moderately, in conjunction with cathartics. Children at all times certainly suffer more from salivation than adults, and whenever it is excited in the former, it should claim an especial attention, that it may be at once moderated by purgatives and the tepid bath; and, notwithstanding what some authors have asserted, I have never known an instance of ptyalism attended with the slightest hazard to children, where these precautions have been timely used. Mere salivation is at no time to be considered as the principal part of the efficacy of mercury, yet it is one of the surest signs that it is operating on all the secretory organs of the body; the conjoint evacuations elicited from them, and the return of the tide of the circulation into the arteries, being the means by which the local engorgements and the general oppression are relieved in congestive diseases. By instituting

such a peculiar process through the agency of mercury, we only imitate the operations of nature when they are successful in throwing off such affections; since when any organ is spontaneously freed from venous congestion, it is by an arterial re-action, and an augmented secretion. If the liver or lungs be overloaded with venous blood, the one is relieved by an arterial excitement and a flux of bile, and the other by an arterial excitement and an effusion of mucus into the bronchia; as we have an example in point of the first in the disease called cholera morbus, and of the last in certain cases of spasmodic asthma. It is the local engorgements and the general oppression, in the highly congestive scarlet fever, which require calomel to be freely exhibited before it will act either as an aperient or as an alterative: and here we have another striking instance how disease modifies the operation of this medicine, even when the skin is not of a preternatural temperature. We must constantly bear in mind the state of the system at the time of prescribing calomel, otherwise we shall be liable to commit perpetual mistakes in its administration; and it is chiefly from an inattention to this circumstance that it has been given with such dangerous freedom in some diseases, and in such feeble and ineffectual doses in others. Highly as I approve of a short and powerful course of calomel in certain acute complaints, my observations have deceived me much if this medicine be not greatly abused in chronic affections; and some practitioners I sus-

pect have yet to learn, that it may be boldly and advantageously given for a short time under great oppressions, but that its long or profuse administration in many slow diseases very frequently breaks down the system more than those diseases themselves.

The blood abstracted is never covered with a buffy coat in the regular congestive form of the scarlet fever; and this is likewise the case in all diseases attended by similar conditions of the venous and of the arterial systems. The formation of what is called the inflammatory crust requires general re-action and preternatural heat; and where these are absent in fevers, it will perhaps never be found. In some febrile cases where general re-action and preternatural heat existed, I have seen the blood drawn from a vein exhibit the buffy coat, while there was none upon that drawn from an artery; although the operation had been performed nearly at the same time, so that the two currents flowed simultaneously. The blood circulating in the arteries is of a higher heat than that circulating in the veins even during health; and the arterial blood requires a much higher heat than the venous, to make it separate the inflammatory crust: hence we so often find this phenomenon upon the venous, and rarely upon the arterial blood. Yet the want of the inflammatory crust is no test of the impropriety of venesection, since it is absent in a most formidable class of diseases which imperiously requires the lancet. When

blood is drawn in the beginning of congestive affections, it tends to create a re-action in the heart and arteries, and this re-action if not restrained sometimes passes on to inflammation,—an occurrence which explains the reason why there may be no buff upon the blood drawn the first day, and why it may abound in the second. Even the blood of persons in health may be made buffy by bleeding; for less or more re-action generally follows that operation, where there was previously no increased excitement. These hints may tend to illustrate the changes induced by phlebotomy in venous congestions, such as are now the subject of inquiry; and they may also contribute to show with what care diffusible stimulants should be given in the commencement.

In extraordinary cases of this nature, it is always best to bring all the most efficient remedies into action at the same time, as their collected is invariably much greater than their individual influence. Acute diseases often readily yield to the rapid shocks of a prompt and powerful treatment; whereas they will proceed in defiance of many feeble, protracted, and desultory efforts. In conformity to this doctrine, it has been my usual plan in the regular form of the congestive scarlet fever, to trust to one general blood-letting, in combination with the warm bath, frictions, tepid diluents, calomel, purgatives, and opium; and besides these means, leeches and blisters have been sometimes applied. Having fairly tried the efficacy of such

powers, within the shortest possible period, in a general way I attempt little more afterwards, than merely to assist the operations of nature by mild measures. It is perhaps too common an error in the practice of physic, to make trifling evacuations in the beginning of highly acute diseases, and to repeat them too frequently afterwards. Under this method the patient is bled or purged daily for some time; but although the collective sum of the evacuations be very large, yet as each evacuation is separately small, the ultimate effect is, that the general strength is completely consumed, and the disease remains unsubdued. Tepid drinks have been alluded to more than once as proper in the beginning of the highly congestive scarlet fever, and I must here add, that their power is greater than might appear at first sight: they contribute to allay irritability of the stomach, to rouse the heart into action, and to determine the blood freely to the surface; and on all these accounts, they are expedients, however simple, which ought never to be neglected in the outset. Sydenham stayed the vomiting in the plague by exciting an universal perspiration; and if a copious and warm sweat can be early procured in the congestive forms of the Scarlatina, it will always be advantageous.

In the first stage of the regular form of the congestive scarlet fever, the energy of the system is not exhausted, it is only weighed down—the debility is not real, but merely apparent: there is

then simply congestion of the venous system, and a consequent oppression of the powers of the heart and arteries. When, however, the first stage advances unimpeded, in the last an universal collapse always occurs, and is joined, not with venous congestions only, but also with disorganization of some of the viscera. This view of the subject may serve to illustrate the principles of treatment adapted for each of these stages. Well-timed and judicious measures may restore the balance of the circulation in the first stage, and insure a final recovery; but every measure is precarious in the last stage, for what human agency can repair great lesions of structure? With the exceptions already stated, wine ought rarely to be given until the approach of the last stage. Yet when the overpowering pressure of the internal congestions has been lessened by sufficient depletion, the occasional administration of a little Madeira wine is sometimes exceedingly serviceable, especially where the action of the heart and arteries has not become freely developed after venesection. As in the last stage it is sometimes impossible to determine precisely whether the danger proceeds from mere congestion and debility, or from congestion and organic lesion, wine is generally a remedy deserving of a fair trial; whereas bleeding is then entirely inadmissible, and all evacuations, except moderate purging, must be carefully avoided. If there be organic lesion, wine will rapidly aggravate all the symptoms, and of course it should be withdrawn; if there be simple congestion with

exhaustion, it will at least alleviate suffering, and occasionally prolong and even save life, particularly when exhibited with small and repeated doses of opium, which will frequently be an useful auxiliary in alleviating the irritation attendant on the last stage. Indeed, in some cases of this variety, moderate or even large doses of opium will be found a sovereign remedy towards the close, when excessive irritation and debility exist without any organic lesion: and I cannot illustrate the utility of this drug better in such cases than to compare it to the effect which it produces in the last stage of cholera morbus, sometimes snatching patients from the very jaws of death.

The better to elucidate the cure of this form of the scarlet fever, some cases shall now be concisely reported where the stimulant treatment failed, and some where the depletory succeeded. A numerous family of children was afflicted with the scarlet fever, when it raged epidemically, all of whom had the disease mildly except one boy, who was about five years old. From the attack he was overcome with oppression, from which he never afterwards rose. On the first day his mind became confused, and in less than twenty-four hours he was almost indifferent to every thing around him. His pulse was feeble and quick, his breathing anxious and variable, and he vomited all that was administered. The efflorescence had a purplish shade, and was chiefly limited to the trunk; the fauces were of a deep dusky red, without an appearance of ulcer-

ation, and there was no preternatural heat on the surface, except about the abdomen. The tongue was white in the middle and moist, the stomach flatulent, and the belly somewhat distended. Early in the attack, his skin was well and frequently rubbed with flannels dipped in warm brandy; but this expedient, which I have sometimes seen useful, did not induce any degree of re-action, and it was therefore abandoned. An antimonial emetic was prescribed, which acted repeatedly without producing the least good, nay the stomach became more irritable after its operation. Calomel was next exhibited freely in mucilage, but as the greater part of it was rejected, the bowels were never copiously moved: the debility increasing apace, wine was liberally given, which however only seemed to increase the vomiting, and sink the strength more rapidly. The patient expired on the third day, covered with petechiæ. Several hours before his death he passed his stools and urine involuntarily, and the matter thrown from his stomach was dark as coffee, and had an offensive, sourish smell. On examining the body after death, the throat did not appear to have been much affected; but the brain and liver were found engorged with grumous blood.

One Monday evening, a female child of a strumous habit was seized with chilness and vomiting, but, making little or no complaint, was not attended to at the time. She lay tolerably tranquil during the night, and the next morning ap-

peared to be in a dull, confused state of mind, indifferent to surrounding objects. About this time, a copper-coloured efflorescence came out partially on the trunk and extremities, and medical advice was obtained. She had an emetic ordered, and after its operation a purgative, which moved her bowels freely. At no period did any preternatural heat arise on the skin. Under the cordial plan, she gradually sunk into a stupor, and died in convulsions on the ensuing Wednesday. In this case the principal congestion was most probably in the brain. The child was so quiet throughout, that she might have been deemed by a careless observer rather sleeping than dying, until the convulsions supervened. The above two examples may tend to prove the unavailing nature of the ordinary method of treatment, while the following, as contrasts, will show the efficacy of bolder measures.

A boy in the seventh year of his age, who had been exposed to the contagion of the scarlet fever, became pale, languid, sluggish, and oppressed. For the first day it was imagined, that he merely laboured under the effects of a common cold; but on the morning of the second day, he was suddenly seized with a deep stunning pain in the head, attended with giddiness, oppressive nausea and retching, and anxiety about the præcordia. In a few hours afterwards a purple rash made its appearance on the upper part of the trunk and arms, and he complained of uneasiness in his throat,

which on examination was found darkly inflamed. The heat on the centre was about the natural standard, but the extremities felt cool: the pulse was low and irregular, the tongue moist, the face pale and indicating stupidity. Ten grains of calomel and the same quantity of jalap were exhibited in mucilage, and repeated at the end of two hours; and although both doses were retained, yet no evacuation followed. As the head evidently grew more disordered, and the general oppression greater, it was forthwith determined to venture upon venesection. About six ounces of blood were accordingly abstracted from the jugular vein; and shortly after the operation, the patient was immersed in a warm bath, and frictions applied to the skin. The good effects of this treatment were soon very manifest; yet, without any loss of time, another dose of calomel was exhibited with jalap, and in about three hours, five or six very plentiful, dark, slimy, bilious stools were passed. From that period, there seemed a fair prospect of recovery, which was finally effected, through the agency of calomel and other purgative medicines. In this instance, the most palpable symptoms of congestion existed, especially in the brain; but from the load at the stomach, and anxiety about the præcordia, taken in conjunction with the appearance of the stools, there is reason to conclude that the liver was likewise affected.

An intelligent girl, in the tenth year of her

age, who had previously been rather unwell, was attacked with the scarlet fever four days after exposure to the infection. The efflorescence was of a dark colour, and receded soon after its appearance, although the throat remained permanently red and a little swollen. She referred her disorder to the head, heart, and stomach, where great uneasiness and oppression existed, which she could not distinctly define, but which she felt were the causes of all her suffering. The pulse was small and intermitting; the breathing sometimes slow and interrupted, at other times short and hurried; the stomach flatulent and distended; and the mind apprehensive. About nine hours from the occurrence of the urgent symptoms, eight ounces of blood were taken from the arm, the patient was immersed in a warm bath, and frictions afterwards employed, as in the former instance. Considerable relief was obtained from this treatment; but all the urgent symptoms were not decidedly overcome, until the liver, skin, and bowels had been freely excited by full doses of calomel, the warm bath, jalap, and the sulphate of magnesia. In this and the preceding case, the cure was completed within five days, and wine only late and sparingly exhibited, to ward off some appearances of debility which followed the depletion.

The foregoing cases forming almost an epitome of my treatment in the regular form of the congestive scarlet fever, it seems unnecessary to swell these pages by bringing forward any more; but

in justice to the practice, I must observe, that it has been equally successful in other severe examples. The depletory and alterative plan will succeed in many instances, if it be opportunely adopted, and properly pursued afterwards. Upon the whole, however, the regular form of the congestive scarlet fever will be found generally less manageable than any other modification of this disease. We have still much to learn concerning the phenomena, nature, and treatment of the congestive varieties of fever in general, and I know of no department of medical science which is more deserving of universal attention. Would the inhalation of oxygen, or of some other invigorating gas, be serviceable in the outset, by directly communicating power to the heart, and thereby tending to restore the lost equilibrium of the circulation? Would heated vapour do good, applied to the whole surface, and followed by frictions of oil to excite sweat, after the manner commonly used by the Asiatics? Would any advantage be derived from mercurial fumigations, or from the employment of electricity—the first as a rapid salivant, and the last as an immediate excitant of the heart and arteries? These questions may be answered hereafter, and they are put here, not positively to recommend the agents specified to an actual trial, but merely to suggest them as probably deserving of consideration: for certainly there is no class of diseases, the cure of which is enveloped in more obscurity, than that of congestive fevers; and it is anxiously to be wished,

that inquiry may be concentrated upon a point which, from its great importance, needs an immediate illumination.

While these sheets were passing through the press, I received the following case from Dr. Howell of Clifton. It remarkably illustrates the great efficacy of blood-letting in a highly congestive form of the scarlet fever, and is therefore inserted here, in the precise and impressive language of that enlightened physician. After a long march in wet weather, a lieutenant, of rather a full habit, aged 18 years, was seized with Scarlatina, and the eruption receded on the second day. He grew gradually worse; delirium came on, followed by subsultus tendinum to an alarming degree, and he picked the bed-clothes and raved incessantly for four nights and three days. A dozen leeches had been applied to his head previous to the occurrence of the delirium, and the cold affusions and purgatives had been resorted to in vain.

In this almost hopeless state, the pulse evidently sinking, and the action of the heart scarcely to be felt, the temporal artery was opened, as the most rational, and only chance of relief. For some time the blood scarcely trickled down his cheek, and the motion of the artery was not perceptible. In a few minutes, however, the pulsation became evident; the artery seemed every instant to be regaining its strength, and the blood was at last

thrown to the distance of a foot or more. So instructive a lesson could not be disregarded; and to have bled by ounces, continues Dr. Howell, might have terrified us before relief was half obtained; we therefore persevered until the circulation was relieved, and the heart more equable in its action. The young man became more tranquil, and in a few hours fell into a profound sleep, which lasted nearly twenty-four hours. He awoke free from every symptom and recovered in the most rapid manner. The blood taken away weighed fifty-three ounces and a half.

This case, I must add, may be paralleled, but cannot be surpassed in interest; and no lover of medical science or of human nature can peruse it without a feeling of admiration towards the man who suggested and applied the remedy. Under such circumstances, most practitioners would have had recourse to diffusible stimulants, and the patient would have perished from the pressure of the congestion, and from the practice pursued. In all probability there was a load of blood about the right side of the heart, which had occasioned congestion in the brain, and other parts, by retarding the return of venous blood; but the determined abstraction of so much of the vital fluid brought the heart again into play; and the natural balance of the circulation was fortunately once more restored. From instances of this nature one would suppose, that the action of the heart extends even through-

out the venous system; for when that action is nearly suppressed, the blood is almost stagnant in the veins; and when it is fairly renewed, the blood flows freely from the punctured vessel. But waving all speculation in such a case, it may be held up as a practical example of superior skill for others to imitate, where great congestion exists in conjunction with that semblance of debility which has so often deceived practitioners into the fatal employment of excitants.

During convalescence from the congestive varieties of the scarlet fever, dropsical effusions are very apt to appear, unless great care be taken to preserve the surface from cold, to keep the bowels regular, and to avoid the exhibition of diffusible stimulants. For some time after the removal of the congestions, there is a considerable relaxation of the general habit, combined with an irregular disposition to arterial excitement; and any cause which increases this disposition, may occasion an internal or an external dropsy, as the absorbent system seems unequal to counterbalance any excess of the secretions. Indeed, similar precautions to those above stated, ought always to be taken after the decline of all the various forms of the scarlet fever; for even in those accompanied with an increase of heat and of excitement, dropsy is a sequela not unfrequently observed. The excessive excitement of the capillary arteries in such affections, occasions an ultimate loss of tone in the extremities of those vessels; so that the secretory

organs seem to admit of a sort of serous transudation, from the augmented impetus of blood which succeeds the stage of collapse, and which accompanies convalescence. But independently of these particulars, there is frequently a tendency left to increased actions about some of the viscera on the retrocession of the scarlet fever: and hence we sometimes see hydrothorax, ascites, or the affection called hydrocephalus, follow this disease, in combination with clear marks of increased actions in the regions where they are seated. In every point of view, therefore, the common practice of administering excitants during convalescence is most exceptionable. An effort of nature to restore the strength always follows febrile diseases, and that effort is of itself sometimes so great as to require to be restrained by moderate evacuations; but where it is elevated by measures exciting the heart and arteries, it produces determinations of blood, which lead to dropsical effusions, or to inflammations of the viscera. Even the diet should be mild for some time after the abatement of acute fevers; and on this account, milk is one of the best articles of food, as it supports the strength, without irritating the nervous, or stimulating the vascular system.

When in attendance, some years ago, upon a family in which the scarlet fever existed, I was requested to look at a boy who had just sickened, for whom I prescribed a laxative, and a mild emetic afterwards, as the symptoms were then apparently slight; but early next morning I re-

ceived an urgent message to visit him, and to my surprise found him expiring under coma and convulsions. The severe congestive symptoms had come on soon after I left the house the preceding day, and his parents deeming them nothing more than the common precursory signs of the fever, did not give me timely information of the change; and thus the delay of a few hours was to them an irretrievable loss, and to myself the occasion of the deepest regret. Other examples of a like insidious nature have come under my observation, and they seemed utterly inexplicable, until I obtained some morbid examinations; and then the manifest mischief of the visceral congestions, and the consideration of the previous symptoms, enabled me to comprehend their pathology. Acquainted with such impressive facts, I never afterwards saw any child sickening of the scarlet fever, to whom I did not pay the most assiduous attention; and I would strenuously advise every practitioner to be most circumspect at that early period; for then, by proper depletion and the warm bath, he may often prevent the accession of highly congestive symptoms, or remove them when just coming into existence. The throat of children should be examined daily wherever the scarlet fever prevails; and some preternatural appearance there will frequently indicate the approaching distemper, before any complaint be made. But this is more especially the case when adults are under the influence of the contagion of the disease; and in them I have seen the peculiar

slough in the fauces attended by a typhoid sort of fever, without any efflorescence upon the surface of the body.

Before concluding the subject of scarlet fever, it ought to be noticed, that most of the older authors are for, and most of the later against, depletion in the malignant forms; so various are the records of human opinion, even on matters of vital importance. The theories of medical men are constantly changing, but diseases have always been under the same influences; as the planets revolved by the same laws, whatever conjectures were framed respecting them in the lapse of ages. The opinions of men may vary, but the operations of nature are unchangeable. The three powers which affect disease, independent of the physician, are—the cause, the circumstances under which that cause is applied, and the condition of the subject upon whom that cause and those circumstances operate. Now one and the same cause always produces similar effects; and though the effects are modified by peculiarities of places, of seasons, and of patients, yet still they are reducible to varieties which observe regular laws; and if those varieties had always been marked and separated with sufficient care, instead of having been confounded in general descriptions, what now seems a chaos in physic would have presented an harmonious arrangement. One very remarkable example might be adduced, to show how the same cause produces different, yet ascertainable varieties of disease, and

that is the miasm arising from damp or marshy grounds: in one person it occasions an intermittent, in another a remittent, and in a third a continued fever,* according to the place where it originated, or to the habit in which it occurred; and notwithstanding these types of fever differ among themselves, yet singly considered, they are subject to a surprising uniformity of character. Only attentively examine the effects produced by any other specific cause of febrile disease, and it will be satisfactorily discovered, that each of them admits of a similar uniformity; and indeed it is by ascertaining the nature of each of these effects, that we are principally enabled to deduce precise rules of treatment. It has lately become the fashion to suppose that some diseases have changed their character in our times; but perhaps it would be much more correct to say, that our pathology and treatment of them have become more perfect. With respect to febrile diseases in particular, the various tissues attacked by inflammation or congestion necessarily give a diversity of appearance, independent of merely external signs; but still it is, generally, inflammation or congestion, and as such requires to be treated according to its degree, and to the habit in which it occurs. The laws of living bodies and of inert matter are most manifestly different, and vital are more varied than physical

* Dr. Cullen has excluded from his definition of the Continuæ, fevers which arise from marsh effluvia, as if they did not occasionally assume the continued type. But in the common systems of nosology, we constantly find diseases, not arranged according to their natures, but according to the theories of the respective writers.

phenomena in kind and degree; yet if we were as well acquainted with vital as we are with physical laws, we should probably find a similar uniformity in their nature. Even the epidemical influences of the atmosphere upon the human body, like the constitutional peculiarities of individuals, seem to be limited in their modifications of disease, though those modifications and those peculiarities have not yet been well arranged.

How then, it may naturally be asked, has it come to pass that so much discrepancy of theory and of treatment should exist concerning febrile diseases? There is a tendency in the human mind rather to search after the abstract essences of things, than to collect, arrange, and exhibit their phenomena as presented by nature; and this tendency, it cannot be fairly denied, has operated as powerfully in medicine, as in any other department of scientific inquiry. Hence, since Hippocrates, comparatively few have minutely noted either the varieties or the stages of particular fevers, either the peculiarities which surrounded, or which existed within patients; and hence, too, the labours of innumerable practitioners have been unproductive of good, from an implicit reliance upon the hypothesis of some ingenious predecessor or cotemporary. One conjecture or other, relative to the scarlet fever, has exerted a manifest influence over most of those who have written on the subject; so that their respective opinions are coloured by the doctrine of the day, as rays of light

are tinged by the medium through which they pass. But so far as my reading extends, all those writers who decidedly condemn depletion, either do so on the vague authority of others, or from having themselves used it partially in the first, or seen it destructively hazarded in the last stage. Indeed, a singular confusion exists both in the descriptions and in the opinions of almost all the writers who protest against venesection; for not only do they blend the symptoms of the first and the last stages together, but carry their prejudices so far, as to censure purging with the most indiscriminate zeal. It were to be wished, that they had at least paid more attention to the stages; for it is upon this point that all the difficulty, that all the discrepancy turns, in the treatment of the malignant varieties. Let one man, called very early, pursue the depletory plan, and he will save the greater part of his patients; let another, called late, pursue the same method, and he would lose every patient. It is for want of having discriminated the stages that those authors have erred in their own practice—it is for want of having discriminated the stages, that they have unconsciously misled the public through their literary productions. The late most excellent Dr. Fothergill, who so powerfully advocated the doctrine of debility in his popular essay, changed his sentiments when his experience became matured; for a little before his death he confessed to Dr. Withering, that he had long been dissatisfied with the treatment of the scarlet fever, and that in prescribing bark he had rather yielded

to the opinions of others, than followed the suggestions of his own judgment.* Those authors were successful who used depletion early, and those failed who used it late; and thus they arrived at different conclusions respecting the same measure, because it was employed under circumstances essentially different. But we are coming fast round to the old practice; for purgative medicines, through the agency of Dr. Hamilton, are now universally employed in the Scarlatina Anginosa; and if to this method that of the cold and warm affusions be added, we shall perhaps find the treatment of no modification of disease so much improved in modern times. The result is felt every where. Practitioners acknowledge, that the scarlet fever has become far less fatal since the introduction of these measures; and there is no denying the assertion, since the Scarlatina Anginosa is by far the most common form of the disease. But though the malignant varieties of this affection are fortunately of the least frequent occurrence, yet we must still expect them occasionally to return, and should be prepared to encounter them with a promptitude and decision suitable to their extreme urgency.

In bringing my observations to a close, I must once more repeat, that as the partial application of the active means recommended would not answer

* See p. 10, of An Account of the Scarlet Fever and Sore Throat. The Second Edition. By William Withering, M. D. F.R.S. Birmingham. 1793.

in the early stages of the highly malignant scarlet fever, so their use in the last would be inevitably mortal; and I must, therefore, earnestly caution those who may hereafter try them, alike to avoid their partial and their late employment. Suppose any practitioner were to use one very partial affusion of cold water in the excitive stage of the Scarlatina Anginosa, or rashly to venture upon its general and repeated application in the last stage of collapse, it must be apparent that no correct inference could be drawn as to the powers of that physical agent, because it was only partially employed in the first stage, and upon mistaken principles in the last. The same mode of reasoning may be extended, with equal justness, to the use of venesection and purgatives in the malignant scarlet fever: if they be partially tried at an early period, they will hardly ever succeed; and if they be rashly used in the last stage, they will be generally mortal. In a word, their general efficacy is only to be ascertained by their fair and decisive employment from the beginning of the disease. As far as our information extends, we find a wonderful uniformity in the laws which regulate particular diseases, especially those referrible to the class pyrexiæ. But authors have frequently neglected to mark with precision the stages and symptoms which prevailed at the time that their different remedies were applied: and we well know what confusions and contrarieties a neglect of such particulars may occasion in pathology and therapeutics. In remote ages, the yellow fever of warm climates was treated

chiefly by depletion. That disease, however, having been considered in our times as a true typhus icterodes, depletion was abandoned, and the stimulant practice introduced, for which some able advocates arose, who seemed confident of its superiority. Yet a more extended and minute inquiry discovered the utter inutility of stimulants in the first stages, and they were also abandoned. Depletion was once more tried; but being in general too sparingly or too late employed, doubts and embarrassments again arose as to its propriety. Repeated observations, however, and morbid dissections, having clearly demonstrated, that the worst forms of the complaint are highly inflammatory or highly congestive, evacuants were at length early and decidedly used, and they have been found better than any other means, when promptly aided by calomel. The period, too, is fast approaching, when the conjoined or separate use of wine and bark, the extreme unction of timid practitioners, will be deemed as pernicious in the first stages of the malignant scarlet fever, as they are in those of the yellow fever; and when the superiority of early depletion will be as firmly established in the one as it has been in the other. Perhaps there is more analogy between the highly congestive and inflammatory forms of the yellow fever and of the Scarlatina than might be supposed at a first view; and as the former are sometimes fatal under the best practice, so will be the latter; and it is only by comparing the general results, that we can establish in both the superiority of the

evacuant over the stimulant treatment. It is in physic as in morals—the expediency of any thing which we do is not to be correctly ascertained by its effects in a particular case; for we must trace it through its general consequences before we can arrive at just inferences respecting its operation.

The most violent instances of the malignant scarlet fever, which were treated by wine and bark from the commencement, ended mortally in my practice; and it was the want of success which at first led me to doubt, and at last to disregard the scholastic doctrines which had held my mind in subjection. The purgative mode of cure was, therefore, substituted; and though it very often relieved for a time, yet it rarely succeeded in the end. Inquiring into the cause of such failures through morbid dissections, I found that they proceeded from local inflammations or local congestions. So important a truth being once fairly known, venesection, calomel, and other purgatives were promptly used at the onset of such cases. This treatment, with the occasional aid of stimulants, answered my most sanguine expectations in many instances; though, as already stated, it did not succeed in some, and it would be unreasonable to expect that it should hereafter be always efficient. There are examples of highly acute fevers, from whatsoever source arising, which set all applications at defiance; the attack being so concentrated, and the progress so rapidly destructive. But happily

such cases are comparatively rare in this country; and it is my firm persuasion, that most of our worst fevers may be arrested at the first attack by right treatment. At the same time we must be careful to discriminate the characters of the affections for which we prescribe; since, though it may be dangerous to delay active means in some varieties, it is highly injudicious to employ them in all. Practitioners of experience must have observed, that the scarlet fever is sometimes so mild a disease, as hardly to require any medicines; that at other times it is more strongly characterized, though still readily controllable by purgatives and the cold or tepid affusions; and that it is also occasionally so violent from the beginning, as to render the agents commonly used quite unavailable. All these circumstances must, therefore, be borne in mind, that the remedies may correspond to the different appearances which the disease assumes. It is in the severest forms, and in them only, that extraordinary measures are required; and to extend those measures to other forms, would be a perversion of the principles laid down in these pages.

THE MEASLES.

THE MEASLES.

FROM an impartial consideration of the facts which have come before me, I am inclined to think, that our plan of treating the measles is too uniformly active, when the eruptive fever is developed; and that we should be more fortunate in the main run, if we interfered less with the operations of nature in cases of a mild or moderate character. Some children do well without the aid of medicine, and infants may be easily lost from an excess of applications. It is desirable that advice should not be delayed in severe, and that it should be cautiously given even in slight examples of this disease; as loss of time may be fatal in the former, and too much officiousness dangerous in some of the latter. We are in perpetual hazard of doing too little or too much in the practice of physic. For it is at all times no easy task to make our measures just fitted for the removal of the urgent symptoms, without exhausting the resources of the system; and having once adopted speculative and practical principles, we are apt to sacrifice a great deal to maintain them, so that we sometimes cling to fallacies for the sake of appearing consistent. It is too much the custom to prescribe for the

names, rather than for the symptoms of idiopathic fevers. The same species of fever, it cannot be too often repeated, may have varieties so different, as to require different methods of treatment; and our means should be changed according to the nature of those varieties, that they may, generally speaking, be safe in each, and efficacious in all. In briefly discussing the measles, therefore, I shall endeavour to show what modifications require active, and what gentle expedients; and this distinction may perhaps be of some utility to others, as it was by carefully attending to it, that the results of my experience have become more satisfactory than at a former period.

The mere outward form and physiognomy of the measles, like those of the scarlatina, are liable to make us suppose, that there is a great sameness and simplicity in the pathology of this distemper; but the conditions of the general circulation and of particular parts, may be almost as variously affected as in typhus or in the scarlet fever, and indeed they form some of its most interesting peculiarities. Like every other contagious fever, this has a considerable range of character. In one season it will be slight, in another urgent, in a third hold a middle course, and in a fourth assume all its appearances from the most simple to the most severe: yet upon the whole, the benign and the moderate cases are much more frequent than the violent, for an epidemic only occurs now and then, in which the latter decidedly predo-

minate. Whatever may be the efficient, the final causes of this diversity of type are, first, that the measles are sometimes accompanied by a mild excitement, which begins and ends without producing visceral inflammation; and secondly, that at other times, in their onset, advancement, or decline, they are combined with internal congestions or inflammations, which may terminate favourably or the contrary, according to their degree, or to the time, or to the mode in which they chance to be encountered. It is a disease commonly mildest in the summer when the weather is temperate, and most urgent in the winter and spring when the weather is cold and variable; and so considerably is it influenced by the habit in which it occurs, that sometimes all its varieties may be seen in children of the same family, or of the same neighbourhood. At the time of its prevalence, therefore, we should attend to the states of the atmosphere, and of the constitutions of those who are placed within the sphere of its influence; since these are the two chief causes which vary the effects of the contagious essence, and to them every reigning epidemic owes most of its leading peculiarities. In unfavourable weather we should endeavour to guard even strong children against cold, and to keep the bowels open prior to the infection; as these precautions, with a light simple diet, may do much to prevent serious attacks. The risk of danger will be always greatest in those children who actually labour under some internal disease, or who are predisposed to it, before they sicken of

the measles; but especially if that disease, or that predisposition, be seated in the pulmonary organs. For under such a state of things, when the contagion begins to operate, the force of the morbid actions is spent on the peccant part; and that with a rapidity which is sometimes perfectly resistless, whatever plan may be pursued. On these accounts, subjects of this kind ought, if possible, to be removed from the place where the distemper rages, that they may avoid the chance of being infected, until a more auspicious time; and such a step is the more requisite when the children are under four years of age, because they are liable to suffer most from the circumstances here stated, and because they cannot bear the means that may be necessary so well as at a more advanced age. But when a removal into an uncontaminated quarter cannot be accomplished, the body should be prepared by mild laxatives and a light cooling diet for the probable reception of the contagion; and the moment that its effects begin to be developed, the greatest care must be paid to ward off any threatenings of mischief in a vital region. Where children have been afflicted with some previous disease, the tone of the constitution is most frequently so much subdued, that it is seldom safe to venture on powerful measures when they are attacked by the measles. It is generally better by an unceasing attention to detect the symptoms early, and to endeavour to counteract their tendency by the employment of a few leeches, a purgative, and a blister,—with the tepid bath if the

skin be of an irregular heat: these applications, if not carried too far, will be borne well at the onset, and may contribute to save the threatened organ from a decided attack; whereas more energetic means might depress the general powers, prevent the developement of an equable excitement, and induce a dangerous irritation of the nervous system.* But in vigorous habits, where there has been rather predisposition than positive disease before the accession of the measles, we may be bolder when some of the viscera seem too much congested at the commencement; for then, to the remedies already mentioned, a little blood may frequently be taken from the arm with great advantage, especially if the patient be above three years old.

It was formerly noticed, that young children and even adults occasionally die of a congested brain, without any efflorescence on the surface, from the immediate operation of the contagion of the scarlet fever; and I have had some strong reasons for suspecting, that the same affection too is occasionally produced from the concentrated influence of the miasm of the measles. In my treatise on typhus, I attempted to show, from symptoms and dissections, that more or less venous congestion always attends the first obscure

* Some children, who had previously been sickly, improve much in their health, when they get through the measles favourably; but diseased subjects more frequently either at once sink under that distemper, or become very strumous after surviving its attack.

stage of febrile diseases; and in the preceding remarks on the scarlatina, have given it as my decided opinion, that re-action of the heart and arteries, or what may be strictly called fever, is the natural cure of that venous congestion. If this doctrine be correct, a moderate excitement is favourable in those affections which we are wont to consider as febrile; and that this is actually the case, appears to me an universal and irrefutable proposition. If we could always depend upon the efforts of nature for bringing about re-action, and if that re-action just removed the venous congestions, without becoming excessive, why then there would be little or no occasion for medical interference. But it occasionally happens, that the venous congestion is so great as to overpower the efforts of nature, and that re-action would not take place at all, except through an artificial agency; and even when the re-action is developed, whether by nature or by art, it is not always exactly proportionate to the resistance which it has overcome, but, passing the salutary limit, itself often becomes a disease. In the treatment of fevers, then, there are two great circumstances to be considered: the first is, whether nature alone should be left to create the re-action; and the second, whether that re-action be mild or severe, equably diffused throughout the arterial system, or superabundant in particular parts. It may be held as an axiom, that the more marked the symptoms are in the precursory stage of fevers, so much the more intense will be the subsequent

re-action; except indeed those symptoms should be accompanied with so great a congestion, as to prevent the developement of the re-action, and thereby at once to extinguish life. The converse of the above axiom also equally obtains, as the re-action is mild in proportion to the mildness of the precursory symptoms. Two objects are, therefore, to be regarded in the first stage of febrile diseases—the one to attempt the removal of urgent congestions without loss of time, and the other to moderate the congestions even when they are not so urgent as to threaten the destruction of a vital organ. By accomplishing the first object, we may frequently save the life of a patient, which might be lost under the common routine of practice; and by accomplishing the second, we lessen the chances of an inordinate re-action, and thus the chances of danger at the same time.

It must be recollected, however, that the cases are not very common in this country where nature is not adequate to the creation of re-action; and that both the symptoms of congestion in the first stage, and those of excitement in the second, are often so slight in the measles, as not to demand any vigorous measures. Yet even in the slighter cases of the measles we shall be satisfied, on an attentive consideration, that some venous congestion does at first exist; and hence the paleness of the face, the feebleness of the pulse, the uneasiness in the head, the torpor of the bowels, and the general depression. But as the re-action

emerges, these symptoms give place to others, and instead of a deficiency, there is then an overplus of blood in the arteries. The symptoms of congestion in the more striking examples are often distinctly evident soon after the child is first observed to sicken; yet they almost always lessen as the eruption comes out, until at last all trace of them disappears in the arterial excitement. Nature here removes one action by exciting another, and if the last be sometimes dangerous, it is always less so than the first; and hence we shall find venous congestions upon the whole more perilous than arterial re-actions. If it were not for the arterial re-action which takes place in idiopathic fevers, many patients would die of apoplexy, or of an engorgement of some thoracic or abdominal viscus. When the efforts of nature are too feeble to create the stage of re-action in the measles, the brain and lungs have appeared to me to suffer the main pressure of the congestion: but such cases are happily so rare, that I have not seen more than perhaps a dozen in the course of my experience, in most of which the eruption came out partially at last. Two cases of this sort fell under my inspection, in which the patients died comatose and convulsed, and the lungs were greatly oppressed in both, before the disease of the head supervened. An interrupted respiration may chemically and mechanically affect the functions of the brain. It may chemically affect the functions of the brain, because the blood finally destined to be transmitted to that organ does not fully undergo

the usual changes in the lungs; and it may mechanically affect the functions of the brain, because the attendant impediment to the pulmonary circulation, retards the free return of venous blood from the head. It is one of the prognostics of Hippocrates, that a delirium is bad when it comes on in acute complaints of the lungs: indeed any approach to cerebral disorder may be accounted dangerous in pectoral diseases; and we occasionally see children, as well as adults, who had become unnaturally loquacious, die suddenly in convulsions, while labouring under pneumonia.

But in some incipient instances of the measles, coma supervenes unexpectedly, without any affection of the chest; and though patients commonly expire apoplectic, recovery at times takes place under very unfavourable circumstances. Not long since I saw a child who lay about four days as if in a profound sleep, with its head drawn considerably backward, and its pupils much dilated; but, contrary to my expectations, it gradually recovered from this state, after the application of some leeches to the temples, a blister to the scalp, the warm-bath, and the exhibition of active purgatives. In some cases I have seen, before the rash came out, the symptoms most strongly indicate a threatened attack of what is called hydrocephalus internus; but they have almost always readily given way to the abstraction of a little blood, purgatives, and the tepid bath; though

I shall hereafter show that the supervention of water in the brain, at a later stage, is no uncommon circumstance in certain modifications of the measles. In the example of a child who had been recently infected, but who had neither watery eyes, sneezing, nor catarrhal symptoms, I pronounced, somewhat hastily, the disease to have an actual tendency to water in the brain; because there were intolerance of light and noise, contracted pupils, great pain in the head, reddish eyes, and extreme restlessness. But on abstracting about three ounces of blood from the arm and exhibiting a cathartic, the rash of the measles appeared, and the disease ran a mild course; and though the measures employed had probably averted the affection of the head, yet the parents of the child felt satisfied that I had mistaken the case, because in the first instance I had not suspected the measles. This fact may serve to put others on their guard as far as their own reputation is concerned, and may also teach them not to rely always too confidently on the diagnostic signs laid down in books; but whenever an epidemic prevails, the practitioner should be especially careful in the delivery of his opinion as to the real nature of an incipient fever, since it may or may not assume the reigning character.

Some authors have asserted, that convulsions are favourable in the preliminary stage of the measles; but I cannot consider them strictly so, on account of the symptoms with which they are combined.

At the attack of the convulsions, the signs of great venous congestion will be found distinct, the surface pale for want of blood, and the arterial circulation so languid, that the pulse can scarcely be felt: but as contraction of the muscles both accelerates the venous and the arterial circulation generally, and promotes a flow of blood to the skin particularly, can the pressure of the convulsed muscles upon the deeper seated veins, in any measure, relieve those internal congestions, which immedately threaten life? That muscular action accelerates the arterial circulation is universally allowed by physiologists, and well known even to common observers; and that it likewise both accelerates the venous circulation, and determines to the skin, may be shown by familiar examples. The stream of blood is increased from the vein punctured at the bend of the arm, by moving the muscles of that arm; and hence we often make patients turn or grasp something in the hand when we wish rapidly to abstract blood. The external veins of every person are more or less distended by exercise, the skin becomes warmer, and the perspiration augmented, from the greater determination of blood outwards; and these changes are very conspicuously displayed in those who follow laborious occupations. Now in reflecting upon the various effects of muscular action, it has sometimes struck me, whether convulsions themselves might not possibly be the extreme struggles of nature to equalize the venous and arterial systems, how ineffectual soever those

struggles may often prove; and does not this suggestion borrow some support from the circumstance, that the shivering fit, which is somewhat related to convulsions, usually contributes to bring about the re-action in certain fevers? Yet were it possible to demonstrate the correctness of such an opinion, we ought not to leave the convulsions to themselves in the commencement of the measles, inasmuch as they are the effects of urgent causes, which ought if possible to be speedily removed; and we accordingly find, that measures are then often efficacious, which lessen internal congestions and determine to the skin, such as small or moderate abstractions of blood, with active purgatives, the warm bath, and blisters.

From the drift of the foregoing remarks it will appear, that we ought only to use decisive measures in the first stage of the measles, when the symptoms of congestion are immediately urgent; and even then we should not push the depletion too far, as moderate evacuations, aided by the warm bath, will answer a much better purpose. It must surely have been cases of this character which Dr. Mead had in his recollection when he said, that it is best, if possible, to bleed *before* the eruption;* for were this principle applied indiscriminately to every instance, it might be extremely pernicious, by far the greater number of

* The Medical Works of Dr. Richard Mead. Vol. ii. p. 152. Edinburgh: printed by A. Donaldson and J. Reid, for Alexander Donaldson. 1763.

patients requiring nothing more than mild purgatives and tepid drinks. Nay, there are some in whom the signs of indisposition are so slight, that they may be safely left to nature in the commencement: though even in cases apparently the mildest, we should direct parents to watch narrowly the progress of the symptoms; for sometimes before the eruption appears, or just as it appears, a sudden change takes place, and a tendency to coma, or great oppression of the breathing, marks an incipient and serious attack on the brain or the lungs. Yet the consideration of these uncommon occurrences must not be allowed to incline us too strongly to the practice of depletion; because they rather form exceptions from the general character of the early symptoms which, from being milder, require less powerful measures at the attack. And from an extensive trial, I can confidently recommend purgatives as well suited to lessen the congestions in the first stage, and thereby to make the re-action more moderate than it would otherwise have been in the second. What was formerly advanced in respect to the primary symptoms of certain examples of the scarlet fever, may tend to illustrate the point under review; but in the measles there will be no occasion to administer drastic purgatives in nineteen cases out of twenty, and indeed in many they would do harm. Simply procuring about two, or at most three moderate motions in the twenty-four hours, until the eruption appear, will be all that are necessary; and when the eruption has appeared, still we must be

more sparing of purgatives than in the scarlatina, although to a certain extent they are then highly useful, as shall afterwards be shown.

It has been my particular wish, both in this and in a preceding publication, to draw the attention of the faculty to the primary stage of fevers, because it has hitherto been too little regarded; to that stage in which the elements of the future pyrexia are formed, and which, though occasionally very severe, most frequently seems to suspend for a time many of the functions between health and disease. The venous congestions which exist in this stage of the measles not unfrequently leave a predisposition to local affections, even when they have given way to the impulses of the general re-action; for it is a law in the animal economy, that when the natural action of any part has been diminished, a proportionate accumulation of excitement mostly takes place there afterwards. Now as the force of the morbid actions in the measles, from the first to the last, is generally most concentrated in the respiratory organs, the congestion of the first stage necessarily gives them a tendency to increased action in the second; and hence it is, that the chances of pulmonary, or indeed of any other internal inflammation, are greatly lessened by the generally mild, and sometimes moderate evacuations, which have been recommended in the first stage of the more distinctly marked cases. It is really no substantial objection to this practice, that we cannot be positive whether the symptoms for

which we prescribe will always terminate in the measles; since those symptoms are always attended with the risk of constitutional fever, and often with that of topical determinations, and since the same rules apply to them, whether they arise from contagion, from cold, or from any other cause, which first depresses and then excites the system. The sources of what we technically denominate fever are very various; but their grand effects may be reduced to a few similar classes, as shall be explained at the close of this work. In the primary stage of the most remarkable examples of the measles, the vital functions are depressed by a superincumbent load of venous blood: mild or moderate evacuations, therefore, but especially by the bowels and the skin, so lessen the venous fulness, as to render it no greater than necessary to ensure a benign re-action; and indeed in the slightest cases such evacuations are unnecessary, because the congestions are then not more than sufficient for the purpose of effecting the desired degree of excitement. Moreover, it is not the chest and head only, that may now and then suffer from congestion before the coming out of the rash: for there is sometimes uneasiness in the region of the liver, the secretions of which are liable to be retarded or vitiated; and this organ, too, is more frequently affected when the subsequent stage of re-action runs high, than most authors appear to have imagined. Yet I cannot refrain from again guarding practitioners against the extremes of doing too much or too little at this early period of the more notable cases; and where

the shock from the contagion is great, its *first* depressing effect should be past before blood is drawn, as in the case of severe injury from external accidents.

Before closing the consideration of this interesting part of pathological inquiry as it respects the measles in particular, it ought to be remarked, that retching or vomiting, but especially the last, seem to be among the most striking means by which nature brings about the re-action; and therefore, it may not be irrelevant to inquire whether we should second these efforts when present, and whether we should imitate them when absent. Now when vomiting has been present without any alarming symptoms, I have always found it best to give nothing auxiliary, except the blandest diluents; but where the lungs have been excessively oppressed, and particularly where vomiting has been absent, I have often seen the most striking relief follow an antimonial emetic, which may fairly be ranked among the most efficacious remedies in pulmonic congestions. In great venous congestions of the head, vomiting is generally present, and it has probably been too much the fashion, from reasoning *à priori*, to regard it as an unfavourable circumstance; in some instances, however, when gently assisted by warm water, it has appeared to me productive of much benefit, though, from an early and perhaps a weak prejudice, I have seldom dared to give emetics in similar cases, unless where the stomach was loaded. We have still much to learn

respecting the use of emetics, and the power of vomiting, in changing the incipient disorders of the circulation in the first stage of fevers. Having been so much accustomed to the exhibition of purgatives for some years past, we have neglected emetics in a most signal manner; but I am fully persuaded, that they will be found both applicable and beneficial on the first attack of many acute affections, attended with venous congestion. In the first place, an emetic gives an universal shock to the system, well calculated to produce a complete change of condition; in the next place, it occasions a considerable pressure over the abdominal viscera, and may thus remove engorgements there, particularly about the spleen and liver; and in the last place, it powerfully determines the blood to the surface of the body, an effect highly desirable in most internal congestions. But what the precise conditions are, under which emetics ought to be exhibited, and what those under which they ought to be avoided, I cannot for the present pretend to determine; at the same time I think, that a cautious and well conducted inquiry into their influence, in the beginning of congestive diseases, is a desideratum in the practice of physic. Almost all the medicines which Hippocrates used as purgatives, were likewise possessed of an emetic property; and some of our preparations, such as those of antimony, which cause vomiting and purging at the same time, often resolve an incipient fever with astonishing rapidity. The most important circumstances of the first stage of the measles hav-

ing now been noticed, the subsequent stages may be pursued with the more propriety and advantage.

Between the time of receiving the contagion of the measles and its actual operation, a few days, or one, two, or even three weeks may intervene ; and from the first signs of sickening to the appearance of the eruption, a period may elapse of twenty-four hours, or of several days. In general, however, the affection of the skin is later in coming out in this distemper after the formation of the fever, than either in the scarlatina or in the small-pox. Several writers have stated, that the rash appears on the fourth day of the fever in the measles ; but as the term fever has not always been strictly defined, their meaning is liable to considerable ambiguity. If under the word fever, these writers comprehend the interval of time between the first palpable signs of indisposition and the appearance of the eruption, the statement is not generally correct, agreeably to my observations ; for I have seen the eruption appear at different periods in different individuals during this interval, as it is then greatly dependent on the states of the systems infected, some of which re-act slowly, and others rapidly. But if, as it would really seem, these authors mean by the fever the developement of the arterial re-action, still I must contend, that the rash does not uniformly, does not generally appear on the fourth day from the first developement of the re-action ; and in support of this opinion, I can most confidently declare, that I have seen the

rash come out at all times between the first and the seventh days from the occurrence of the re-action, though perhaps the most common period of its appearance is between the third and the sixth day. To settle this point rightly, we must not fix the general term of the eruption from a particular constitution of the measles, but rather endeavour to deduce it from an extended view of different constitutions; and probably if we were to make ourselves acquainted with the circumstances under which the rash appears so variously as to time, we should be able to account for differences in this particular, and to arrange them with a natural precision. It is true, that there is both regularity and simplicity in the operations of nature; but we frequently frame our ideas of this regularity and simplicity, not from a comprehensive, but from a limited survey of her works. The current notion about the eruption generally coming out on the fourth day of the fever in the measles, has probably been taken up and propagated on the authority of Sydenham: but that illustrious author appears himself to have drawn his inference from *one* epidemic, which prevailed widely in the year 1670; and he perhaps too precipitately marks as something anomalous another and less extensive epidemic of the year 1674, in which the eruption came out sometimes sooner, and at other times later, than the fourth day of the fever. Numerous errors of opinion and of practice, in many important concerns of life, may be traced to an implicit reliance on distinguished authorities; so natural

it is for man, who is the creature of obedience, to pay a sort of spontaneous respect to his superiors in rank, in reputation, or in genius.

The watery, heavy, loaded eye, the catarrhal symptoms, the less diffused appearances of the rash, and the greater feeling of inequality to the touch on certain parts of the skin, are *generally* among the best marks of distinguishing the measles from the scarlet fever; and for the welfare of the patient, not to mention the credit of the practitioner, these and other diagnostics, which practical authors have laid down, should be strictly regarded, as the two diseases not unfrequently rage at the same time, particularly in damp weather. The catarrhal symptoms often exist several days before the rash, and seem in the onset to be among those effects of the internal congestions previously noticed; but they are seldom relieved by the eruption at first, nay generally become worse for a certain period afterwards, and are always connected with less or more disturbed action of the arteries, when the fever fully emerges. Though inflammation may and does sometimes occur during the eruptive fever, it must not be rashly supposed present in every instance where the cough is frequent: since, in many cases of measles, there is at that time merely an excitement, which does not amount to inflammation, of the capillaries in the tracheal or the bronchial lining; and although this excitement may maintain a troublesome cough for a time, yet in the end it very frequently

abates, like an ordinary catarrh, as the constitutional fever subsides, and as the expectoration of mucus becomes free. In the small pox, we see the peculiar pustules not only upon the surface of the body, but upon the internal fauces, and they have been known to spread even much deeper: now in every case of the measles I suspect that an affection, similar to that of the skin, exists on the mucous membrane of the air-passages; and perhaps in some instances this affection occupies a larger portion of the pulmonic system. In healthy habits, however, it often disappears without any manifest inflammation having been induced; as we may perceive among the children of the lower orders of society, where the measles are so frequently left to run an uninterrupted course. But in constitutions of a different cast, in those predisposed to pulmonary diseases, by original structure, or by incidental causes, the excitement passes on to pneumonia, bronchitis, or to some similar inflammation in the thorax; and it must, therefore, necessarily be a point of great consequence to be able to form such a diagnosis as shall enable us to determine when we should withhold, and when we should use the lancet. By long associations we are led to intermeddle even with all the slighter aberrations from health, without sufficiently reflecting that they may be only temporary, and that the system itself may have the power of returning to its ordinary movements; and indeed we are often prompted to this by the entreaties of patients or their friends, by

the high estimation in which the public holds whatever is medicinal, and by that selfish principle which too often prompts us to do something for the sake of appearance, where nothing is actually required. When pain or soreness in the chest, oppressed breathing, general anxiety, and restlessness are absent in the eruptive stage of the measles, we shall have no occasion to bleed; and where these are present, venesection, either general or local, will almost always be necessary. But sometimes it happens, that the breathing is very hurried, the cough frequent, and the pulse much quickened, about the first coming out of the rash, and yet if we wait a day or so, we shall find the respiration gradually improve; and no doubt Dr. Willan alludes to cases of this kind when he judiciously observes, that those who from doubt, or from some collateral motives, are led to await the event, usually find the pulse become moderate and the uneasy respiration terminate in twenty-four hours.* In irritable children, and especially in infants, the respiration often becomes extremely anxious on an attack even of simple fever, wholly unconnected with pectoral inflammation; and this is more particularly the case when the bowels are disordered. We must be most careful to discriminate such a state of breathing from that which commonly attends pulmonic inflammation: nor indeed is this difficult, because the former is seldom permanently the same, but varies so much

* On Cutaneous Diseases. Vol. i. p. 232. By Robert Willan, M.D. F.A.S. London: printed for J. Johnson. 1808.

at different times, that the patient will seem now much oppressed, and again easy; whereas in the latter there are no changes of this sort in the respiration, for it is so considerably oppressed, as never to be entirely easy. Besides, the anxious breathing, which arises from irritation, is generally increased by the erect position, and that which arises from inflammation more or less diminished: in the first, the child now and then obtains pretty tranquil slumbers, with little motion of the chest; but in the last, the sleeps are always very disturbed, and the chest may be seen heaving up and down with an unnatural labour. When any part of the pulmonary system is inflamed in children, both the diaphragm and the abdominal muscles are generally thrown into an inordinate action; so that if the belly and breast be exposed, one cannot fail of being struck with the circumstance; and forcible movements of the last named muscles may often be remarked about the navel. In very young children labouring under pleuritis or any similar affection, we cannot of course obtain an account as to the feeling of pain, soreness, or uneasiness, and the like, that may exist in the chest; but the permanent oppression of the breathing, the above mentioned state of the diaphragm and abdominal muscles, the general restlessness, and the peculiar anxiety of the countenance, may lead to a tolerably correct opinion.

When the mucous membrane of the bronchia is attacked with inflammation in the measles, the

face becomes pale, the lips are commonly of livid or bluish shade, and some parts of the skin are cooler and others hotter than natural; while the child, by being attentively noticed, may be heard to breathe through phlegm lodged in the air passages, and the chest will be seen to heave laboriously. Whenever, therefore, these symptoms occur, with an anxious countenance, and a quickened or oppressed pulse, the practitioner should be prompt in his proceedings; for this is one of the most alarming species of inflammation in the measles, and is perhaps the most frequent cause of death. In fact it assumes the characters of the peripneumonia notha, a disease which Sydenham has so well described, but with the nature of which he was unacquainted for want of the light of morbid anatomy; but in all of such examples a careful examination after death will show, that the mucous membrane of the air passages is the part chiefly implicated in the inflammation, and the bronchia will be found loaded with morbid mucus frequently mixed with pus.

Where there are no signs indicative of visceral inflammation in the beginning of the eruptive fever, the principal thing to be at first ascertained is, the degree of the general excitement of the arterial system: now when this excitement is by no means great, gentle purgatives and tepid diluents will almost always bring it to a favourable close; but when it runs higher, we must increase the evacuations by aperients commensurately, still

taking care to determine the blood to the surface by a bland, warm beverage. It has occurred to me more than once to have seen the mild and the moderate instances of the measles treated variously—sometimes by bleeding and blisters, sometimes by purgatives and tepid drinks, and sometimes by nauseating doses of antimony, according to the different views of the respective practitioners. The results of these opposite methods fully showed to me, that the recoveries were the most numerous and expeditious from the treatment which moderately moved the bowels, and determined to the skin; and I am now the more convinced of the superiority of that treatment in such cases, from an attentive review of many which took place in a recent epidemic. From the general drift of my opinions, no one, I think, can fairly accuse me of being afraid to recommend the lancet; but my anxiety is great to guard against its future abuse, from the full conviction, that it is too indiscriminately, too rashly employed in this disease; and I must therefore repeat, that in the examples under consideration, it is very seldom requisite, and often hurtful, in very young subjects. Neither upon the whole can I agree with those practitioners who, adopting the maxim of Hippocrates, that nature is the best physician, always leave the less urgent cases of the measles to themselves, or at most prescribe some placebo for the sake of form; because though such a conduct may oftentimes be safer than the contrary extreme, yet there is a middle line to be pursued,

which will conduct us in the main to the most successful results. The measles may be a disease of simple excitement at the onset of the eruptive fever, but who can take upon himself to say, that they will observe the same character throughout their progress? In the Epidemics of Hippocrates, we have many cases of febrile diseases which were allowed to proceed without impediment. We accordingly find, that the excitement in some, though apparently slight at first, gradually gained ground, and at last fatally disordered the functions of some vital organ; and a similar occurrence may be daily observed at this time, where acute diseases, from some chance or other, have run a natural course from their beginning to their end. At the same time it must be allowed, that even when left wholly to themselves, febrile diseases occasionally have a favourable termination; as we may perceive in the ancient work above noticed, and as we may learn from our own experience, but more especially in those fevers termed idiopathic. Yet as as we can never with certainty infer from the first, that an apparently moderate excitement will not produce inflammation if allowed to advance uninterruptedly, it is safer, as a general rule, to pursue such precautions as may at least prevent its increase; and though we may safely leave the *mildest* cases of the measles to nature, there are probably few practitioners who are not now disposed to admit, that the adoption of the aperient plan has been essentially serviceable in many fevers, which were

only formidable from the local effects resulting from the universal excitement.

From the earliest records of physic, it has been common to distinguish what are denominated idiopathic from symptomatic fevers; and though this distinction may have been too strongly insisted on, as shall afterwards be shown, yet it is certainly of practical utility to attend to it on some occasions. For in the fevers which we strictly denominate idiopathic, the local affections of an inflammatory nature are invariably secondary of the general excitement, and not a primary part of the original disease. It is true, indeed, that an ancient doctrine has lately been revived, with additional claims to notice, in which every fever is considered as the product of some local inflammation; but this doctrine, however beautiful from its simplicity, and however respectable from its ingenious supporters, is so far from being generally correct, that local inflammation is far more frequently the effect than the cause of the constitutional disturbance termed fever. If we wanted any proofs of the truth of this assertion, they might be found abundantly in some of the febrile affections of children, which commence without any mark of local inflammation, and yet in their advancement are accompanied with clear traces of visceral inflammation; and this is so liable to occur in the measles, that attacks unalarming in the onset may become serious towards the close, from the supervention of an inflammatory disease of some vital

organ. It has been here and elsewhere noticed, that venous congestion, and not the arterial disorder called inflammation, is the essential part of the first stage of most fevers; and the venous congestion seems not unfrequently to leave a tendency somewhere to inflammation, which is often called into existence by the mere continued force of the general excitement. It is upon this principle, therefore, that I deem it safer to procure mild or moderate discharges from the bowels and from the skin in the less urgent cases of the measles, than to allow them to take a natural course; and the propriety of this treatment will be the more apparent, when we reflect, that it may not only prevent sudden inflammations, but those of a slow and insidious kind, which are so liable to arise out of an uninterrupted excitement.

In the apparently moderate instances of this disease, small doses of castor oil, of the sulphate of magnesia with the infusion of senna, or of rhubarb and magnesia, may be so exhibited as to procure about two evacuations in twenty-four hours, during the progress of the fever; and when the excitement is somewhat greater, four or five grains of calomel may be daily added to the above medicines, and this preparation is then more necessary, as the abdominal secretions will usually be found vitiated. These simple methods, with an occasional small opiate at bed time, and a strict antiphlogistic regimen, will answer every purpose in a large majority of such examples; and where the

chest may be seemingly threatened by a topical determination of blood, an antimonial emetic, with the tepid bath, will frequently preclude the necessity of having recourse to more vigorous means. Indeed a little of the pulvis antimonialis may often be combined advantageously with the laxatives, as it tends to keep up an action on the skin, aided by the warm diluents. Some authors have stated, that even moderate purging is apt to cause a retrocession of the rash in the measles, but I have not met with an instance of this kind in my own practice; and so far from having found laxatives at all hazardous, when properly administered, they have almost invariably appeared useful throughout the eruptive fever. The dread of aperient medicines is probably to be attributed to the influence of an old doctrine which was once in the highest repute, and which, descending from the faculty to the public, is still firmly rooted among the common people, especially in the minds of old nurses. The abettors of this doctrine supposed that, by emptying the vessels, the peccant humors, which ought to be discharged, were prevented from coming out by the skin, their proper emunctory; and upon such an airy basis were founded many imaginary fears, which long turned professional men from an inquiry into facts, by which they might have been at once dissipated. When we consider, that some of the ancients, and particularly Alexander, who flourished in the time of Justinian, successfully exhibited purgatives in acute fevers, it is somewhat remarkable, that they should

afterwards have fallen into general disrepute. We owe it chiefly to Dr. Hamilton, that their reputation has been restored in modern times; and if that excellent physician had given them a fair trial in the measles, he would have found their efficacy unquestionable; although they cannot, or rather ought not, to be carried so far in this as in the scarlet fever, on account of the peculiarity of the rubeolous eruption and of the pectoral symptoms. When a copious diarrhœa occurs spontaneously at the beginning of the stage of re-action, we sometimes see it check the progress of the rash, while the breathing at the same time grows more oppressed; and such occurrences should caution us against instituting any thing like hypercatharsis, which might have similar effects at this period. There is a very striking sympathy between the lungs and the skin, and between the skin and the bowels, in the measles; insomuch that excessive purging diminishes the flow of blood too much towards the surface, and this effect re-acts, in its turn, unfavorably on the respiratory organs. But on the contrary, a gentle action on the bowels is always beneficial: it restrains the general excitement, and wards off topical determinations, without the risk of oppressing the chest. In proportion, therefore, that excessive purging is to be censured, so is the moderate use of aperients to be commended in the class of cases which has just been considered; but during their exhibition and operation the skin should not only be guarded from cold, but tepid diluents should be given to maintain the circulation of the surface.

It is one of the most correct and valuable observations of Hippocrates, that burning fevers seldom get a considerable head where the belly is loose; and it is the peculiar advantage of laxatives, that they are applicable to all of such affections, whereas venesection is only proper for the more aggravated forms.

The excitement, then, may be so much controlled in numerous cases of the measles, by laxatives, antimonials, and the antiphlogistic regimen, that we may dispense with venesection; but the certainty of this fact should not make us invariably rely on these measures, as the disease is not of one uniform character. Inflammation may suddenly supervene in the beginning of the eruptive stage, or it may gradually arise during its progress. When it supervenes suddenly, it is in general strongly marked, but when it arises gradually, it may be insidious for some time: and these two forms of inflammation, the one acute and the other sub-acute, should be equally the objects of consideration, that we may attack the first promptly, and not be deceived by the second. The signs of the acute inflammation of the chest have been already enumerated; and the sub-acute inflammation of that quarter may be best detected by daily attending to the respiration, which becomes more or less oppressed as it supervenes. The mucous membrane of the trachea or bronchia, the pleura or the parenchyma of the lungs, are the parts most frequently attacked by inflammation: but sometimes it begins about

the tonsils or in the pharynx, and, suddenly or gradually spreading to the wind-pipe, constitutes the laryngitis of some recent writers, or the more common affection called the croup, or, being deeper seated, bronchitis; though the fact is, that the mucous membrane of the larynx, trachea, and bronchia, is most frequently more or less affected throughout its extent. When the mucous membrane of the windpipe is inflamed, the secretions of the villous coat of the intestines commonly become morbid: indeed there is a sympathy between tissues of the same structure, which, though Bichat has alluded to it, is still very open to investigation. Next to the lungs, the liver is most liable to inflammation, which in that organ is generally so obscure as to be masked under the pectoral symptoms: but it, or some similar disease in the belly, may always be suspected where sickness or vomiting continues after the coming out of the rash; and where a diarrhœa occurs at this early period, with occasional griping and hurried respiration, that also is often connected with some abdominal inflammation. Flatulence of the stomach, unnatural stools, and pain or soreness on pressure, are among the surest signs of such affections; and when the patient cannot turn upon the left side without uneasiness under the ribs of the right, the liver is decidedly disordered. Before the appearance of the eruption, clear marks of cerebral fulness often exist, but these almost always recede after its free appearance; so that inflammation of the brain is rare during the height of the measles, except the

rash suddenly recedes. Indeed the sudden and premature fading of the rash is most frequently the commencement of some internal inflammation or congestion of a serious kind.

When there are sufficient grounds for inferring the existence of inflammation in the measles, general venesection should mostly be employed as early as possible; and in those obscurer cases, where the symptoms rather indicate than reveal inflammation, the best general rule will be to try local bleeding, as this cautious procedure may do good in the beginning, and cannot do any harm. It should, however, be our constant endeavour to proportion the measure of the depletion not only to the degree and stage of the inflammation, but to the powers and peculiarities of the patient. We shall hardly ever have occasion to regret when we bleed at the onset of inflammatory diseases; but when we venture upon general venesection late, we most frequently risk whatever chances of recovery may remain. In the commencement of inflammatory diseases we operate on vantage ground, and may proceed boldly; but our position is reversed in the last stage, and great caution is then necessary at every step. The strength is only suppressed in the first stage, it is exhausted in the last. General bleeding arrests the topical disorder in the first stage, without weakening the system further than is necessary for the removal of that disorder; and the general debility resulting from the loss of blood is much less than that which the un-

impeded disease would have caused, not to mention the tendency of inflammation to derange the structure, or to destroy the functions of the affected viscus. But towards the close of inflammatory diseases, the energy of the heart and arteries, with that of the whole body, is wasted from the local and universal excitement; and general venesection at that time exerts little or no influence on the topical disorder, whilst it has an inverse one on the system at large, which it may immediately and mortally overpower. Yet between the first and the last stage, and particularly in subacute inflammations, there is a middle one in which moderate venesection is often very useful: moreover it is a principle of physic, that whenever any just reason exists for hesitating about the employment of general blood-letting, local should always be preferred; and in young children the latter will sometimes do much good, when properly assisted by purgatives and blisters. Great difference of opinion prevails among writers relative to *general* blood-letting in the acute complaints of young children, some advising and others censuring the measure. In this, as in every medical dispute, we must endeavour to separate our prejudices and partialities from those fixed principles which an unbiassed experience has established. Sydenham asserts, that general bleeding may be as safely performed in young children as in grown persons; and he proves its efficacy, in those, by having employed it successfully in peripneumonic fever, in convulsions from dentition, and in

severe cases of hooping-cough. But, although on the whole the depletory practice has maintained its ground in the measles since the time of that illustrious physician, many practitioners have abandoned general for local bleeding in very young children; and so far as I have been able to collect from modern publications, the change is not confined to this disease alone, but has been extended to most of the acute affections of such subjects. One would naturally suppose, that this change, sanctioned as it seems to be by numerous authorities, was a substantial improvement; nevertheless, perhaps, a candid inquiry might prove, that if the older authors neglected local bleeding too much, the modern have committed a similar mistake with regard to general bleeding in young children; for I believe it will be found, that in some instances general is preferable to local bleeding, and *vice versâ*, whilst again in others a combination of both may be best. In all the most acute attacks of the visceral inflammation of young children, general is better than local bleeding in the first instance, because it makes a greater impression on the universal excitement, and on the topical affection; but in the less urgent attacks of disease, where there appears to be rather increased determination to, than positive inflammation in, an internal part, local abstraction of blood is perhaps superior. Besides, as the latter, too, may be preferable in young children of a delicate frame, so in those that are robust, the former has the most decided advantage; and both may sometimes be employed

with excellent effect, where the violence of the symptoms indicates the vital necessity of immediate relief.

An expert surgeon will hardly ever be baffled in bleeding young children; for if a vein cannot be found at the back of the hand, or at the bend of the arm, a branch of the temporal artery, or the external jugular vein, may easily be opened, but especially the latter; and indeed the external jugular is decidedly the best place to bleed children, when we are desirous to free a vital organ from fulness by the rapid abstraction of blood. The integuments immediately lying over the external jugular vein may be drawn up between the fingers, and then cut transversely, the better to expose this vessel; after which it ought to be pierced, very slightly oblique, and the blood will commonly flow in a stream, if the vein be pressed by the thumb a little below the opening. Or when the right jugular vein is opened, a bandage may be passed over it and fastened under the left arm pit, its direction of course being reversed when the left is opened; but if the operator can secure the vein from rolling, he may at once penetrate it through the integuments, which is often the best mode. When a sufficient quantity of blood has been taken away, the vein should be carefully secured, and frequently examined afterwards, if the child be restless; for owing to an omission of such precautions, I have known it bleed again very profusely and dangerously, but especially when children had

been neglected in the night.* But after having made so many preliminary observations respecting venesection, it may be naturally inquired, how much blood ought to be taken away in the inflammatory diseases of young children? It would be impossible to impose any rule correctly applicable to every case. At the completion of the first year, three ounces may be accounted a moderate bleeding, four ounces at that of the second, and five at that of the third; but after a child has passed his fourth year, and has been tolerably healthy before, he will bear general bleeding much better than prior to that period. Some surgeons of my acquaintance draw blood much more freely than above stated in the inflammatory affections of young children; and on some occasions, I have myself gone considerably further with advantage, but then the symptoms have been extremely violent. It has always appeared to me one of the nicest points in the practice of physic, to bleed young children judiciously when attacked with visceral inflammation; for if we stop too short, the inflam-

* A professional friend bled a child, that laboured under the croup, from the external jugular vein; and the difficulty of breathing continued so great afterwards, as to force the blood out repeatedly from the orifice, though compresses had been carefully applied. At last he passed a very fine needle through the incision, which he closed with the twisted suture, after the manner that the veins of some of the lower animals are secured. This answered the purpose completely. The child, however, had previously lost an excessive quantity of blood, but it ultimately recovered. In opening the external jugular vein in children, we shall perpetually expose them to the risk of hemorrhage, if the vessel be cut across; but this will seldom be the case, if it be divided in a very slightly oblique direction, as has been already recommended.

mation goes on and destroys them; and if we advance too far, the excess of depletion is destructive, though it should subdue the inflammation. The young differs from the mature constitution in having a more intimate and exquisite relation, by sympathy, between the vascular and the nervous systems; so that more powerful effects are produced from depletion in the one system, and from irritation in the other, than are observable in adults. Nervous irritation hurries the circulation more in children than in men; and loss of blood produces more irritation in the former than in the latter. Now we hardly ever see children labouring under any inflammatory complaint without the nervous system being highly irritated at the same time; and we must constantly bear in mind, that we have a double object in view—the first to arrest the inflammation, and the second to allay the irritation. It is on account of this mutual relation, that moderate bleedings are generally so efficacious, and large ones frequently so hurtful in the inflammatory fevers of children; for the first check the inflammation without increasing the irritation, whereas the last increase the irritation to so high a degree, that it often exhausts the vital energy. Let any one attend to the pulse of a young child after moderate bleeding in an inflammatory complaint, and he will feel that it is generally calmer than before; but after profuse venesection, he will find it tremulously rapid, the whole system participating in the nervous agitation. After bleeding, therefore, it is of great consequence to keep chil-

dren as tranquil as possible, and if much irritation should supervene, it ought to be allayed by the tepid bath, or by an opiate; indeed where very great irritation succeeds venesection, I am confident that many children may be saved by the exhibition of a few drops of laudanum, with a little light food afterwards. These general hints are specially applicable to the measles when combined with inflammation, and when occurring in children under four years of age; for if we be moderate in the use of depletion, we shall most frequently save them, whereas if we bleed too profusely, they will generally sink under the shock which the nervous system sustains.

When inflammation attacks the pleura during the eruptive fever, it generally spreads to the lungs, so that the latter after death will frequently be found harder than natural, from an effusion of lymph into their substance; and this appearance of the lungs of children who die in the measles is perhaps more common than after the fatal termination of simple pneumonia from cold, or a like ordinary cause. In attacks of this nature, it will commonly be best to combine general and local bleeding at the same time; for the first will directly abate the force of the universal excitement, which partly maintains the topical disease, and the last will have a direct influence upon the inflamed portion of the pleura, by reason of the free anastomoses between it and the integuments of the chest. When these steps have been taken, but not till

then, a blister may be beneficially applied over the site of the pain. It has sometimes struck me very forcibly that the precipitate application of blisters to the chest, before general or local blood-letting, is a prejudicial practice; at least I have occasionally seen hydrothorax rapidly follow it, from the increase of the general and topical excitement which blisters, thus applied, had apparently produced. This point, therefore, is perhaps deserving of further investigation in the acute pulmonary inflammations, to which it chiefly relates. In conjunction with the above measures, purgatives should be moderately administered; but more especially if the liver or some other abdominal viscus is simultaneously inflamed. Affections of the chest may not only exist simultaneously with those of the liver in this distemper, but they may also follow as an effect of inflammation in the latter organ, and then the mucous membrane of the trachea is more liable to be attacked. When some of the thoracic viscera are solely inflamed, *laxatives*, rather than purgatives, should be exhibited; as the last often tend to diminish expectoration, an effect rarely witnessed from the first. When the mucous membrane of the trachea is itself inflamed, or when the bronchial passages are loaded with phlegm from pulmonic, pleuritic, or hepatic inflammation, an antimonial emetic frequently gives great relief; and it may sometimes be advantageously repeated when the secreted mucus so accumulates as to impede the respiration, and thus to oppress the whole system. In such examples, the continued

use of nauseating doses of antimony are sometimes highly beneficial after the operation of an emetic. If the breathing be laborious from any pulmonary inflammation or congestion, nature often seems to attempt their removal by a copious effusion of serous fluid from the capillaries of the air passages: where this effusion is very freely expectorated, patients generally do well, but if it be retained as it is secreted, it not unfrequently tends to produce suffocation, particularly in children; and it is in cases in which the expectoration is defective, that the shock of an emetic, by dislodging the phlegm, and inducing a change in the action of the heart may save the life of some patients. The warm bath, strongly impregnated with salt, is often beneficial in pulmonary inflammations, but especially in those of children. After its use I have often seen the wheezing and dyspnœa much abated; and indeed it may be ranked among the best secondary means for such affections. It may be recurred to at any time when the general habit is highly irritable, or the respiration greatly oppressed; and under these circumstances it sometimes has all the soothing effects of an opiate, besides relieving the chest by means of a copious perspiration. But still I must again be allowed to caution the practitioner against an excess, or a deficiency, of depletion. There is a golden medium between these two extremes, which at once arrests inflammation, without inducing general exhaustion, or a consequent arterial re-action combined with nervous irritation; and this golden medium must be the

more particularly observed with children labouring under inflammations, as they may be equally lost by too small, as by too large evacuations. Nor should we continue to teaze children, as is often done with adults, by a long succession of various expedients, as this would exhaust the strength, even if it subdued the disease. All our efficacious agents should be brought to operate within a short time, and then we should endeavour to allay the united irritation of the disease and of the remedies by mild treatment; for if we fail to stop the inflammation in the first instance, by persevering in active and irritating measures, we shall only contribute to precipitate the patient to the grave.

It must not, however, be supposed from what has just been written, that inflammation is an invariable occurrence during the eruptive fever: since, for my own part, I have not very often seen it take place where proper attention has been paid to lessen the congestions in the first stage, and to moderate the excitement and allay the irritation in the second; though at the same time it must perhaps be admitted that inflammation is not uncommon at this period, when the early symptoms have been mal-treated or neglected. Many authors state, however, that inflammation is not very common at this period of the measles, though from the writings of Morton, Mead, and others, it is clear that epidemics have occurred, which were throughout most decidedly inflammatory; and this appears to have been particularly the case in

the time of the last mentioned writer, for he says, that the measles always brought with them a peripneumony which required bleeding.* But one of the most remarkable accounts on record of this distemper being combined with inflammation during the eruptive fever, is that of Sir William Watson, in the fourth volume of the Medical Observations and Inquiries; though it is certainly to be regretted that he designated the epidemic which he saw as a putrid species of the measles. This defect, however, was interwoven with the pathology of the times, and is not, therefore, strictly his own. So far have we advanced since then, that no correct writer would now call any disease putrid, the primary symptoms of which were highly inflammatory. But if Sir William erred as to the imposition of the name, it must be allowed, that he has most ably illustrated the nature of the epidemic; and his division of the symptoms into a first and second stage is a master-piece of pathological arrangement. In the first stage, the inflammation ran high, and active depletion was useful, as nine patients out of ten were saved in the worst modifications: whereas in the second stage, this practice was entirely inadmissible, on account of the general collapse, and the local derangements which the first stage had effected, when it held an uncontrolled progress. Dr. Willan has attempted to show, that Sir William mistook the scarlet fever for the measles; but the

* See vol. ii. p. 154, of the edition of Mead's Works, before quoted.

ground of his objections is perfectly untenable, and it is to be regretted that this able physician should have advanced so vague an opinion on the subject. Among numerous proofs that might be adduced in support of the accuracy of Sir William Watson's judgment, it is enough to mention, that the peculiar, sloughy sore in the throat, which attends all the aggravated forms of the ardent scarlatina, was absent in the disease that he has described;* indeed the two most prominent peculiarities of the epidemic, the early appearance of the eruptive fever, and the putrid symptoms in the last stage, I have myself sometimes witnessed in the measles. The history of such violent modifications of this complaint is well calculated to caution us respecting that variety of form which all epidemics are liable to assume; since it is one of the most common and lamentable errors of systematic writers, to lay down limited rules of treatment under a certain name, as if the character of the disease thereby designated were invariably the same.

One or two observations have already been made concerning the irregularities in the character of the rash, but it may not be amiss perhaps to be somewhat more particular on this point. In most of our methodical works it has been stated, that the sudden and premature retrocession of the

* See Medical Observations and Inquiries, by a Society of Physicians in London. Vol. iv. p. 132. The Second Edition. London: printed for T. Cadell, in the Strand. 1772.

rash is followed by dangerous symptoms: but although this is the case in many instances, yet in some no bad symptoms whatever supervene, and therefore the assertion has been expressed in too general terms. Whilst in attendance upon patients labouring under the measles, I have commonly left directions to immerse them in a tepid bath of salt water, immediately on the untimely fading of the eruption: and this expedient, with frictions of the skin afterwards by warm flannels, has generally answered every purpose in the slighter, while it has contributed to relieve even the more urgent examples. Rhazes seems to have used the vapour bath and frictions in occurrences of this sort; and certainly if we can only restore the eruption by a free flow of blood to the surface, the relief will most frequently be immediate and permanent. Cold applied to the skin, and an attack of some visceral congestion or inflammation, are the most usual causes of repelling the rash before its common time: but in two or three instances I have seen it disappear permanently after copious venesection,—a proof that the eruption consists in some peculiar state of the extreme vessels, without any effusion under the skin.* If the partial or general fading of the rash be connected with some visceral congestion or inflammation, the plan of treatment must be pur-

* Whenever faintness is induced by bleeding in the measles, the rash almost always disappears either entirely or partially, or at least it becomes much less vivid; but it generally returns to its ordinary state as soon as the re-action again takes place.

sued which has been before pointed out for similar affections; and it must be recollected, that in urgent instances the execution of this plan must be prompt and decisive, the local congestion or inflammation being then paramount to every other consideration. On such occasions, the lungs, the brain, the liver, or the bowels, in general bear the pressure of the internal disorder. The affection of the lungs may be known by the sudden and marked disturbance of their functions, and that of the brain by coma and delirium, the first a sign of congestion, and the last of inflammation; whilst the affection of the liver or bowels will be denoted by some abdominal uneasiness, which is for the most part combined with an apparent looseness, and therefore we must be mindful not to confound an inflammatory attack of this kind with simple diarrhœa. And at the same time we ought to be equally attentive not to mistake for genuine coma, the mere heaviness or sleepiness which so often occurs in the beginning of the measles, from which the child can always be roused at pleasure, and which disappears as the rash comes out; for although this heaviness or sleepiness be an indication of a degree of cerebral congestion, yet it is generally cured by the eruptive fever, or may be removed by laxatives; whereas the genuine coma is always alarming, it requires more active measures, and is attended with twitchings, startings of the tendons, convulsions, or with an obvious bending back of the head towards the spine. After an attack of the

measles, when all cause of present apprehension is past, and when the eruption has faded at its usual term, children often fall into a long and quiet sleep, in a natural position, and with a warm, moist skin, slow pulse, and gentle respiration. But this is only the tranquillizing repose of nature, which succeeds disease, like serenity after the storm; and it is neither to be confounded with coma nor interrupted, being almost always a certain presage of convalescence. There is, however, one congestive disease connected with irregularity in the eruption, which deserves something more than general remarks, on account of its uncommon and serious character. Occasionally children are at once attacked by an extreme difficulty of breathing, mostly without, or with very little expectoration, on the first appearance of the rash, which either soon entirely recedes, or remains out partially, and is of a darker colour than natural. The face in such instances is very pale, and the skin usually of an irregular temperature, cold or cool in some places, and of a preternatural heat in others, while the pulse is low, quick, and struggling. The patient, if not promptly relieved by the warm bath, moderate bleeding, an antimonial emetic, a purgative, and a blister, sinks rapidly under an apparent load of phlegm in the bronchia, with wheezing and the most laborious respiration; and on examining the body after death, the lungs will almost always be found congested with dark blood, the capillaries of the mucous membrane of the bronchia highly injected, and the air pas-

sages obstructed by an effusion of unnatural mucus. The pathology of this form of the measles seems to resemble that of certain cases of spasmodic asthma, in which there is venous congestion of the lungs, with an obstruction in the circulation of the capillaries of the bronchial lining, and in which a mucous effusion takes place into the bronchia, apparently as an effort of nature to relieve the respiratory organs from the great surcharge of blood. But as children cannot bear an oppression of the lungs so well as adults, so they far more frequently sink under its influence than the latter. In union with the means above stated, I have seen in some instances of the disorder under discussion the most decided benefit, after depletion, from a large dose of calomel, a little camphor and pulvis antimonialis with a few drops of laudanum, this combination acting powerfully on the skin; though, upon the whole, bleeding, blisters, antimonials, and the warm bath are the most to be relied on in such concentrated attacks of pulmonary affection.

In the most notable forms of the irregular measles, where the excitement is either suddenly suppressed or very unequally developed, the disease does not run a determinate course, generally ending fatally or favourably before the usual time; and the same observation obtains in those irregular forms of the scarlet fever which have been already discussed, and is perhaps alike applicable to the small-pox, the plague, and genuine typhus. But where the excitement is universally developed,

the measles, like some other exanthemata, have a sort of determinate duration, whatever may be done. The cause of this probably is to be sought in the continued irritation of the morbific principle generated during the excitement of the measles, by which the complaint acquires the property of infecting others indefinitely, who have not previously been under its influence. This determinate duration of the measles, and similar distempers, has led some medical writers to doubt of the efficacy of medicine; since they seem to conceive it cannot be of any material benefit, seeing that it has not the power of controlling the continuance of the disease. Nothing, however, can be more fallacious than such an argument; for if it be granted to the full, that medicine cannot shorten the measles, still it does not follow that it is of no use. When an universal excitement of the arterial system takes place in a sound subject, it is at first unaccompanied with local inflammation, and sometimes ends without producing any: but if it be not moderated, even in such favourable habits, it not unfrequently involves some important organ in inflammation during its advancement; and when such an excitement occurs in a constitution where some viscus had previously been in a weakened or faulty condition, that viscus is sure to become inflamed, from the mere impulse of the hurried circulation. In fact the more cautiously we investigate the primary and successive phenomena of febrile diseases, the more we shall be convinced that local inflammation is always the result of the general excitement, in those fevers

which are ushered in by a cold stage; and as the seat of that inflammation is generally determined by some latent defect which had before existed in the organ attacked, so the weakest habits are the most, and the soundest the least, subject to visceral inflammations from any general shock that takes place. In what are called symptomatic fevers the visceral inflammation is soon declared, and therefore it has commonly been deemed the link by which all the morbid chain of symptoms is suspended; but in what are called idiopathic fevers, the inflammation generally arises at a later period, and more insidiously, from the continued excitement gradually obstructing some part of the capillary circulation. It is on this account that what we term idiopathic fevers require such attentive watching from their commencement, and in their course; because, if we daily moderate the excitement, we shall generally succeed in ensuring a favourable issue, by preventing topical inflammations.

The cold affusion has been successfully tried in the eruptive stage of some cases of the measles; and where the heat of the surface was intense, I have myself, in a few instances, used the *tepid* affusion with apparent advantage. Still, however, the skin is frequently so susceptible of external impressions, and the pulmonary organs thereby so liable to be affected, that I suspect the cold affusion will never be generally applicable, as in the ardent and open forms of the scarlet fever. It is

true, that among the lower orders of society, children are not unfrequently allowed to go about without restraint in the air, while labouring under the milder attacks of the measles; and as several thus exposed pass through the disease well, this alone affords proof, that the application of cold to the skin is at least not prejudicial in such examples. But then, again, in the greater number of those cases to which I have been called, where the rash had suddenly receded with alarming symptoms, I found that the children had been negligently exposed to cold air; and surely examples of this nature authorize us to infer, that however harmless such an exposure may sometimes be, it is at other times highly dangerous. We therefore seem to want facts to enable us to determine under what precise circumstances the application of cold to the skin is useful at one time, and prejudicial at another; and it would be the extremity of rashness in the present state of our knowledge to conclude that the cold affusions are suitable to all the forms of this disease, because they have been advantageously applied in a particular form. Yet if any remedial agent should answer in one variety of an epidemical disease, we are too apt to suppose that it may be successfully extended to every other variety; and it is from this our natural tendency to generalization, that so many and opposite measures are recommended in some fevers which bear the same name, but which have such diversities of character as to demand different plans of cure at different times. In many instances of the

measles, great care is even required to regulate the temperature of the rooms where the patients are confined; for I have repeatedly seen pulmonary inflammations follow the too liberal admission of cold air, where the skin was morbidly sensible to the variations of the surrounding atmosphere. We must, then, act with becoming caution in respect to advising any measure which makes a powerful impression on the surface; and when we find the sick complaining of chilliness in an ordinary temperature, we should not even employ the tepid, much less the cold affusion. Indeed, having in no instance dared to use the latter, I am totally incompetent to give an opinion respecting the circumstances under which it ought to be recommended; but reasoning from the analogy of the influence of cold air, I am naturally led to infer, that its use will be found very limited in this disease. It must not, however, be presumed from the tenor of these remarks, that I am adverse to ventilation in the measles; on the contrary, I think it highly beneficial when properly conducted during the eruptive fever; being fully satisfied, that if a cold atmosphere is often hazardous, a close stifling one is equally, if not more so, in every variety. All the cases of measles which I have seen attended with dark petechiæ and hemorrhages in the last stage, had been confined in heated and ill ventilated apartments in the first; and it is somewhat remarkable, that though I examined two cases of this nature, where there had been copious discharges of black blood by stool, I

found no coagula in the intestines, but slight traces of inflammation of the villous coat in one, and none in the other. So far as my observation has extended, I should decidedly say, that a large, airy chamber is in general best for rubeolous patients; though at the same time, that the temperature should be as equably regulated as possible, between the ranges of 50° and 60° of Fahrenheit's scale. That in the main a moderate degree of warmth is most favourable to the measles, would sufficiently appear from their generally being less severe in mild than in cold weather, and surely this well-known fact should teach us to surround our patients with an agreeable temperature, rather approaching to that of our summer than of any other season. By way of more effectually guarding against sudden impressions on the surface, aperient medicines ought commonly to be given early in the morning, that they may operate before bed-time; for when a child is disturbed by their operation during the night, particularly in the spring or winter, he is more apt to receive cold in this disease, than during the day when the chamber is usually of a more congenial temperature. Indeed at all times during the action of purgatives, we should be cautious in exposing the surface, and therefore the use of a bed-pan is frequently requisite: but such wariness is unnecessary in the simple and inflammatory scarlatina, the subjects of which bear the application of cold air to the skin, not only without prejudice, but with advantage in the height of the fever. Some practitioners of my

acquaintance are very partial to the use of the carbonate of ammonia in the simple cases of the measles, and give it both during and after the eruptive fever, by way of determining the blood to the surface; and when there were no decided evidence of inflammation, I have certainly seen it useful on some occasions by creating a gentle perspiration, while the patient was kept in a regulated temperature.

Nor is it during the eruptive fever only, that we have to guard against too low or too variable a temperature; for the greatest attention is required in that respect when the rash fades away. Most of the inflammatory affections which follow the measles arise from imprudent exposures to cold: and therefore I am fully confident, that many children might be saved by confining them within doors, and by clothing them properly for some time after that complaint has disappeared. These precautions should always be adopted in the winter and spring. Even in summer convalescents should only be allowed to go abroad in the middle of fine days, and not without some additional apparel. It has been well remarked, that more skill is shown in curing, but more wisdom in preventing a distemper;* and it were to be wished, that medical men would constantly

* Fruits of Solitude, in Reflections and Maxims relating to the Conduct of Human Life. By William Penn. See a new edition, p. 52. London: printed for James Phillips, George-Yard, Lombard-Street, 1793.

bear this maxim in their recollection, for the benefit of those prone to disorders. After every febrile disease, the body is left weaker than before the attack : in proportion to this weakness it becomes the more incompetent to resist impressions internal as well as external ; and the impressions themselves have an additional power from the highly susceptible state of the capillary arteries. But if in combination with the universal weakness, and with the preternatural susceptibility of the capillaries, a decided predisposition to disease should any where prevail, whatever communicates a general shock to the system may convert the predisposition into actual disease ; and the disease will be seated in that organ where the predisposition existed in the greatest force before the communication of the general shock. Now it has been before noticed, that the pulmonary organs are more particularly affected in the measles than other internal parts ; and hence we more frequently find the predisposition engendered in them, which is converted into inflammation when cold is applied after the retrocession of the rash. Nevertheless, the lungs are not the only internal organs which are liable to suffer during the developement and rise of the fever, since we often have evidences of something morbid in the hepatic and intestinal secretions ; and hence a diarrhœa is apt to arise afterwards, which Sydenham supposed to proceed from a flux of the peccant effluvia on the lining of the bowels, but which is almost always connected with increased action of the liver,

as well as of the villous coat of the intestines. The brain is sometimes unusually affected in the beginning of the measles; and though the free eruption on the surface generally suffices to remove that affection, yet it sometimes leaves a tendency to and is followed by the complaint called hydrocephalus, as shall elsewhere be more distinctly noticed. If we turn from the interior to the surface of the body, the skin and the eyes appear to participate largely in the morbid actions of the measles, but the skin in particular, over which the disease may be said to be diffused, and upon which its main force is spent in the simpler attacks; and hence, too, originate the predisposition to disease in both these organs, which are so often attacked with inflammatory disorders, when the eruption has abated. It is not, however, the influence of cold alone that may produce any of the affections above mentioned, after the termination of the measles; for an improper diet, or stimulating drinks, may create an universal excitement, and that again so re-act on latent and local predispositions, as to produce acute, sub-acute, or chronic inflammations. In another place, I endeavoured to expose the inconsistency and danger of allowing too generous a regimen to those convalescent from fevers; and I must here repeat, that it should be our object to restore the powers of the system gradually, by a light and cooling diet. If we attempt to communicate strength at once, we not only defeat the end in view, but risk the life or the health of the patient; for if an

obvious inflammation of the viscera should not thereby supervene, an obscure one may, and cause months or years of suspense and suffering. So far from rich food and stimulating drinks being requisite during the convalescence of young or naturally robust subjects, evacuations by purgatives are frequently required to restrain the excitement, which naturally succeeds the stage of collapse; and it ought to be our business daily, for some time after the subsidence of the original fever, to regulate the returning tide of the arterial system, that it may not pass the boundaries of health, and become the occasion of disease. Besides, if we load the stomach with improper articles of diet during convalescence, we are almost certain to produce disorders of the digestive organs; and these again create nervous irritation, which, in its turn, leads to vascular excitement general as well as local, and thus trains of morbid actions may follow each other, particularly in weak organs.

From the foregoing hints, then, it would appear, that inflammatory attacks are liable to take place internally as well as externally, after the measles themselves have entirely subsided. When any part of the lungs is the seat of inflammation, the treatment already laid down must be pursued according to the nature of the inflammation, and to the age of the patient. Nor must we fail under these circumstances to make due allowances for whatever degree of debility may have been induced by the prior excitement of the eruptive fever; and if

the symptoms should have run so high, during the continuance of that fever, as to demand the lancet, the depletion must be still more cautiously proportioned to the powers of the patient when inflammation again occurs, after the disappearance of the eruption. In subjects who have been much emaciated by the measles, and who are afterwards afflicted with visceral inflammation, considerable care is often required as to the applications of blisters; for the blistered portion of the skin is sometimes liable to run rapidly into gangrene, or else it becomes a sloughy sore, which is very difficult to heal, and which occasions an excessive irritation. The skin is one of the principal seats of the measles. It is exceedingly stimulated during the eruptive fever, and suffers a correspondent loss of tone as that fever declines; and as this cutaneous debility is greatest in emaciated or in broken-up habits, so the surface in them is less able to resist inflammation, without ending in gangrene, or in an ill-conditioned sore. This peculiar state of the skin is sometimes connected with derangement in the digestive functions, which ought always to be strictly attended to after the subsidence of every febrile disease. But where a tolerable degree of constitutional vigour remains after the abatement of the measles, we need have no dread of applying blisters when a visceral inflammation occurs; for then they rarely produce a sloughy sore, and when they do, the general system does not suffer so much from the irritation of it, as to counterbalance the local advantages. In cases of this nature, the

blistered part should occasionally be washed with a weak solution of the sulphate of zinc, or an aqueous one of opium, and generally dressed with the common brown cerate: but when the pain is extremely great, a poultice often gives considerable relief, and gentle purgatives, followed by small opiates, will always be beneficial. When a diarrhœa arises after the fading of the rash, it ought never to be restrained by astringents, for it is an effort of nature to carry off an inflammatory excitement of the abdominal viscera, and of the general habit. The symptoms of abdominal inflammation have been sometimes so distinct in this sort of diarrhœa, that I have ordered venesection, and with the most striking benefit; but in a large majority of examples, I have found nothing more requisite, than a dose of calomel or castor oil now and then, with mucilaginous drinks, and a small opiate, or the warm bath, occasionally to allay irritation. For my own part I must confess, that partial as I am to calomel in febrile and inflammatory complaints, I do not like to exhibit it largely or repeatedly when the system has been raised from a state of collapse into a second excitement; for in that case an unusual degree of nervous irritation mostly exists, which is often much aggravated by the too free exhibition of calomel, especially if it be pushed on to ptyalism. Yet when the nature of the stools indicate a decided disorder of the hepatic secretions in the diarrhœa in question, an occasional dose of calomel or of the blue pill will always do good; while the daily perse-

verance in moderate doses of castor oil will hardly ever fail to restore them to a natural condition. Sometimes in this diarrhœa there is a superabundance of acid in the primæ viæ, evinced by the green sour evacuations; and whenever this occurs, a little of Henry's magnesia will most commonly answer an excellent purpose. This preparation is certainly preferable to the calcined magnesia which is usually sold in the shops; but it is to be lamented that a philosopher should not be philanthrophist enough to prefer the public to his private interest. In a word, I could wish that this enlightened and excellent chymist would favour the world with the mode of preparing his magnesia. From some experiments which I have made, I suspect, that it is prepared by passing the common magnesia, mixed in water, through gauze, cotton cloth, or like substances; at least I have obtained some this way which seemed nearly as soft, and which operated as well. The superiority of Henry's magnesia over the common most probably consists in its being reduced to a finer powder. For we well know, that rhubarb, jalap, and other ingredients, operate more easily and perfectly the more minutely we can divide their constituent particles: and of this we have a striking example in the compound powder of jalap, which on account of its intimate union and extreme divisibility, acts more agreeably than either the ordinary jalap, or the super-tartrate of potass given alone. But, in returning from this digression, it may be proper to observe, that when

a diarrhœa does not follow the decline of the measles, a lax state of the bowels should always be instituted; and this, with warm clothing, a cooling diet, avoidance of cold, and the occasional use of the tepid bath, will generally prevent inflammatory attacks on the vital organs. Mead says, that by bleeding at the end of the disease, when the skin is growing dry, and the scales falling off, we may prevent a flux of humours upon the breast and intestines, and the symptoms of hectic fever and consumption;* but though bleeding may be, and sometimes is necessary at that period, yet there can be little doubt but this excellent author was too fond of the remedy in the measles, and what he has here said with regard to venesection, is more justly and generally applicable to purgatives, and a spare liquid diet.

It is a remarkable fact, that when any cutaneous affections arise after the measles, the internal organs generally remain free from disease; and even where some internal disorder has existed, I have not unfrequently seen it disappear on the occurrence of some spontaneous eruption of the skin. Indeed there are many cases of this nature already on record. At all times we should, therefore, be most wary in meddling with vesicles, pustules, boils, and the like, when they come out after the measles; for although they may be temporary blemishes on the surface, they are often the occa-

* See vol. ii. p. 152, of the edition of Mead's Works, before quoted.

sions of saving the vital works within. We most frequently ought to allow such affections to run their natural course, and cold external applications and drastic purgatives ought at least always to be avoided; as the first as well as the last sometimes suddenly repel them, and an increased action in some of the viscera succeeds. Yet when they prove troublesome from too long a continuance, or where they proceed from some disorder of the digestive organs, the warm bath, and the moderate administration of the Harrogate sulphureous water will remove them with the greatest safety; and I have found these two expedients also of the most advantage in those chronic glandular complaints, which sometimes follow this distemper, and which are sometimes connected with a vitiated state of the abdominal secretions. There can be no doubt that gangrenous affections of the skin occasionally arise after the subsidence of the measles, especially in strumous habits, and in children who have been confined in ill ventilated apartments. Several instances of this sort might be cited from respectable authorities, but not many have fallen under my own observation, and the last which I saw occurred under the lower jaw, in a recent epidemic. When ophthalmia supervenes, it is sometimes extremely urgent, and ought in general to be treated promptly, by bleeding, purgatives, and blistering. This plan will frequently arrest the disease at once, or at all events may prevent it from assuming a chronic character; but where the lining of the palpebræ is loaded with blood, the under one in each eye

may often be scarified with immediate and great benefit. If, however, a proper attention be paid to the preventive measures before recommended, the measles will seldom be followed by any of those inflammatory complaints which the vulgar emphatically call the dregs of the disease. And where there is any known or suspected tendency to pulmonary disorders, a preventive regimen should be the more rigorously enforced; for independently of those already pointed out, there are some obscure affections of the lungs, which are apt to be engendered after the decline of the rash, from the influence of cold and other causes. The general scheme of this work will only allow me briefly to advert to such affections under the head of pulmonary consumption: and even then it will be necessary to embrace some points not strictly relevant to the secondary effects of the measles; but these may be excused from the nature of the subject, to illustrate which requires the lights of collateral circumstances.

PULMONARY CONSUMPTION.

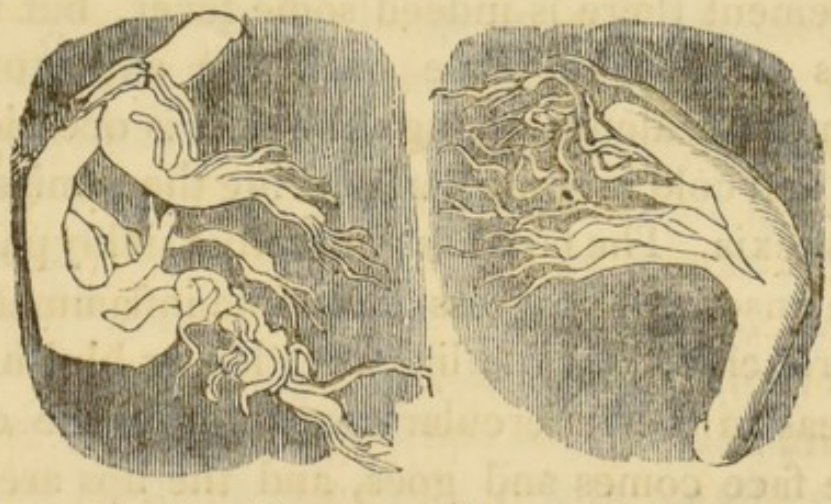
PULMONARY CONSUMPTION.

BY pulmonary consumption is now generally understood, a disease dependent upon tubercles seated in the cellular connecting membrane of the lungs; but under this title it would appear, that different diseases have not unfrequently been included in medical writings. The more effectually to clear the subject from obscurity, it should be noticed, that four affections may be mistaken for the tubercular phthisis, even when they occur in their least complicated forms; and these affections are, namely, chronic inflammation of the bronchia, ulcerations in the trachea, chronic inflammation of the pleura, and lastly chronic and simple inflammation of some portion of the lungs themselves. A few concise remarks, therefore, shall be made on each of these in their simplest states; and it will afterwards be shown, how they may be combined with the tubercular or genuine phthisis itself.

Chronic inflammation of the bronchia is sometimes the sequela of an acute attack of pulmonary inflammation: at other times it arises out of a common and neglected catarrh in irritable or debilitated habits, or follows an acute attack of bron-

chial inflammation; and occasionally it is connected with a disorder of the liver, or of some other distant organ. When it exists alone, the symptoms resemble those of an ordinary catarrh for some time; and most frequently the attention of the practitioner is only excited seriously by their continuing unabated, when they might have been naturally expected to decline. On a close examination, however, the pulse will be found quicker than natural, more especially towards the evening, and the heat of the skin at that time rather above the usual standard, though it varies in the course of the day, and is sometimes below the natural standard. These circumstances, together with the duration and increase of the cough, the frequent expectoration, and the somewhat uneasy nights, for the most part warn us of the establishment of chronic inflammation of the bronchia. Frequently there is some feeling of soreness, or of weight in the chest, and occasionally a transient stitch through the side, but scarcely ever any fixed pain within the breast. The patient can generally take full and repeated inspirations without pain, and lie equally well on both sides, though the horizontal posture usually renders the breathing more uncomfortable, as well as the cough more troublesome for a time; and a request is generally made to raise the upper part of the bed by pillows, that the shoulders and the head may be elevated during sleep. Nevertheless, I have known some patients who found relief from the recumbent posture, on account of the expectoration being then more abundant. The

expectoration, however, is the greatest, and the cough the most urgent in the mornings, when there is usually considerable wheezing, until the phlegm is dislodged which had accumulated in the night. More or less coagulable lymph is almost always spit up, sometimes in long thready pieces, but mostly in small glutinous lumps. Yet I have a remarkable preparation of this substance, which was expectorated by a young woman: it consists of two separate, soft, solid branches, spreading into many ramifications. The following is a sketch of both as they came moulded from the bronchia.



In the majority of cases, the sputa are at times mixed or streaked with blood, which comes from the small vessels of the bronchia; and at first they are often glairy, somewhat like the white of an egg, they grow opaque as the disease advances, and at length become really purulent. When this chronic inflammation is protracted, and when pus is copiously expectorated, it is attended with nearly as much emaciation and debility as the tubercular consumption; but it sometimes happens that it is not thus protracted, the supervention of an acute

inflammation unexpectedly carrying off the patient. Where it proceeds to an advanced stage, it will mostly be difficult, if not impossible, to distinguish it from the tubercular consumption, particularly when it has caused an abscess in the lungs themselves. During the early stage, however, it may be recognized by the wheezing and catarrhal character, by there being less wasting of the flesh and strength than in the tubercular consumption, by the concomitant fever then not assuming the true hectic type, and by the patient being able to draw the breath deeply without uneasiness. From the commencement there is indeed some fever, but night-sweats rarely take place until the expectoration becomes purulent; though the skin is occasionally moist and cold in some parts during the remission of the pyrexia. The face has generally a sickly pallidity in the onset and progress of chronic inflammation of the bronchia, and the lips a leaden or bluish hue; whereas in the tubercular consumption the colour of the face comes and goes, and the lips are commonly tinged with a beautiful bright red. In the beginning of chronic inflammation of the bronchia, the hands and feet are often cold, and the temperature of the surface altogether more variable than in the tubercular consumption; and though at that stage of the former, the patient may often pass uncomfortable and unrefreshing nights, yet upon the whole he obtains longer sleeps at intervals than in the latter. From the commencement of chronic inflammation of the bronchia there is most frequently some degree of inflammation in the upper

portion of the pharynx; but that inflammation also partakes of the chronic character throughout, the part being of a pale red, over which the veins are dispersed of an unnatural fulness, an appearance almost pathognomonic of chronic inflammation. The cough is generally short, tickling, and dry, in the beginning of the tubercular consumption, when uncombined with any other disease; whereas in this form of chronic inflammation of the bronchia, the cough is deep, and the expectoration free almost from the first, and continues to be copiously blended with mucus to the last. There is more stuffing, too, about the lungs in the commencement of chronic inflammation of the bronchia, and the expectoration affords more alleviation to the cough. It is, besides, accompanied with a greater load, though with less pain in the thorax; and much less cough generally occurs from a full inspiration, or from turning on either side, than in the tubercular phthisis. But when chronic inflammation of the bronchia is combined with an affection of the liver, or of some other abdominal organ, the patient in general can only lie with any degree of comfort on the right side, or flat upon his back. The quantity of the expectoration, the character of the fever, and the other circumstances before enumerated, will enable the practitioner in the onset, and in part of the advancement, to distinguish this combination of complaint from the tubercular consumption; while the furred tongue, the foul breath, the unnatural stools, the capricious appetite, the distended epigastrium, and the

uneasiness which generally attends pressure on some part of the abdomen, will sufficiently mark it from the simple chronic inflammation of the bronchia first described. Both these varieties of disease may arise after the measles from the influence of cold, or from some disorder in the digestive organs: but they are likewise not uncommon after other affections, which predispose the lungs and the liver to increased action; and they may sometimes be directly traced in delicate habits to vicissitudes of the weather, or to errors of diet and too light clothing. It has been one of the most striking peculiarities in several cases of the epidemic fever which has prevailed this year in London, that, with whatever symptoms they might commence, the mucous membrane of the bronchia has become at last acutely inflamed; and even where the acute inflammation has been arrested, it has in some instances left a disposition to chronic inflammation of the bronchia, which occasionally has been complicated with hepatic disease.

Dr. Young, in a treatise equally distingui hed for talent and learning, has mentioned a very simple and good criterion of pus. If a little of the substance to be examined, he informs us, be put between two pieces of plate glass, and, while held near the eye, looked through at a distant candle, we shall observe, even in the day time, a bright circular corona of colours, of which the candle is the centre; a red area being surrounded by a circle of green, and this again by another of red,

the colours being so much brighter as the globules of pus are more numerous and more equable. If the substance, however, be simply mucus, there will be no rings of colours; although sometimes there is a sufficient mixture of heterogeneous particles, even in mucus, to cause a reddish area alone*. But, how useful soever this test may be on some occasions, it will not enable us to distinguish bronchial inflammation from phthisis, since pus is alike expectorated in both; and we must therefore have recourse to the rise, progress, and general character of the symptoms, to enable us satisfactorily to make the diagnosis. At the termination of pure chronic inflammation of the bronchia, the capillaries in the mucous membrane of those parts will be found preternaturally injected with blood, and the branches, if traced accurately, filled with pus and mucus.

An ulcer in the trachea may be a consequence of the preceding disease, in which there is generally more or less of increased action on the lining of that part, extending from the bronchia; but it is oftener the result of a separate and insidious inflammation, which arises from various causes, and which at first is denoted by little more than a tickling cough, slight change of voice, obscure uneasiness in some portion of the trachea, occasional oppression in the breathing, and a slow increasing fever. Slight traces of inflammation

* See p. 27 of A Practical and Historical Treatise on Consumptive Diseases. By Thomas Young, M. D. &c. London, 1815.

often exist, at the same time, about the pharynx or the tonsils. In the primary stage of the tracheal inflammation, mucus and lympth only are expectorated; yet as soon as ulceration takes place, the sputa are mixed with pus, though in general neither the first nor the last be so abundant as in simple chronic inflammation of the bronchia. Some degree of lassitude and a gradual loss of flesh are now observable, and the functions of the stomach and of the liver not unfrequently become disturbed. In the progress of the ulceration, the breathing grows more uneasy, the voice thicker, and the cough much more troublesome; besides, the patient passes restless nights, and labours under a more manifest fever than before, though it is seldom attended with copious sweats, as in the regular hectic. The body continues to waste, the pulse to rise in frequency, the skin has a sallow, faded hue, and the face is for the most part pale throughout, except when transiently flushed by a febrile paroxysm; but there is rarely the circumscribed patch of bright red on the cheeks with the glistening eye, observable at the exacerbation of the hectic which attends the tubercular consumption. The expression of the countenance, too, is generally more anxious at times than in the last mentioned disease, the spirits more depressed, the mind more irritable, the respiration occasionally more disturbed, and yet no fixed pain in the chest; although an undefinable weight or load is not unfrequently felt near the middle or at the lower part of the sternum, and a

hoarse sort of noise is commonly made on taking a deep inspiration. Considerable remissions sometimes take place in this disease, so that one might anticipate recovery; but these are almost always fallacious, the symptoms generally returning with increased severity. In some cases, life is prolonged three, four, five months, or even longer, and in others it is suddenly extinguished by an acute attack, resembling the croup or pneumonia. Two cases bearing the characters of ulceration in the trachea have occurred in my practice, after the measles, and the subjects of both were manifestly of the strumous temperament. One severe instance I likewise witnessed in an old man, apparently proceeding from a large external tumour, which had long pressed upon the wind-pipe; and a few others have been presented to me, which originated from cold, or from the hooping cough, and some which were connected with the secondary symptoms of syphilis. Of the latter description I have known two examples treated as pseudo-syphilitic, under an impression, that all the symptoms resulted from sympathy with the digestive organs, which were certainly disordered; but so far from being the cause, an accurate inquiry tended to prove, that the disordered condition of the digestive organs was one of the effects of the local irritations, and of the general influence of the venereal virus. There cannot be the least doubt that certain local affections, originating from disturbances in the digestive organs, do actually attack the same or similar textures

as the secondary syphilis; but that these local diseases, taken in all their bearings and extent, assume the *genuine* characters of syphilis, is a proposition contradicted at least by the facts which have fallen under my own observation. The work of Mr. Abernethy, on the constitutional origin of local diseases, is generally allowed to be one of the most valuable which modern times have produced; and if called upon to give an opinion respecting it, I should say, in the language of Bacon, that it deserves to last as long as books last.* Yet I cannot but think, that the particular applications of the general principle of the constitutional origin of local diseases, require the utmost care and discrimination; and I am fully convinced, that from an alliance with this excellent principle, the specious doctrine of pseudo-syphilis has gained an unmerited ascendency over the minds of many practitioners. But, no longer to digress from the original subject, it may be remarked, that when an ulcer in the trachea is venereal, the real nature of it may be inferred from the other secondary symptoms of syphilis which are manifest at the same time, as the peculiar, deep sore in the throat, the copper-coloured spots on the skin, or the like; and where such symptoms have been absent throughout, the ulcer will almost always be found to have proceeded from an inflammation of a different kind. The most distinguish-

* See Lord Bacon's Dedication to the Duke of Buckingham, prefixed to his Essays Moral, Economical, and Political.

ing mark of ulceration in the trachea is pain, soreness, or some species of uneasiness referred to a particular part of the wind-pipe, in combination with purulent sputa. But before the ulceration takes place, a local uneasiness, increased by pressure, often marks the existence of a chronic inflammation: and it is of great consequence to attend to this, as it is at first sometimes so slight or so obscure as hardly to arrest the attention of patients, who even then in general spit up some pieces of lymph occasionally. It was chiefly by attending to the local uneasiness, that Morgagni detected an ulceration of the trachea in a person of distinction, and from this case he informs us, that he obtained great reputation when a young man; indeed independently of the minute and accurate detail of this interesting case, no author has given a better account of the causes and character of ulcerations in the windpipe.*

Dr. Baillie mentions, in his excellent work on morbid anatomy, that the pleura appears to be more liable to inflammation than any membrane lining those cavities which have no external opening. In confirmation of this he notices, that the chest of any patient, who had arrived at an adult age, can hardly be examined, without some traces of a recent or of a past inflammation being found; and he judiciously accounts for the circumstance, by the free communication of blood-vessels be-

* Consult the 22d Letter, in the 2d Book, of Morgagni on the Causes and Seats of Diseases, investigated by Anatomy.

tween the external and internal parts of the thorax, by the cold and variable nature of our climate, and by the manner in which the breast is so much exposed, by our dress, to the influence of the atmosphere.* If such important observations as these had been more generally regarded, it is highly probable that chronic inflammation of the pleura would not have been unnoticed in the various divisions of our nosologists: indeed I know of no author who has written expressly on the practice of physic, by whom this disease has been described, with the exception of Baglivi, and his account is very concise. Pleurisies, he informs us, are frequently unperceived, because they are painless; and this occasions gross mistakes in practice. In order, he continues, to discover these occult and indolent pleurisies, make the patient lie down on his right or left side: after he has inspired with force, and coughed once or twice, ask him if in breathing or in coughing he felt no pain or heaviness in any part of his breast; and assure yourself, that a pleurisy is seated in that place where he feels the pain or the heaviness. He concludes by observing, that he has benefited many patients from the discovery of pleurisies in this way:† and certainly his directions, in a diag-

* The Morbid Anatomy of some of the most important Parts of the Human Body. By Matthew Baillie, M.D. F.R.S. &c. &c. The third Edition, corrected. See p. 49, 50. London, 1807.

† The Practice of Physick Reduc'd to the Ancient Way of Observations, &c. Written in Latin, by Geo. Baglivi, M.D. Professor of Physick and Anatomy at Rome. The second Edition. See p. 64. London: printed for D. Midwinter. 1723.

nostic view, are very judicious, and ought to be followed in all obscure cases.

Chronic inflammation of the pleura, according to my observation, is not uncommon. When the more acute forms of pleuritis are apparently subdued, a low, obscure kind of increased action is sometimes left, which degenerates into chronic inflammation: nevertheless, this chronic is not always the relict or the effect of an acute inflammation of the pleura, as it may arise slowly, without the least dependance on the latter; and though it generally proceeds with its proper characters, yet it is at times suddenly converted into an acute inflammation, from cold, great exertion, or some similar cause. When, however, chronic pleuritis is the relict of the acute, the subject of it does not gradually or suddenly recover his health, as is usual after depletion. On the contrary, he remains weak, and is short of breath in going up stairs, has a degree of slow fever at nights, feels some oppression in the chest on lying down, and his sleeps are generally short, and disturbed. The appetite is frequently bad, or at least very variable: in some cases the tongue is foul, but in others tolerably clean; and the belly is commonly slow, and the urine scanty and high coloured. There is a short tickling cough throughout the day, which is commonly increased for a time on lying down, and often troublesome in the mornings. The patient is almost invariably easiest when sitting still upon the breech, with the

trunk supported against a sofa or an easy chair; but ask him a succession of questions, or request him to walk across the room, and the chest will soon begin to heave, and the respiration will be perceived to be much hurried. Place even a healthy person beside him, and on counting the respirations of both, the number of his will be found the greatest in the minute. If he be requested to take a deep inspiration in the erect position, he can sometimes do it with little apparent uneasiness; but lay him down flat, as Baglivi has advised, and, causing him to fetch his breath deeply, he will be almost certain to complain of pain, tightness, soreness, load, or some species of inconvenience in the chest. His pulse will often be tolerably calm in the morning when he is perfectly quiescent; but, corresponding in some measure to the respiration, it will be much accelerated by motion. Besides, there is generally a degree of soreness in the integuments of the side affected; in some cases it is exceedingly slight, and in others it is distinctly felt at all times, especially on pressure. Occasionally I have known this sense of soreness, which arises from the sympathy between the pleura and the skin, diffused over a considerable space, so that the patient felt as if he had been beaten by a rod, or as if the side had been bruised. But in the majority of examples, the soreness is limited to a particular part, and it is often so obscure, as only to be experienced on strong fits of coughing in the supine posture. Now and then the chronic in-

flammation of the pleura is rather denoted by a sort of dragging feeling in the side, always referred to the same quarter, and always attended with more or less cough; and the above feeling is especially liable to occur when the inflammation arises slowly of itself, independent of any acute disease. In such cases, an occasional stitch, or some uneasiness in the breast, and a short dry cough, generally mark the accession of the insidious inflammation; but these are often taken for the mere symptoms of an ordinary cold, as they produce little disturbance in the general health at first, and as they seem to be in some degree under the influence of the weather. But as the disease steals on, some shortness of the breath becomes apparent, the face upon the whole is paler than natural, the temper much more irritable, and the nights are uncomfortable for want of the usual long and sound sleeps. If properly examined, some pain, soreness, or heaviness, may still be detected in the right or left side, with a quickened pulse, and other evidences of an irregular fever; and a greater desire for fresh air is expressed than formerly, but particularly at nights, the curtains of the bed being instinctively drawn open by patients, and the head raised with pillows. The disease now proceeds in a similar manner as when it follows an acute attack of inflammation; and as it daily saps the foundations of life, under the fallacious covering of general debility, the cough, shortness of breathing, and fever become more troublesome, until at last dyspnœa and ema-

ciation are the two most prominent symptoms. Indeed, towards the close of the disease, the breathlessness is most frequently extreme, but great temporary relief is sometimes procured from the use of a swing, and that even where the motion does not induce sickness. The death is often sudden at last, and is almost always preceded by anasarca of the lower extremities.

This affection is principally distinguishable in its earlier stages from the tubercular consumption, by the uneasiness in the side being confined within a certain space, by the gradually increasing difficulty in the breathing, and by the common motion of the body aggravating, and by rest alleviating the symptoms; and in the last stages it is to be discriminated by the fever not observing the hectic character, and by the absence of pus in the expectoration, which throughout is usually scanty, and consists of vitiated mucus, when chronic pleuritis is uncombined with inflammation of the lungs themselves. Where the measles have left a tendency to inflammation in the pleura, this affection is apt to follow them, if children be exposed to cold, or allowed too full a diet: but it is sometimes produced in adults, by the exhibition of diffusible stimuli or strong food during their convalescence from acute pleuritis; and sometimes it directly, though slowly, arises from a blow upon the breast, or from an exposure to intemperate weather. Upon the whole, females have appeared to me more liable than males to chronic inflam-

mation of the pleura; and perhaps this is owing to the mode of dress adopted by the former, which is not only thinner, but which particularly exposes part of the chest. It would perhaps be difficult to find any enlightened country where the dress of the females is less suited to the climate, and to the social customs, than in England: and it is a national opprobium, that the lives of many mothers and daughters should continue to be yearly lost, from the prevalence of false taste and injudicious fashions.

Chronic inflammation of the lungs themselves is not unfrequently the concomitant or the result of the preceding disease. Accordingly I have seen, in morbid dissections, the pleura considerably thickened, with an effusion of serum and of some coagulable lymph in the chest, and a portion of the lungs, which had apparently been impervious to the air, converted into a solid and compact substance, not much unlike that of the liver: and whenever this change of structure is effected by inflammation in a particular part, it throws the work of respiration in a proportional degree on the sound portion of lung, and it is sometimes, I suspect, a cause of hæmoptoe by obstructing the pulmonary circulation. Again, in some other instances I have met with superficial abscesses in the lungs, immediately under that part of the pleura pulmonis which had been inflamed. In a case of this kind, which came under my care last year, the patient was afflicted with chronic inflammation of

the pleura for nearly twelve months; and he never expectorated any pus, until a few weeks before his death, and then only in small quantities. On examining the body, no tubercles were found in the lungs, but a common imposthume existed under a portion of the pleura, which bore strong marks of a previous inflammation; and there was some water in the thorax, with shreds of coagulable lymph floating in it, and a thick layer of the same substance over the surface of the right lung. Chronic pleuritis most frequently terminates by hydrothorax, which, together with the febrile irritation, wears out the strength at last. But when inflammation of the lungs is present at the same time, and when that inflammation ends in an abscess, the disease is of shorter duration, and then it very strongly resembles the genuine phthisis in the last stage, the formation of matter converting an irregular fever of irritation into the hectic. In examples of this nature, the inflammation of the lungs is for the most part simply an extension of the increased action, originally seated in some part of that reflection of the pleura, by which they are immediately invested; and even where the chronic inflammation commences in the body of the lungs themselves, I am not aware that a nosological distinction can be of any *practical* use, when the inflammation is of the same nature as that which attacks the pleura. Yet as chronic inflammation of the body of the lungs does occur independently either of chronic inflammation in the pleura, or of chronic inflammation in the

bronchia, it may not be amiss to say a few words on the subject, by way of exciting inquiry.

The abscess which follows acute inflammation of the lungs is attended with a distinct and impressive concourse of symptoms; whereas that resulting from a chronic and simple inflammation takes place without many of what are deemed the diagnostic signs of such an event. On the examination of the bodies in two cases, where suppuration of the lungs had not been suspected till a short time before death, an extensive abscess was found in the left lung of one, and two small ones in the right of the other. Both these cases had been ushered in by a lassitude, without any strongly marked symptoms of pulmonary disorder. About two or three weeks from their commencement, the disease in both put on the character of an irregular ague; for cold, hot, and sweating stages returned at intervals for more than a month, and these were succeeded at last by a confirmed hectic. The appetite remained tolerably good in both cases, and the sleep for some time was often long and sound, and the respiration, upon the whole, far less disturbed than might have been expected. In another example, in which the fever from the first to the last observed the remittent form, suppuration had taken place in the liver as well as in the lungs; and yet the symptoms were such as to make me suspect that the chief seat of the disease was in the glands of the mysentery, which were found quite natural.

These cases are surely sufficient to put practitioners on their guard in respect to those fevers assuming the intermittent or remittent features: as such fevers may occasionally arise from the formation of matter about some of the vital viscera, but more especially about the lungs and the liver. Some facts have occurred which would incline me to believe, that chronic inflammation of the lungs, and a consequent abscess may occasionally arise from coagula of blood retained after an hæmoptoe; and I knew one instance which dissection showed to have arisen from a deposition of calcareous matter, which had probably been secreted from the bronchia. Yet I cannot help remarking, by the way, that my own inquiries lead me to infer, that calculi formed in the pulmonary system are generally not so dangerous as Morgagni supposed, who concludes, from an elaborate account of them, that they are oftener dangerous than the contrary; whereas from my own experience, and from that of some friends, a directly opposite inference might be drawn. But this is a point which could only be settled by an extensive collection of facts. It is a little remarkable, that in three cases where small calculi were expectorated, the digestive organs seemed disordered, indications of very great acidity existing in the primæ viæ. All these patients had a short, tickling, troublesome cough, which in two was apparently much relieved by the use of magnesia; and in the third, in whom the hepatic secretions were vitiated, it yielded rapidly to small doses of calomel, and an occa-

sional dose of an infusion of colomba, with the corbonate of potass. From a review of these three cases, might it not appear, that the secretion of calcareous matter in the lungs, or from the bronchia, is connected with disturbance in the digestive functions? And does not this suggestion derive some support from the known fact, that the deposition of calcareous matter in other parts of the body is often seen in conjunction with some disorder of the stomach, liver, or intestines? Finally, however, to advert to the original topic, I know of no symptoms which can enable us to say when chronic inflammation of the lungs is, and when it is not, connected with chronic inflammation of the pleura; and if we possessed any facts enabling us to determine this point, still they would be of little practical utility, since the treatment must be similar, whether simple or combined. Such obscurity, indeed, hangs over the formation of that species of chronic inflammation of the lungs, which occurs independent of any similar affection of the pleura or bronchia, that I readily confess myself unable to enumerate any signs by which it may be certainly distinguished; although a minute investigation into the histories of the few cases which fell immediately under my inspection fully proved, that a slight degree of fever, an occasional cough, with a deep yet very indistinct feeling of uneasiness within the chest, had existed from the beginning. And whenever we observe such symptoms, we ought to be most

circumspect in our conduct, because they may lead to a common abscess in an ordinary habit, or they may be connected with tubercles in a phthisical one.

In his valuable work on consumption, Dr. Duncan senior has prepared the way for more correct and comprehensive views on the formation of pus in the lungs, by considering it the result of catarrh, as well as of acute inflammation, and of tubercles; whilst Dr. Philip, in an able tract, has decidedly fixed the attention of the medical public on the important connection between hepatic and pulmonary disorder. Still there is need of accurate histories and arrangements of some chronic affections which resemble phthisis. It is evident, that under the term phthisis, diseases very different in kind have been comprehended; and it would obviously lead to improve the treatment of those diseases were their respective causes and nature clearly ascertained and defined. This is so far from having been effected, that even among our most useful writers we find very indefinite ideas on the subject; and of how little value are the few remarks above respecting it I am fully sensible, but hope that they will excite practitioners to remove what is obscure, and to supply what is defective. Beside those already considered, there are disorders of the heart, and of other parts, which sometimes appear like phthisis: my experience, however, has not yet enabled

me to speak with sufficient precision of the former, and to the latter some allusion shall be made in the sequel.

When the first edition of this work passed through the press, I had not seen the treatise of M. Bayle, whose arrangement, in some respects, resembles that which I had adopted from my own observation, though his, upon the whole, will be found much more complicated. So far as the pathological anatomy of phthisis is concerned, M. Bayle appears to me to have surpassed every author who has written upon the subject, in the minuteness and number of his inquiries; and the philosophical simplicity and candour with which he has delivered his statements, become deeply affecting when one considers, that this estimable man himself fell a victim to the tubercular phthisis, the incurable nature of which he was earnest to establish. Some of the distinctions however of M. Bayle are not of any practical utility; and it is to be regretted, in a work so truly valuable, that more attention had not been paid to the history and diagnosis of those affections which resemble the genuine consumption.

According to my observations, the true tubercular phthisis only occurs in habits of the strumous temperament; and it yet remains to be proved, whether tubercles be ever formed in the lungs, without an hereditary predisposition to them. Generally speaking, the strumous tem-

perament appears under two modifications, which require to be discriminated. The first of these is found in those who naturally have pale skins, loose flabby fibres, and a sluggish pulse; and the second, in those who have ruddy complexions, firmer fibres, and a brisk circulation. Subjects of the first modification have seldom much corporeal vigour or mental vivacity, whereas those of the second often possess both. But there is one thing common to these two modifications—an unusual irritability of the capillary arteries; an irritability which is perhaps one of the most essential peculiarities of the strumous temperament. The actual seat and development of scrofula may partly depend upon this irritability being more abundant, from their construction, in some organs than in others, and partly upon the force of morbid impressions being mainly directed to those organs; hence in one patient the membranes or ligaments investing the bones will be attacked, in a second the glands of the skin, in a third the mesentery, and in a fourth the lungs, according to the state of each organ, and to the nature of the exciting cause. Now the predisposition to the genuine phthisis, I suspect, chiefly consists in an unusual irritability in the capillary arteries in the cellular connecting membrane of the lungs; and wherever this predisposition exists, any cause agitating or stimulating the lungs may lead to tubercles, and of consequence to phthisis; but where this predisposition is absent, it is probable that no such cause can ever excite, much less produce the dis-

ease in question. The tubercles themselves are, perhaps, formed by exudations from the minute vessels in the cellular tissue of the lungs; and these exudations, though becoming partially organized, may be considered as almost extraneous substances at last, from the interruptions which they give to the pulmonary circulation, and from the local irritation which they induce.* On examining the bodies of young children, I have sometimes found tubercles or the germs of tubercles in the lungs, where no signs of pectoral disease had previously existed: and I have met with them likewise in adult lungs, where there had been no sufficient grounds for suspecting them during life. Such occurrences have led me to suppose, that tubercles may sometimes be congenital, and that at other times they are the slow and unsuspected products of later periods. In many cases, tubercles of the lungs remain long latent before the evidences of disease become strikingly manifest; and what is frequently supposed the commencement of phthisis, is but some local or constitutional irritation exciting previously formed tubercles into inflammation or suppuration. But as the causes which thus excite tubercles already formed are also most likely to produce them in the phthisical habit, it is doubly needful to be acquainted with those causes: first, that

* Broussais, an ingenious French writer, supposes that what we call tubercles are merely the lymphatic glands of the lungs, diseased and enlarged by some adjacent irritation, in the same way as happens in other parts of the body, and in many other diseases.

the formation of tubercles may be warded off in suspected constitutions; and secondly, that their excitement may be prevented where they really exist. The causes of this kind are local irritations within or without the chest, certain morbid states of the skin, and those circumstances which act generally by breaking up the strength of the system. Unless however the true phthisical tendency co-operate, these causes will not excite the tubercular composition. As if to guard the body of the lungs against disease of irritation, nature has generally made them but little sensible; and it is only perhaps in peculiar exceptions from this structure that such affections invade their substance.

That chronic inflammation of the bronchia, of the trachea, of the pleura, and of the lungs, are not essential to the tubercular phthisis, we have sufficient proof in their existing without that distemper, and that distemper without them; and in speaking of them, and of other local and more distant irritations, we must still return to this pathological principle, that they merely become exciting causes of genuine phthisis in subjects whose lungs are predisposed to it from original organization. The preceding affections of the chest are very common, as we are surrounded by the occasions which call them into existence: the hereditary tendency, also, to phthisis is so common in this country, that there are perhaps few families where it is not found; and hence these affections, favoured by this predisposition, so often become the

excitants of this wasteful malady. When such affections occur, therefore, the sooner they are removed the better, since they are not only dangerous in themselves when uncombined with any other disease, but since their removal may prevent an attack of phthisis itself. Precisely the same mode of reasoning may be applied to certain disorders of the stomach, liver, spleen, bowels, and urethra; for each of these may become an exciting cause of phthisis in peculiar constitutions, though in ordinary ones they take place separately and independently. Sir Richard Blackmore divides pulmonary consumption into the original and the secondary. The original, to use his own language, is that consumption the seeds of which are either complicated with the stamina vitæ, or afterwards formed in a degenerate and depraved blood: the secondary is that consumption induced by peripneumonies, measles, malignant fevers, hypochondriasis, jaundice, lues venerea, fistulas, ulcers in the guts, and various other diseases which, as he figuratively remarks, end in tabes of the lungs, as numerous streams run into some ample river, and lose their denomination.* In the second book of his work relative to the seats and causes of diseases, Morgagni shows, that the causes of affections of the lungs may not only exist in the thorax, but in the neck, in the head, and in the belly; and he commends Galen for having ex-

* A Treatise of Consumptions and other Distempers belonging to the Breast and Lungs. By Sir Richard Blackmore, Kt. M. D. and Fellow of the Royal College of Physicians in London. See p. 39, 40, 48. London: printed for John Pemberton. 1724.

pressly taught, that certain disorders of the stomach, liver, and spleen, disturb the organs of respiration. Moreover, he observes, that in other complaints, as well as in those of the chest, the cause which really belongs to the belly is often wrongfully ascribed to the thorax, on account of practitioners not knowing or not considering the height to which the upper cavity of the abdomen and its superior viscera penetrate within the diaphragm. Indeed, in different places he lays considerable stress upon the connexion between the liver and the lungs, and has given some dissections in which both were found in a morbid state: yet he has not carried the doctrine so far, nor illustrated it so well, as some more recent writers of our own country; and too much praise cannot be given to Mr. Abernethy, and to Dr. Philip, for the lights which they have thrown, from opposite points, on this interesting subject. Morton, the rival of Sydenham, has dedicated a whole chapter, in his elaborate treatise, to what he calls the hepatic consumption; and though it contains much of crude speculation, yet it shows that he was not altogether unacquainted with the intimate association which often exists between the liver and the lungs.* In a proper habit, phthisis is more liable to be excited by affections of the liver, than of any other adjacent viscus, but it sometimes supervenes an enlarged spleen, obstructions of the mesenteric

* See p. 307 of Phthisiologia: or a Treatise of Consumptions. By Richard Morton, M. D. Translated from the Original. The Second Edition corrected. London: printed for W. and J. Innys. MDCCXX.

glands, and irritation in and about the rectum. Disorders of the liver and spleen may in some measure act mechanically, by irritating the lungs from their pressure against the diaphragm; yet as this cannot be said of the other textures specified, we must look to some other cause to explain their influence upon a distant organ. One local disease may produce another by causing a general irritation in the nervous system, an irritation which reacts upon and excites the whole vascular system; and the latter, in its turn, operates morbidly and manifestly upon some part where a previous though a latent fault had existed. It is upon this principle, that an external injury or operation is sometimes followed by symptoms of visceral disease; so that in one patient the brain shall be excited, in a second the lungs, in a third the liver, and in a fourth the intestines. It is upon this principle, too, that tubercles may be roused into action, or perhaps actually produced in the true phthisical habit from a remote irritation; for whether that irritation be external or internal, it may, through the nervous operating on the vascular system, so increase the action of the capillary vessels in the lungs, as at once to prove a principal cause of this disease. In some patients predisposed to phthisis, I have seen a short tickling cough arise and disappear with the primary symptoms of syphilis; but in others, who had exposed themselves to cold, or who had taken mercury injudiciously, I have known the cough advance until suppuration of the lungs took place. Again, in

constitutions of a similar cast, I have witnessed a train of dyspeptic symptoms from a stricture in the urethra, and these at last were succeeded by tabes of the lungs. From the consideration of such facts, therefore, we cannot be too careful in speedily removing any irritation from a phthisical habit; for even if that irritation should not at first be dangerous in itself, it may in the end become highly so, by implicating the pulmonary organs in disease. But before concluding this part of the subject I cannot refrain from remarking, that there is something peculiar and insidious in the nature and effects of strictures of the urethra. They are sometimes the unsuspected causes of gleets, of ulcers on the penis, of enlargement of the testes, of febrile paroxysms, and of abdominal and thoracic complaints. A patient may have a stricture for years without suspecting it; yet during this period he shall be liable to some of the affections just mentioned, which can hardly ever be cured without removing the original cause by the introduction of bougies. In particular, sometimes an intimate sympathy exists between the mucous membrane of the urethra, and the same tissue of the intestines and of the bronchia; so that I have met with instances of a chronic disorder in the mucous membrane of the urethra, which were followed by morbid secretions of the bowels and bronchia; and the disease has at last assumed the character of chronic inflammation of the bronchia, with purulent expectoration. Many parts of the body sympathize with the urethra, and the

urethra in like manner with them; and notwithstanding the valuable facts which are to be found in various works, we still want a concentrated illustration of this curious subject.

Certain conditions of the skin are more frequently connected with the rise and progress of phthisis than perhaps any of the above noticed irritations; and it is to this organ unquestionably, that we must often look for the commencement of those morbid movements which ultimately undermine the fabric of the lungs. We cannot put a needle into any point of the skin without drawing blood and exciting pain, which demonstrates it to be an extremely vascular and nervous tissue. In fact, we may consider it as an expansion of larger or minuter vessels and nerves, so completely are they interwoven with every fibre of its substance. From such an union of two distinguished textures, one might naturally suppose the skin a most important organ; as physiology has shown, that to those parts, the most highly and perfectly organized, the most important offices of the economy are committed. The whole extent of the skin is perpetually exposed to the action of surrounding agents, and between it and the central parts an intimate sympathy exists, but especially between it and the lungs: for not only do the skin and the lungs mutually compensate a deficiency or an excess in their respective exhalations, but they are likewise closely connected by a free intercourse of vessels; so that when a reduced temperature dimi-

nishes the action of the skin, it at once increases that of the lungs, and the contraction of the vessels on the former in some degree congest those of the latter. Where is pulmonary consumption unknown, and where does it abound? Is it not unknown in most of the warm and temperate, and does it not abound in most, if not in all of the cold and variable climates? In good warm climates the action of the skin is constantly excited, and that of the lungs is proportionably diminished; and on this account we there find diseases of the surface very common, those of the lungs comparatively rare. In cold and variable climates, on the contrary, the action of the skin is diminished, that of the lungs of course augmented in a direct ratio; and therefore in them this increase of labour renders the latter organ much more susceptible of disorder than the former; as it is a pathological law, that the more any part is exercised, the more apt it is to be diseased. What are the remedies, generally speaking, which we find most efficacious in warding off the threatenings of genuine phthisis? Are they not chiefly those which act upon the skin, as blisters, emetics, a regulated temperature, and more especially a change to a warm climate? Who are the persons most liable to tubercular phthisis? Those who have delicate skins and who are exposed, without sufficient clothing, to the vicissitudes of the weather. Nay, if we go more minutely into this subject we shall find, that many diseases of the skin are incompatible with those of the lungs; that is to say, certain excitements of

the first organ often prevent dangerous affections of the last. Hence it is, even in Great Britain, that those persons afflicted with cutaneous diseases are the least obnoxious to pulmonary consumption; but let their cutaneous diseases be incautiously cured, and they often afterwards fall victims to suppuration in the lungs, as I well know from personal observation. Besides in some instances, I have seen coughs of a phthisical tendency disappear on the coming out of a spontaneous eruption of the skin; and I have occasionally seen a similar effect from pimples artificially induced on the surface by an irritating unguent. Phthisis, too, is so apt to supervene those fevers which are attended with affections of the skin, that too much care cannot be paid to patients in a state of convalescence; for if they should be incautiously exposed to a cold or variable atmosphere before they may have required their full vigour, they will be very liable to lapse into pulmonary consumption. Whatever might be their speculative notions, the ancients certainly paid far more regard than the moderns to the skin in pulmonary complaints. We accordingly find, that Celsus recommends several ulcers* to be made in phthisis, and directs the employment of frictions; whilst Ætius, carrying the practice still further, almost covered the skin with

* Exulcerandus est ferro candenti, uno loco sub mento, altero in gutture, duobus ad mammam utramque; item sub imis ossibus scapularum, sic, ne sanescere ulcera sinamus, nisi tussi finita cui per se quoque medendum esse, manifestum est. A. Corn. Celsus de Re Medica, p. 124. Glasguæ: excudebat Gulielmus Bell. MDCCLXVI.

issues, both in that disease and in asthma.* Similar methods of treatment seem to have prevailed for centuries, and only fell into disrepute on the decline of the humoral pathology; as in the ceaseless changes of human opinions many estimable things have been undistinguishingly condemned, with the absurdities upon which they had been accidentally established. The connection, through the medium of nerves and of blood-vessels, between phthisis and the skin, appears to me a subject of vast importance in a pathological and practical view; and I could earnestly entreat practitioners to investigate it narrowly, as they value the vital interests of society, and the advancement of the medical art. An immense majority of patients attribute the origin of phthisis to cold, and can recount the circumstances under which they were exposed to its influence. If we accurately trace the history of such cases backwards, we shall invariably find, that the functions of the skin were first disordered, and that they continued more or less so during the whole attack; the surface being at first chilly with a diminished perspiration, and afterwards chilly and hot alternately, with irregular returns of dampness and of dryness. Nay, what are the colliquative sweats in a confirmed phthisis but an increased action of the skin, to compensate the interrupted functions of the wasted

* The reader will find an interesting account of the practice of Ætius in The History of Physick, from the Time of Galen to the beginning of the Sixteenth Century. By J. Friend, M. D. The fourth Edition. Vol. i. p. 36, 37, 38. London: printed for M. Cowper. M.D.CCL.

lungs? For a certain portion of carbonic acid gas, and probably of other fluids, is to be thrown out of the system, and as the lungs cannot then completely perform their wonted share of the work, they are assisted in their office by the skin. It were needless to tell us, that these sweats exhaust the strength of the patient, for it is readily admitted that they do; but they constitute the best natural mean of removing an immediate evil—the excessive accumulation of noxious and excrementitious matters in the body. This is not a merely speculative opinion; it may be proved by the test of experiment. If, by any measure, the colliquative sweats be checked in the last stage of phthisis, the lungs invariably become more oppressed, because a labour is thereby thrown upon them, to which they are incompetent. Nor does the consequence end here; for if the lungs be not relieved by a copious flow of urine, a colliquative diarrhœa is produced, and the patient may sink with rapidity, if the sweats should not be restored. The colliquative sweats in the last stage of pulmonary consumption can only be moderated with safety, by exciting a flow of urine; for the kidneys form a sort of intermediate apparatus between the lungs and the skin, and on certain emergencies partly or wholly compensate, by various changes of action, any disturbance in the operations of either of the latter. Hence, most affections of the chest are alleviated by a free secretion of urine,—a fact conspicuously noticed by Baglivi; and hence, also, when the action of the skin is di-

minished, that of the kidneys is increased, otherwise the lungs would be far more liable to congestions of blood, especially in our cold and variable climate.

If then the skin, as is indisputably the case, be very often concerned, intimately concerned, in the pathology of phthisis, it obviously follows, that upon this principle preventive measures might be adopted. The sailors, who trade along the northern coasts of England, might at first sight appear to be liable to attacks of phthisis at sea, as they are so much exposed there to the severities of the weather; and yet I have hardly ever been able to trace the origin of this distemper, in such subjects, to the effect of cold when they were actually at sea. This power of resisting the exciting causes of pulmonary consumption in so peculiar a situation, I am inclined chiefly to attribute to the flannels with which those men cover the surface, and to the woollen dresses which they wear when on ship-board: and this opinion has been the more strongly impressed upon me, by having ascertained that when they do actually become consumptive, the attack may almost always be traced to an imprudent disuse of their flannels while on shore, together with the influence of dissipated habits. But it ought to be observed, that though the dress of sailors be warm, it is also composed of such light materials as not to fatigue or exhaust them by its weight, or by its increasing the perspiration too much; and I am convinced, that many per-

sons waste their flesh as well as strength by wearing too great a quantity of clothing. It is well known to grooms, that the fulness of any part of a horse may be reduced rapidly by continuing to cover it with many folds of woollen; and what here takes place in a particular part, may also be induced in every muscular part by similar means, even in the human body. It is, therefore, of great consequence, as a preservative of the health, to make the clothing light as well as warm; since its principal utility consists in preserving an uniformity of the animal heat in all parts of the system. If any practitioner attend to those phthisical cases which fall under his immediate inspection, he will find, that most of them exist in patients who had been careless about their clothing: if he extend his observations still further he will be satisfied, that many persons, having a constitutional tendency to this disease, attribute their exemption from attacks of it to the constant use of a general covering of flannel or of worsted hosiery; and a minute inquiry into the history of these cases will generally confirm the conviction, which has thus resulted from an experience of their own feelings. Some hints were thrown out, in a former page, respecting the insufficient protection which the dress of females affords to the surface; and it may also be observed, that even the common dress of men is not an adequate security, where there is the least tendency to any thing like phthisis. In short, in such a changeable climate as ours, every body should wear flannel or fleecy hosiery next the skin;

and persons of the higher class should be mindful to make their evening correspond to their morning dress, in point of warmth. By covering the skin with those substances which are bad conductors of caloric, we in some measure preserve an equilibrium of temperature between the centre and the surface, which tends much to preserve the health: but this expedient has a special power over the lungs, for the skin is thereby constantly stimulated, and of consequence the respiratory organs, as before explained, have a less share of work, and are rendered less liable to morbid accumulations of blood. In autumn, winter, and spring, the greatest care should be taken as to clothing, the atmosphere being then most chilly and changeable. Yet even in summer, the lighter flannel or worsted hosiery should generally be worn, more especially by the delicate; for even at that season we often have a considerable range of the thermometer in the course of the day, by which we are apt to be chilled after having been heated, if we wear linen next the surface. There are, however, some irritable persons who cannot wear flannel next the skin, from the uneasiness which it excites; and in such, thin wash leather will be found a most excellent substitute, as it warms without irritating the skin. Indeed I have known several patients, especially females, give the decided preference to the leather, believing that it kept the heat of the surface more uniform than flannel. In North America, leather has long been worn next the skin by the natives, in their worst weather;

and to those who, from the comparative luxury of clean linen, dislike any thing under the form of flannel, it is a material from which they may derive considerable advantage, and at the same time possess all the comforts of cleanliness, by having it repeatedly washed. An intelligent friend recently informed me, that a body of manufacturers of glass had become much less liable to colds and coughs since they had worn flannel shirts at their work; and as they are exposed to a considerable heat while employed on the glass, and as they cool themselves by standing in currents of air, their situation is somewhat analogous to our own in summer, since we are heated and cooled in the same day. So repeatedly have I seen the advantages of the mode of clothing here recommended, that I could wish it were universally adopted in this country, but particularly by females, whose natural delicacy renders them less competent to resist the vicissitudes of the atmosphere.

The dress of females in particular is an inadequate security against the weather at all seasons, but especially in the winter and spring; since it is not only far too thin in the mornings, when the arms, breast, and neck, are covered, but it is still more so in the evenings, when the neck is entirely, and the arms and breast partly, exposed. It is surely a great defect in education, that young women should be taught such an unceasing regard to the decoration of their persons, and to the extreme polish of the mere exterior; for

by an adherence to this system, simplicity of manner, sincerity of mind, and even health, are often wholly sacrificed. Most females should wear a chemise and drawers of light flannel, with warmer stockings and stronger shoes than are worn at present. Between the feet and the rest of the surface there is a surprising sympathy, so that if the former be cold, the whole skin is apt to be affected as to temperature; and hence may be explained, from the nervous and vascular consent between the skin and the lungs, the known frequency of coughs from coldness of the feet. In wet seasons, both delicate men and women should wear leather clogs over their shoes, as they are exceedingly useful in keeping their feet dry and warm. By the adoption of this simple expedient, I have known some persons escape coughs, who had previously been liable to them from having had their feet chilled through their shoes in damp weather. If females wore flannel, and if the neck, the arms, and breast were always covered, they would be much less subject to phthisical, congestive, and inflammatory complaints. Though I practised much among the Society of Friends while at Sunderland, it is remarkable, that I only attended one young woman of their denomination who died of pure consumption; and as the disease was not uncommon among other young women of that place, the greater exemption of those of the Friends appeared to depend chiefly upon their dress, that has a simplicity and protection which it would be

well for others to imitate. Indeed many of the habits of this respectable Society are highly conducive to health.

The universal use of linen in modern times has largely contributed to promote personal cleanliness, and to gratify those feelings of animal pleasure which are connected with cleanliness. This observation, however, is only applicable to the higher and middle orders of society, for among the lower linen is generally worn until it be covered with dirt; though it is much to be regretted, that in many large towns, but especially in London, the poor, who live so much huddled together, are by no means sufficiently well supplied with water for the purposes of washing their houses and clothes. If among the labouring classes linen shirts were laid aside, and flannel ones substituted, a great improvement might be effected in cleanliness and health; for as the latter are cheaper, they might be more frequently changed, and the men, by resisting cold better, would not be so subject to those chills which follow hard labour when linen is worn next the surface. The human system has an extensive power of accommodating itself to surrounding circumstances, and particularly to the changes of the atmosphere. But the climate of Great Britain, which constitutes its badness, is so exceedingly variable, that even the pliancy of this power cannot preserve us from its influence; and to defend the surface as much as possible from the shocks of

atmospheric variations, is one of the best means of preserving the centre sound, where life may be said more immediately to reside. When the clothing has once been made suitable, so far from advising persons in general to shun the vicissitudes of the weather, I would advise them to expose themselves, that they may be strengthened from the force of habit against surrounding circumstances. It were indeed folly, on most occasions, to shrink from an encounter with those things which our situation has rendered in some measure inevitable, but it is always better to meet them with every possible advantage on our side: and although the most fearless would not be so weak as to reject the use of weapons to parry an immediate attack upon life, yet many sacrifice that life through a neglect of the common precautions which our climate requires. People who follow sedentary employments within doors are most liable to be affected by the weather when they go abroad; and those on the contrary are the least liable to be affected by it who work in the open air, if they be properly clothed. The stronger persons are, the more successfully can they resist the changes of the atmosphere: but even the safety of them would be increased in the main by protecting the skin with some bad conductor of caloric; and as for the weak of both sexes, they are exposed to perpetual perils without such an additional covering. From the dress of the ancient Britons, from the high praises which the Romans bestowed upon the temperature and

soil of our climate, which they considered alike adapted for *vines* or corn,* one would imagine that the seasons have undergone some remarkable alteration; and even some old agriculturists, with whom I have conversed, seem quite certain, that our climate has become considerably colder within their memory. A late ingenious writer appeared to be confident, that this was the fact, and attempted to account for it by an accumulation of ice in the north seas; but whatever influence this may have had, it is highly probable, that the changes induced upon the surface of Europe, through the progress of agriculture, may have affected our climate as well as others; though perhaps we shall never be able satisfactorily to account for the changes in the weather, until we shall be possessed of a more correct theory of the winds. This alteration of climate is an interesting subject of inquiry, and merits more attention than it has hitherto received from philosophers; but at all events, the present states of the seasons should claim the special notice of every medical writer, as they are connected with many of our most dangerous diseases, and with none more intimately than phthisis. From the little regard which many medical writers seem to pay to the skin, one might almost suppose that they considered it an insensible envelope, somewhat

* See some curious references to Eumenius on this subject, in vol. i. p. 357, of The History of the Decline and Fall of the Roman Empire. By Edward Gibbon, Esq. of Dublin: printed for Luke White, No. 86, Dame-Street, 1789.

like the outer bark of a tree: but I must again repeat, that it is an organ of vast importance, hardly any morbid phenomena occurring in which its functions do not more or less participate; and this is the case, not only in the human, but in the brute economy, as any one may satisfy himself by marking the diseases of man, and of the lower animals.

For some years past, I have observed how boys naturally delicate often improve in health and strength, by following some laborious occupation in the open air. But this favourable change has been most apparent in some brought up as ship-carpenters, whose work is by no means light; and I have been informed by an extensive ship-builder, that most of his apprentices, who had been previously weak, greatly improve in strength from their employment, provided they be not worked too hard. From these circumstances it might be reasonably imagined, that those children or young persons who show much delicacy of constitution might be rendered much more robust by a regular training in some corporeal exercise; and by this means become far less prone to those diseases which arise out of general debility, or which are connected with an incompetency of the natural powers to repel the impressions of our trying atmosphere. The long neck, the narrow chest, with feebleness of muscular fibre, have generally been considered as the signs of an hereditary predisposition towards phthisis; and certainly where-

ever they exist, more than ordinary care ought to be taken, though I have occasionally seen consumption seated in chests of almost every form. It is an exceedingly rare circumstance to see negroes with narrow chests; and it may also be remarked how very erect they are in their gait. They carry almost every thing upon their heads which Europeans carry in their hands, and this tends to make their gait erect, and to expand the chest; for we see a similar effect produced among those women in the north of England who carry fish about for sale on their heads; yet, as Camper asserts, the head of the African perhaps naturally inclines more backward than that of the European, which would affect both the chest and the gait. Probably, however, some plan of placing weights upon the head might be advantageous to children who have contracted chests. But still exercise in the open air, and even some tolerably laborious employment, should mostly be considered as indispensable for children constitutionally weak; because, if they be pent up at home, and especially if the free ventilation of the rooms where they sit be neglected, they are almost certain to become more or less chicken-breasted, and may at last fall into consumption, or some other strumous disease. From the observance of hardy exercises in the open air, the ancient Greeks became as much superior to the rest of the world in physical strength, as they were in mental capacity from the force of other institutions; but both among them and the Romans, in the best times

of their history, the strictest temperance formed a part of their character, and this was even blended with their military establishments, so that their political power only declined as they became enervated by luxury. If the children of a delicate or strumous stock were properly trained up as to exercise and temperance, there would probably be much less disease in general, and of consumption in particular; and by directing the minds of youth at the same time to intellectual objects, much of that dissipation and frivolity might be done away which now so frequently disappoints the expectations of parents, and destroys the morals or health of their offspring.

As a preventive of morbid conditions of the skin and of the lungs, I would mention the maintenance of the tone of the superficial vessels; and I do firmly believe, from repeated observations of its effect, that the almost daily use of the shower-bath, or cold ablution of the skin, is one of the best preventives of pulmonary consumption. In all cases where it is practicable, it is better to employ sea than spring water; and when the former cannot be obtained, a little common salt may be added to the latter, by way of stimulating the skin. In general the water should be about the temperature of 90° of Fahrenheit's scale, when the shower bath is first used; and it ought gradually to be brought down to 60°, at which point it may usually be continued the whole year round. But there are some subjects who may bear it at last

a little lower than 60°, and there are others who require it to be always a little higher. The exact point, however, will be easily ascertained by the feelings; yet, as a general rule, it will be safer to have it above than below 60°, in delicate constitutions. On the employment of the shower-bath, the head ought to be completely covered with an oiled silk cap, to keep the hair dry; and immediately after it, the skin should be well rubbed with coarse flannels, and a little warm tea or coffee taken as soon as possible. It is surprising how refreshing this procedure is, how it braces the whole animal fibre, and how light and elastic it renders the spirits: but its grand influence is in giving an energy to the cutaneous vessels, which enables us to bear without injury the changes of the atmosphere; and hence those persons who accustom themselves to it, are not only less liable to consumption, but to all sorts of visceral inflammations or excitements. The prevalence of congestive and inflammatory diseases might be greatly lessened in this country by the general and proper use of tepid and cold baths; and the legislator who should procure their erection for the public benefit, would deserve the gratitude of the present and future times. But in defiance of all that we can do, still pectoral and other diseases will result from the great changes of temperature which our climate undergoes: and as to the variations in the densities of the air, we have no power over them; although pressing upon the surface of the body with different forces, they must occasion correspondent distentions, or contractions of the

internal vessels. This is a topic to which medical writers have not sufficiently adverted: yet there can be no doubt, that many internal diseases are partly dependant upon the alterations in the density of the atmosphere; and hence certain persons are like barometers, constantly changing with the weather. For all these reasons, therefore, how much soever our country may be endeared to us by social relations, how much soever we may venerate it for the great minds which it has produced, and for the patriotism, science, and philanthrophy which it still cherishes, yet there are occasions which may compel us to leave it, and to seek a more settled and serene climate. In fact, wherever fair grounds exist for inferring the approach of the tubercular phthisis, the practitioner should not hesitate a moment to advise a voyage to another country; and where the circumstances of the patient preclude this, a regulated temperature, an attention to the digestive organs, the removal of internal irritations, the use of ablutions, and the establishment of cutaneous sores by blisters, setons, or issues, will commonly be the best means of warding off the threatened attack.

Connected with this part of the subject, it may be briefly noticed, that when there is a known hereditary predisposition to phthisis, the old practice of making setons or issues in the skin ought not for the most part to be neglected; and as its reasonableness may be inferred from the doctrines already laid down, so its utility has appeared to

me evident in several examples. But when local external irritations of this kind are used, the setons or issues should be often renewed, new ones being made as the hold ones are healed. When a seton or an issue has been allowed to remain open a long time upon the skin, the part becomes so familiarized to its action, that it occasions little counter irritation, and of course little benefit; but when one is dried up and another made, as above mentioned, a counter irritation to a certain extent is constantly maintained, and the benefit is more strikingly displayed. But upon the whole, very small blisters, if I mistake not, are equal, if not preferable, to issues or setons, when applied in succession to different places, and kept open for some time by the savine ointment. Nevertheless, the local external irritation should never be carried so far as to produce a general re-action of the heart and arteries; for when that is the case, the general re-action will of course extend to the capillaries of the lungs; and thus the external local irritation may prove the mean of actually exciting what it was intended to prevent. Indeed I have known the general circulation of phthisically disposed patients so very excitable, that every common species of counter irritation on the skin was prejudicial; and in such the best way that the surface can be acted on favourably, is by a regulated temperature, by an occasional emetic, by ablutions, by clothing, and by a change of climate. The strumous person, who has open sores, is seldom liable to pulmonary consumption; and when the

sores by any chance heal, artificial ones ought to be substituted, else he may be in danger of falling at last into that distemper. From all the foregoing hints, I trust that practitioners will perceive the great importance of attending to the skin in their pathological inquiries respecting phthisis, and even respecting other diseases: but this will be the more especially necessary where the consumptive or the strumous temperament is known to be hereditary; since from an early adoption of preventive means, attacks on the vital organs may be successfully parried. In our times we have seen the most pleasing and beneficial change effected in the treatment of numerous diseases, simply by instituting an action on the tract of the bowels; and as the skin affords a much larger surface for action, as it closely sympathizes with the internal parts, why may not certain expedients operate as beneficially through it, as others have done through the intestines?

Though loss of flesh and strength sometimes mark, as its pure effects, the approaches of phthisis, yet it cannot have escaped the observation of any medical man of experience, how very prone certain subjects are to tubercular phthisis from those circumstances which directly break up the general strength. Among the ordinary causes, therefore, of this complaint may be enumerated—various diseases, great fatigue of body or anxiety of mind, immoderate courses of mercury, excessive venery, improper use of vinous or spirituous liquors, an

indigestible, irregular, or a very spare diet, sedentary employments, the giving of suck too long, and copious losses of blood. Respecting each of these a few remarks shall be given, which may tend to illustrate the operation of all similar causes.

Any class of diseases which produces general debility may lead to pulmonary consumption, and the greater the debility the more is commonly the risk of secondary disorder: for in cases of extreme weakness, the vascular system is highly excitable from nervous irritation, and as re-action always naturally succeeds to raise the prostrate powers to the tone of health, this re-action may excite a predisposed organ into disease, especially if aided by diffusible stimulants. Besides, it was before shown that, in such examples of universal collapse, it is in the minute branches of the arteries that the circulation is more particularly liable to be disturbed. If a tendency to phthisis, therefore, had previously existed, the capillaries of the cellular tissue of the lungs will be now most fitted for its excitement or production. It has always appeared to me one great advantage of the depletory plan in the early stage of fevers, that patients are not only far less liable to relapses, but likewise to the supervention of chronic diseases, than under the old stimulant treatment. It is unquestionably true that recoveries from fever have taken place under the protracted and precarious exhibition of excitants: but in almost all of such cases, which

have fallen in my way, chronic inflammations of some of the viscera have followed; and phthisis has been the most common, which however will sometimes succeed after the best measures, in cold weather. Perhaps in civilized society, no human being is born with all his organs in a perfect condition. Some local weakness or other probably always exists in so complicated a machine; and when the balance and harmony of health are disturbed by any general shock, the local weakness is then most liable to be apparent. Raro quisquam non aliquam partem corporis imbecillam habet,* is an observation which Celsus made about two thousand years ago; and as it is founded on nature, it will be as immutable two thousand years hence, as at present, so superiòr is fact to conjecture. Whenever the body, then, has been enervated by disease, we should be very attentive even on the decline of the disease, and the more so, if there be any hereditary predisposition; because an improper diet, a neglect of the bowels, or an incautious exposure to the air, might be followed by phthisis, or by some other affection. Under such circumstances it is not so easy, as might at first sight appear, to make the diet exactly suitable to the state of the constitution. If it be not sufficiently nutritious, the nervous irritation and the vascular excitability are increased; if it be too nutritious, the already commencing re-action may be dangerously augmented; and the only safe

* Lib. I. cap. iii. p. 20.

course which we can pursue is between these two extremes. It is impracticable at once to raise the body from the collapse of disease to the energy of health; and every attempt of this kind arises from a disregard of the most obvious laws of the animal economy, and is always attended with danger. Artists who regulate watches scientifically know, that when they go wrong, it is best to bring them gradually to the ordinary movements; and those who take upon themselves to restore the weak to strength, should be guided by a similar principle. The human body will bear a great deal if it be gradually done; but it is often destroyed by too great and sudden shocks or changes. The appetite should never be pampered either in sickness or in convalescence; and when the alvine evacuations are not proportionate to the ingesta, a laxative ought occasionally to be exhibited. Where the debility has been great, the quality of the food must be of the most digestible kind, and its quantity moderate: for by an impropriety either in the quality or quantity, assimilation may be disordered, and general irritation induced, with a train of morbid consequences. In health the powers implanted in the system are sufficient to sustain the action of the common bodies surrounding us, which then only stimulate us to a degree necessary for the various exercises of our functions: but in the debilitated habit, this balance of action and re-action is destroyed, and wonted impressions cannot be borne without the chance of vital injury; and therefore, however common

the custom, it is decidedly wrong to expose feeble convalescents to the open air, without due regard to its temperature and serenity. After recovery from fevers and other diseases productive of debility, phthisis frequently supervenes from too sudden and free an exposure to the atmosphere; but this is more particularly the case after the measles, which so often leave much general debility, and so strong a tendency to pectoral affections, from the previous excitements of the lungs or its appendages. On the abatement of all distempers which have greatly reduced the constitutional vigour, the clothing should be warm for some time afterwards, and the utmost care taken to guard against the influence of cold. The whole circulatory system remains long in a vacillating state; and as the superficial vessels are especially weakened, so the shock of external impressions is easily communicated to the internal parts. But the above precautions in respect to regimen, with the occasional use of the tepid affusions, will generally prevent secondary diseases; and where a removal into a pure and temperate air can be accomplished, it will always most powerfully contribute to restore the general strength. When, however, in defiance of these preventive measures, any signs of visceral excitement shall appear, the employment of moderate evacuants, with an antiphlogistic regimen, will be highly necessary; but in every instance of this sort, the attendant irritation should be allayed by the warm bath, or by occasional opiates; and if these expedients only be recurred to promptly,

they will frequently remove an immediate, and prevent an ultimate disease.

Bodily fatigue seldom induces phthisis, unless it be long or repeatedly endured, or unless it be connected with much anxiety of mind; and under either of these circumstances, it may so break up the general health, as to lead to this disease. Accordingly I have sometimes seen it follow hard exercise on horseback, a long journey on foot, indiscreet trials of strength, and the like, especially when undertaken in intemperate weather. Nature intended the heart to beat, and the blood to revolve at a certain rate; and though provision has been made for great occasional exertion, yet that exertion cannot be often renewed without risk. In the first place, it hurries the circulation impetuously through all the vital organs, so that if any one be weaker than the rest it is liable to suffer; and in the next, it is always succeeded by more or less collapse, which leaves the system open to the operation of many other causes of disease. Disorganizations of the viscera are often occasioned by an excess of corporeal labour. Yet nature has so constituted us, that health cannot be preserved without a certain measure of exercise; and if we could always observe a medium in that respect, our lives would be more easy and more protracted. But the wants, forms, and duties of civilized society are frequently making greater demands upon the voluntary powers than can be safely supplied; and the re-action thereby in-

duced on other parts of the body often tends either to disorder their functions, or to derange their structure. The persons whom I have known most frequently to fall into phthisis from fatigue, were delicate females who performed the offices of nurses, and those who visited night after night in fashionable parties. Urged by that sensibility, which is so conspicuous an attribute of the female mind, young women often nurse their sick relatives or friends, and not unfrequently carry their attentions so far as to wait on them in the night as well as the day. Their feelings, too, are often strongly excited by the sufferings which they witness, and thus solicitude of mind is brought to co-operate with the corporeal fatigue. The consequence often is, that their own health begins to decline; and if they should happen to have any tendency to phthisis, they are almost sure to become its victims. Whenever, then, there is a known or suspected predisposition to consumption, such powerfully exciting causes as these should be avoided as much as possible; and the more so if the patient, with whom the predisposed person resides, labours under the true tubercular consumption; as some facts have occurred to me which render it probable, that the purulent effluvia of the lungs may excite the disease in a peculiar habit. Nothing breaks up the strength sooner than the want of sleep at those hours which nature obviously designed for repose; as they are marked, as well by the regular return of day and night, as by our own feelings, before perverted by

artificial habits. Let any one attend to what he experiences within himself, and he will be satisfied, that the labour which is light in the day, is burthensomc if borne in the night. The accumulated stimuli of the day are sufficient for the temporary exhaustion of the excitable system upon which they act, and the abstracted rest of night is requisite to recruit us for the encounter of each successive day: and when we attempt to create a new sort of existence, by surrounding ourselves with artificial stimuli at nights, we cannot surely be surprised if the premature loss of health should follow the violated law of nature. It is the strange violation of this law in the fashionable world, that makes delicate females so liable to consumption; and the loss of strength which they sustain operates the more forcibly, because it renders them susceptible of cold, to which they are perpetually exposed at the season in which visiting is most common. Those who possess riches and rank have fallen upon many expedients to distinguish themselves from their inferiors; but there is none more injudicious and dangerous than the present fashion of visiting during the night. Amongst the highest order of society, animal food is now eaten at almost all their meals; and it is this circumstance, I suspect, which saves many of the delicate and dissipated females from phthisis; for though persons of regular habits do not, so far as I have remarked, require a great deal of animal food, yet, under frequent night-watching, nothing tends to main-

tain the strength so much as meals of flesh meat. Where the least suspicion of a phthisical taint exists in any family, the members of it should studiously avoid visiting at nights, and observe the utmost regularity in their regimen. Few things contribute so much to preserve health and to prolong life, as going to bed early and rising early. On inquiry it will be found, that most of those persons who reach an extreme old age, have attended to these two circumstances; nor can we be surprised at their influence, since they are so consonant to nature, and since they are generally united to a train of temperate habits. Literary and scientific men, whose modes of living in other respects are so different, yet often resemble fashionable people, inasmuch as they sit up when they ought to have been asleep; and as their pursuits are most truly fascinating, and as the term of life seems almost too short for the accomplishment of great works, we cannot wonder that they should wish to employ some portion of the night, the silence of which is so suitable to reflection. Yet, in doing so, those who have an hereditary predisposition to phthisis, will not in the end lengthen, but on the contrary shorten the period of their labours, and even of their existence; and the young in particular will be apt to sink prematurely under studies pursued at nights, and therefore their acquirements should be made in the daytime. Anxiety of mind is often combined with bodily or intellectual exertion, and to their union we may sometimes clearly trace the first symptoms

of consumption. Anxiety of mind has a peculiar power over the heart, and also over the liver and other organs of digestion; and it is by disordering them, that it operates forcibly, though indirectly, on the lungs, or on the brain.

In various places I have spoken highly of the efficacy of calomel as a febrifuge purgative and alterative, and in various places shall have occasion to do so again. But it has been distinctly noticed, and shall again be distinctly noticed, that this preparation can only be advantageously given in certain morbid states of the system, connected with arterial excitement, or with venous congestion; and I am well assured by observation, that much mischief accrues from the use of mercury, without due consideration of the circumstances under which it is administered. It is a common practice with many, to prescribe long courses of mercury for almost all chronic diseases of the internal viscera; and the result not unfrequently is, that the strength of the constitution is shaken to its very centre, while no favourable impression has been made on the topical disorder or derangement. Nay, even in chronic affections of the liver, this medicine is far too indiscriminately and profusely given; but the talent and industry of Dr. Farre promise in a great measure to correct this evil, by distinguishing those affections more accurately than had hithertofore been done. Yet if there be any one disease in which mercury is more abused than in another, it is undoubtedly in the primary

and secondary syphilis—a disease which has long exercised, and which still exercises, an awful influence over society. From an improper treatment of the primary, the secondary syphilis succeeds; and sometimes the mere local and constitutional irritation of the one or the other induces phthisis, which is, however, far more frequently the effect of the united agencies of mercury and cold. Whenever the system is not in a high state of arterial excitement, or in an oppressed one of venous congestion, the exhibition of mercury requires the greatest care. Now a certain degree of the inflammatory diathesis does exist both in the primary and secondary syphilis; and it is this which enables us to prescribe mercury so often without prejudice to the general health in lues. But then we should recollect, that it is generally so mild a degree of the inflammatory diathesis as to require a mild administration of the medicine; and in those occasional cases, where the inflammatory diathesis runs high, we shall gain no advantage from it, nay the system will usually be impervious to its specific action, until we have premised venesection or purgatives. Mercury cures syphilis upon the same principle as it cures simple inflammation. The common defects in giving mercury for the cure of lues are, first its irregular, and secondly its profuse administration. If mercury be irregularly given, if the mouth be made sore one week and be allowed to get well the next, and so on afterwards, the secondary syphilis will be very apt to follow the apparent cure of the primary disease; and if

during or shortly after the use of the mercury, the patient be allowed to go abroad in cold and variable weather, he may readily become consumptive. If, on the other hand, mercury be so profusely exhibited in the primary syphilis as to occasion a long and severe salivation, this also may break up the delicate system, and ultimately lead to phthisis. But the irregular or profuse employment of mercury is still more dangerous in the secondary syphilis. For that form of the disease is always attended with much constitutional derangement, and if this derangement be allowed to proceed by the irregular employment of mercury, or if it be increased by its too profuse administration, those who are predisposed may lapse into consumption; and those who are not predisposed may sink under the unresisted syphilis, or, if they should escape that fate, may ultimately die from the combined influences of debility and organic disease of the viscera. During a course of mercury, whether short or long, the patient should be confined within doors; and I would recommend practitioners to make this an invariable rule of conduct in every case of syphilis. Both during and after a course of mercury, the nervous sensibility, and the vascular irritability, are often considerably increased; and this more especially happens in strumous temperaments, and is the reason why they bear mercury so much worse than others. Now if patients be exposed to cold in this state, and if they have any tendency to visceral disease, that disease may be at once excited, so susceptible

are the nervous and vascular systems to external impressions; and it is on this account that I have frequently seen phthisis take place in young men, while going about their ordinary business, under the influence of mercury. To guard as much as possible against consequences, not only should the syphilitic patient beware of cold both during and after his mercurial course, but he should endeavour to maintain the vigour of the system by a light and nourishing diet, by breathing a pure atmosphere, and by occasionally using the tepid bath. A mercurial atmosphere, if the expression be allowable, and want of personal cleanliness, often greatly debilitate and endanger the delicate; and hence the impropriety of crowding a number of venereal patients into the same ward, as is sometimes done in public hospitals, and that too without the strictest regard to cleanliness. It may finally be remarked on this point, that mercury is peculiarly prejudicial to the true phthisical habit, since it excites the whole capillary system, in part of which the predisposition lies; and therefore whenever the exhibition of this preparation may be necessary in such subjects, it should be given with the utmost caution, unless they labour under some highly inflammatory or highly congestive disease.

Excess of venery breaks up the general strength more frequently than has perhaps been suspected; and it is sometimes the latent cause of nervous affections, and occasionally paves the way to con-

sumption in peculiar constitutions. On some occasions I have met with dissipated, or newly married men, whose digestive organs were greatly disordered from this cause, and who laboured under an irregular fever, with cough, expectoration, stitches in the side, and other threatenings of phthisis. But on strictly enjoining a separate bed, and prescribing a cool, simple, and nutritious diet, with medicines which moderately moved the bowels and corrected the vitiated secretions, all the disagreeable symptoms have in general speedily disappeared. And on a few other occasions, where this injunction, and these regulations of regimen and medicine had been disregarded, the disease has passed on, until the structure of the lungs was destroyed. In the commencement of cases of this nature, there is generally a peculiar paleness of the face, with great relaxation of the whole skin; and some degree of nervous tremor with occasional palpitation of the heart are not uncommon. Where nervous and pectoral symptoms are combined, an opiate now and then will be attended with much advantage; but the almost daily employment of the tepid shower-bath, the water being strongly impregnated with salt, will be found one of the best remedies, in conjunction with those above mentioned. Many anomalous symptoms proceed from the same source, and may be fatal when that source is not timely discovered by the practitioner; but as their enumeration would be foreign to my present purpose, the hint is merely thrown out to put others on their guard

with respect to what has not yet been sufficiently adverted to by medical writers. Celsus seems to have been aware of the importance of this subject, to which he has made strong and repeated allusions; and it would appear from his writings, that the ancient Romans, of his time at least, were much more attentive to this point than the moderns: while history also informs us, that their admired predecessors, the Greeks, were fully conscious of its influence over the strength; since those who contended for prizes at some of the Olympic games were previously the subjects of an abstemious system. Certain it is, that a regard to this matter will often be found of great importance in the cure of chronic diseases; and it is on this account, that I have been induced to advert to it so distinctly here.

Nature has not only supplied the things which are absolutely essential for our support, but has also adapted them to the peculiarities of our constitution. That water was intended as our common drink, we have the most convincing proof in the abundant supplies of it which exist in almost every part of the world. To those whose taste has not been depraved by unnatural stimulants, water is the most pleasant beverage; and no other fluid can be found which quenches thirst, assists digestion, and supplies the waste of the secretions so well. Whatever fluid indeed we take, it is the water in it which performs these offices, and the remainder is superfluous, if not injurious, in a con-

dition of health and of strength. In civilized society, stimulants are accumulated, and tempt us to the temporary pleasure which they communicate; and when satiated by one we too often have recourse to another, until at last health be injured or destroyed. At all times a considerable portion of our happiness consists in the gratification of mere animal feeling, such as hunger, thirst, and the like; but as rational beings we ought to make that gratification subservient to the higher enjoyments of which our nature is susceptible. So intimate is the connexion between morals and medicine, that in his researches the physician must continually take into account the influence of the former on the health. Were the minds of youth early and steadily directed, first to the acquirement of moral and scientific information, and afterwards to the useful avocations, there would be much less dissipation, and of consequence much less disease. Some stimulus seems required to prevent us from sinking into torpor or ennui; and where this stimulus is not supplied by mental recreations, and the practice of some business or profession, it will generally be sought in wine and similar excitants. If we do not give young men proper employment, their passions will become the prey of surrounding temptations. These remarks are not so foreign to the subject of consumption as might seem at first sight; since it is really lamentable to see how many young men die of that distemper, induced by drinking wine or ardent spirits, but especially the latter. It was

once emphatically observed, by the present Professor Home of Edinburgh, that ardent spirit is the bane of human nature, and the most pernicious discovery ever made by art:—and I am thoroughly convinced, from long and repeated observation of its effects, that it is the cause of more vice and more disease than perhaps any thing else, among the lower and middle ranks of society. Its excessive use converts man into a ferocious brute, and occasions many untimely deaths. If mild malt liquor could be substituted every where for distilled spirits, the happiness and health of thousands would be annually preserved. It is easy to perceive how strong drinks, and particularly spirituous ones, may prove the excitants of pulmonary consumption, when they operate upon predisposed constitutions. Not only do they break up the general strength, by disordering the digestive organs and exhausting the nervous energy, but they propel the blood with preternatural velocity through the lungs, so that the capillaries take on a diseased action, and tubercles are either excited or produced. In cases of this nature, it almost always happens, that the digestive organs give the first indications of disease: and it is curious to remark, how the prominent symptoms will sometimes be apparently in the liver at one time, and at another in the lungs; until at last the latter are decidedly attacked, and the progress of suppuration is then unusually rapid. If consulted at an early period, when phthisis is merely threatened, the medical man

may often be of great service to those who have been addicted to the excessive use of wine or or spirits, both of which he must positively prohibit; but at the same time it will generally be requisite to substitute small repeated doses of opium for a time, with a moderate allowance of mild ale. This change in the mode of living, aided by a light diet, and such laxative and alterative medicines as correct a vitiated state of the abdominal secretions, will sometimes accomplish more than might have been expected, in a threatened attack of phthisis.

Those who pamper their appetites, or gorge themselves perpetually with rich food, and those who fast long or take their meals irregularly, are apt to suffer from disorder of the digestive organs; and if they should chance to have a tendency to phthisis, it may ensue as an ultimate effect, the precession of the one disorder being in them often closely allied to the supervention of the other. But if any person possessing this tendency suddenly change from a simple to a complicated diet, he will the more readily relapse into consumption, especially if he at the same time change from an active to a sedentary life, or from a quiet and regular, into a noisy and dissipated one, where late hours are kept. Occasionally I have been able to refer distinctly the origin of the pectoral symptoms to some such alteration in the mode of living. Where the patients did not become decidedly phthisical, they had a copious flow of phlegm ap-

parently from the trachea and the branches of each bronchion, attended with less or more affection of the liver; and where this flow did not take place early, but a hard dry cough existed, the lungs were seemingly irritated into suppuration; so that in affections of the liver, I am inclined to think the lungs are sometimes saved from disorganization by an early and copious expectoration. It appears to be the most favourable effort which nature could make for their preservation, and whenever it is wanting the danger will most probably be augmented in the phthisical constitution. Dr. Rollo long ago remarked the near alliance between certain disorders of the digestive organs and of the lungs, but till lately the subject has not attracted sufficient attention. An inquiry into incipient examples of this complicated nature, will almost always show that the excreta are not proportionate to the ingesta; and as there is a wasting of the flesh, without any night-sweats or similar causes to account for it, we are at once led to attribute it to an imperfect assimilation. The root of the tongue is almost always white in the mornings, the breath in some degree unnatural, and these are throughout more or less apparent; while the face and lips frequently acquire a cadaverous sort of paleness, and the skin feels flaccid. The patient generally rises languid, recruits a little in the course of the day, and is almost invariably most lively towards the evening; but upon the whole his spirits are variable, and subject to sudden depressions and elevations from circumstances

which would have hardly influenced him in health. The urine commonly varies much in colour and in quantity, and the alvine evacuations always indicate a vitiated state of the abdominal secretions. If early adopted and steadily pursued, a light simple diet, the compound rhubarb pill at night, and the Harrogate sulphureous water on the following morning, with an occasional blue pill, very small repeated blisters, and regular habits in going to bed and rising, will most frequently ward off phthisical attacks. When these preventive measures do not seem to operate speedily, a change of climate should be recommended, through a pretty long voyage by sea; and where that cannot be undertaken a regulated temperature must be substituted in an airy apartment, if the weather should be cold. But whenever the atmosphere is mild and clear, exercise on horseback or in a carriage, or sailing upon the sea or a river, may be recommended with probable advantage.

Too spare or too poor a diet often produces consequences not unlike to those of too full or too rich a diet; and the pathologist will find, however seemingly inconsistent, that similar effects are perpetually flowing from opposite causes. In too spare or too poor a diet, there is not sufficient to supply the waste of the various secretions, the wear and tear of the animal machine, and thus the vital principle languishes with the movements to which it is connected:—whilst by too full or too rich a diet, the digestive functions are so much oppress-

ed, that a sufficient quantity of nutriment cannot be prepared from the ingesta for the general support, and hence too, emaciation follows. Among the improvident members of the lower orders of society there are often alternations of luxury and want, because they expend what they earn in superfluous things. These persons are very liable to be afflicted with chronical diseases of the digestive organs, and of the lungs, on account of the successive excitement and collapse, to which they subject themselves. It is notorious that few become consumptive in whom the tone of the constitution is maintained. As a prophylatic measure, therefore, it is of great consequence to avoid too rich or too full a diet on the one hand, and too poor and scanty a diet on the other. If we look among the highest and lowest ranks, we shall find pulmonary consumption arising from both these causes in peculiar habits; while those are infinitely more secure who persevere in a simple and nourishing diet, day after day, with regularity. Hardly any species of food tends to disorder the digestive organs more than pastry, which is too commonly used in all conditions of life. It has appeared to me a great error to recommend a spare diet to those who are hereditarily predisposed to consumption; and though I know not upon what special pretences it is so commonly done, yet this I know, that it very often occasions what it was designed to prevent; and I can further declare, that I have generally seen such subjects highly benefited by the moderate and daily use of

animal food, with a little mild fresh ale. Exceptions to this regimen certainly do exist, but these are not numerous, and occur chiefly in some strumous habits of the first modification, where a brisk circulation and a florid complexion are combined with fulness in the vessels of the lungs. Preserve the general vigour of those who have an hereditary tendency to phthisis, and you place them in security: break up that vigour by a bad diet or any other means, and you hazard their very life. Complicated as civilized society is in all its parts, it is difficult to preserve simplicity in any thing; but were our daily diet composed of fewer articles, and were these to be chosen of easy digestion, our lives would be longer and more healthful. Almost every brute animal, unless destroyed by some other creature or by accident, attains to the utmost limit of life in its respective kind, by following the simple instincts of nature in the choice of food; though man, in a civilized state, rarely reaches that limit, but on the contrary dies at all ages, as if he were the sport and the victim of unnatural appetites. Nor is it to be expected, that after having advanced so far from the instincts of nature with respect to our food, that we can safely return to a simple and frugal mode of living; for our very constitution has been altered by artificial habits, and wholly to give up those habits would be to hazard health, or even life, by the shock. But the consideration of these circumstances does not preclude the necessity and safety of a gradual and rational change in our manner of diet; and

if our dishes were fewer and plainer, if we substituted mild ale* or water for vinous and distilled liquors, and if our hours of going to bed and rising were earlier, there cannot be a doubt but consumption and many other organic diseases would be less common.

The state of the population of Great Britain has undergone a great change. The main body of the people formerly existed in the country, it now exists in large towns. It is not my business to investigate the causes of this change; I have only to point out some of its effects as connected with disease. Almost all the inhabitants of large towns may be considered as following sedentary employments: for what are large towns but so many manufactories, where men ply their several trades in a contaminated atmosphere? Among some, it is true, the sphere of action is more extended than among others, but hardly any of them are ever braced by the exercises and air of the country, which are congenial to our nature, and without which we languish more or less, like vegetables transplanted from their native soil and climate. The old mode of building cities in the East, interspersed with cultivated fields and plantations, must

* From observation I am persuaded, that porter is often not a wholesome liquor, though it is now so generally drunk. I strongly suspect that it frequently contains considerable portions of opium, or of some similar drug, which acts specifically in distending the vessels of the brain, and thereby it becomes a powerfully exciting cause of palsy and apoplexy—diseases which have certainly increased of late years.

have been infinitely more conducive to health than the modern plan of huddling houses together as closely as possible; and though we are not now able to carry it by any means so far, still we might advance our welfare by imitating the ancients in this deparment of domestic economy. In proportion to the population, the number of deaths is much greater in our large towns than in the country; and, if my own observation be correct, pulmonary consumption is far more prevalent in the former, the population being supposed equal in both. There is more of luxury and dissipation in large towns, more of mental anxiety, and less of bodily exertion without doors; and much must also be attributed to the impurity of the air, though some chemists persist in telling us, that it is the same in the town as in the country. If we timely observe the breaking up of the general health of an inhabitant of a large town, and send him into the country, we thereby often prevent the developement of some organic disease, such as consumption. Though pale and emaciated when he went away, yet probably he returns ruddy and fat; and all this change has been produced without the aid of medicine. Now how are we to account for this? Doubtless it was partly dependent upon the greater regularity as to rest, diet, and rising, to the refreshing influence of the scenery, and to the intermission of those cares which, with an immense weight, press upon the mind of those actively engaged in the world, as the surrounding atmosphere presses on

the body. But after all these allowances, we are compelled to ascribe a great deal to the influence of the atmosphere: and accordingly we find, that patients themselves are conscious of its efficacy from what they daily feel. From the mere difference of complexion one may almost know at a glance the inhabitant of the country from that of the town; and this difference is chiefly attributable to the influence of the atmosphere which they respectively breathe. The good effects of a country air no doubt are connected with its purity, but when electricity is better understood, it will perhaps be found that this fluid has some co-operative power; and though the subject has not yet engaged the attention of medical philosophers, it can hardly be a question, that the electrical states of the atmosphere in the town and country are widely different. Probably the immediate cause of people in the town being more liable to consumption than those in the country, is simply that the former are not so strong, and of consequence that they are more readily acted on by the exciting causes than the latter.

The extension of the manufacturing system has operated morally and physically to the detriment of thousands, however beneficial it may have been to the world at large. The young, the middle-aged, and the old, are commonly crowded together in many of the large manufactories, even without due regard to the distinction of sex, and in the most unwholesome places and employments; and

some of them are daily exposed to noxious or irritating inhalations, which must act as direct excitants of consumption where any latent predisposition lurks. Indeed the general health of this class is continually broken up by the influence of their situation, and by the dissipated, irregular, or unnatural habits which they contract; and hence among them, perhaps more than among any other description of people, are seen the various developements of scrofula, and phthisis of course has its share of victims. But one of the most melancholy results of the manufacturing system is the excessive selfishness which it has engendered even in parents: so that they frequently begin to value children as mere labouring animals of interest, almost as soon as they can run about; and accordingly coop them up to earn money by some noisome work, when they should have been unfolding their affections, and establishing their strength. This is a fertile source both of crime and of disease; for it is unreasonable to expect that such children should generally be either virtuous or healthy. Many of them fall prematurely into consumption and similar diseases; and most of those who survive have sickly bodies, and depraved minds. It were to be wished that such cruel sacrifices should cease to be made; and it is especially lamentable that they should so frequently happen in a country which abounds with more true philanthropy than any other. Children should not if possible be sent to any very laborious or sedentary employment before the age of puberty; and

where necessity demands it sooner, the work should be proportionate to the powers of the child, who ought to be allowed free exercise in the open air every day. The health of various manufacturers, and of labourers in mines, might be benefited by a strict attention to their morals and comforts, to the ventilation of the apartments where they labour, and by the erection of baths to promote their personal cleanliness; and even expedients might be invented to guard them in a great measure against the inhalation of those noxious particles or effluvia, likely to subject them to consumption or to any other distemper. There is a principle of improvement implanted in our nature, which has gradually raised us from a savage to a civilized state; and it cannot be reasonably doubted that the future operation of this principle will tend to ameliorate our condition in many departments of life. In speaking of sedentary employments, I cannot refrain from alluding to one circumstance particularly, because it is connected with the medical profession. When young men enter upon the study of medicine, they occasionally break up their general strength by the intensity of their application in the dissecting room, in the tainted air of an hospital, or in their own apartments, and may actually become consumptive from this cause. The impression upon the general health first becomes evident from an universal paleness of the skin, by some loss of flesh, and by some derangement of the digestive organs; and it is generally under these circumstances, that a

tickling cough steals on day after day, and if it happen to be too long disregarded in the true phthisical habit, it may at last end in suppuration of the lungs. In all cases of this kind, study should be wholly intermitted. A removal into the country, mild laxatives, simple diet, an occasional blue pill, and small blisters, will commonly be requisite; and provided these be early adopted, they will generally prevent the accession of phthisical symptoms.

Few circumstances debilitate the body more than giving suck too long, and therefore we find this a common cause of phthisis in the lower orders of society, where the system is not proportionably supported with nutritious food. It is not unusual among women of this class to suckle their children until they are nearly two years old, with a view of retarding pregnancy again, and saving an immediate expense. While a child is at the breast, the menses are generally suspended, and on this account pregnancy is comparatively rare at that time. Nine months is a sufficient time for any woman to give suck, and in some who are naturally delicate that period is much too long. But whenever children are weaned, the bowels of the mother should be kept gently open, and her diet should be light for some time afterwards, by way of moderating or preventing the arterial reaction which is apt to succeed such an event. Many causes concur, in giving suck too long, to reduce the strength of the system; but

the principal are the excessive drain from lactation, the fatigue of carrying the child whose weight is constantly and greatly increasing, and the interrupted sleep at nights. The united influence of these is exceedingly powerful where a previous disposition to consumption prevails; but more especially if the nurse should be frequently wet by the child, and neglect to change her clothes, as the operation of cold is then added to that of the other causes. Where there is the least suspicion of any tendency to phthisis, the greatest attention should be paid to those who give suck: the child ought to be weaned much earlier than usual, and the mother should as much as possible avoid fatigue, wet, disturbance at nights, and in short whatever weakens. It is particularly improper to pamper the appetite at this period, with pastry, wine, cordials, savoury meats, and the like. Both for the sake of the mother and the child, the diet should be simple but nutritious at the same time: since if it be too complicated or too spare, it may equally disorder the digestive organs, destroy the general vigour, and thereby in some prove the occasion of tabes of the lungs. When any pectoral symptoms of a phthisical tendency have arisen during nursing, the child ought to be weaned with all expedition; and it is surprising what a favourable influence this will sometimes exert, in combination with a proper regimen. That diet will be best in such a case, which supports the constitutional tone without exciting the heart and arteries. Flannel or fleecy hosiery should

be worn next the surface, the child should not sleep in the same apartment with the mother, lest it break her rest; and as for medicines, the mildest laxatives occasionally, and small blisters, will be all that are usually necessary.

It is well known, that women subject to large uterine hemorrhages, are very apt to become consumptive; and indeed copious losses of blood of all kinds seem capable of inducing phthisis, in patients in whom a latent predisposition to it had before existed. Copious losses of blood not only exhaust the constitutional powers immediately, but they are invariably followed by an agitated sort of re-action throughout the whole arterial system; so that if any part of the body had been previously weaker than the rest, the peculiar re-action here specified excites it into actual disease. In fact, the causes which have just been enumerated operate in a way similar to hemorrhage; for they first break up the strength, and are followed by an arterial re-action connected with much nervous irritation; and in this state the most delicately or defectively constituted organ suffers the main shock of that arterial re-action. It is a remark as old as Celsus,* that debility renders the body highly obnoxious to all diseases; but the remark may be applied with peculiar force to diseases of an excitive nature, among which consumption must be classed. The stronger the

* Lib. I. cap. iii. p. 23.

body, the less liable it is to all disorders of the circulation. Debility has a singular power in augmenting the irritability of the whole capillary system of the arteries; and as consumption is a disease immediately seated in these arteries of the lungs, so the causes which produce debility ought to be studiously avoided, by those who have an hereditary tendency to that disease. It requires the most cautious procedure to treat patients properly, who have had copious hemorrhages. If they be excited by strong food or drink, an impetuous re-action supervenes, which may induce an active inflammation of some internal viscus; as we frequently see peritonitis occasioned after delivery by a stimulating regimen, rashly adopted to relieve the temporary feelings of exhaustion. On the contrary, if they be kept too low, the nervous irritation is augmented, and that again re-acts on the vascular system, and irregular determinations of blood are the ultimate effects. In short, as before hinted, we must administer a light cool diet to patients thus debilitated, which will support without exciting them, and the present irritation must be allayed not by wine, but by opiates; and whenever the tide of arterial re-action returns, we must moderate it by a suitably antiphlogistic regimen and evacuants, among the last of which purgatives are generally the most appropriate.

It is a common opinion of medical writers on this subject, that hæmoptoe is one of the most frequent causes of consumption, but I cannot im-

plicitly subscribe to this opinion. Heberden justly observes, in his Commentaries, that epistaxis is rarely a primary affection; and it may be similarly affirmed of hæmoptoe, which almost always arises out of some other disease. Sometimes it is the effect of a suppression of menstrual or hemorrhoidal discharges, at other times of an obstruction in the liver or spleen, and not unfrequently it is a consequence of an increased action on the tracheal or bronchial lining; and when proceeding from accidental causes of this nature, it does not readily produce phthisis, unless under gross mismanagement, or in those who are known to be hereditarily predisposed to that distemper. Nay, when blood is spit up from the lungs of persons thus predisposed, it is nine times out of ten not the cause, but the consequence of tubercles, which had previously existed in the lungs; and it is not therefore correct to make consumption a common termination of hæmoptoe, as many writers have done. There may be, and I believe there are, some solitary cases in which the retention of bloody coagula in the body of the lungs excites them into suppuration; but this suppuration, I suspect, is more frequently of the ordinary than of the true phthisical kind. It is in peculiarly organized lungs, and perhaps in them only, that a rupture of vessels will produce genuine phthisis; and when the loss of blood is large, it may operate unfavourably through the local irritation of the lacerated part, and through the shock which it gives to the constitution. But an alarum is too

often indiscriminately sounded, when blood is expectorated, as if the case were utterly hopeless. We should ascertain its source and the habit of the patient, before we give a decided opinion. If it should be found to have proceeded from the suppression of some accustomed discharge, from some disease of the liver or spleen, or from some tracheal or bronchial irritation, it may be most frequently removed by correcting the local derangement, where the phthisical taint is absent; and truly in all of such examples, it is to be regarded as an immediate effort of nature to free the system from some topical surcharge of blood, which threatened to disturb the regularity of its functions. Yet where, on the contrary, there is reason to suspect that the spitting of blood is connected with a phthisical tendency, or with the actual existence of tubercles, the danger is always immediate; and we should then not only give a most guarded prognosis, but deliberately pause before we venture upon the treatment, as the precipitate and free use of the lancet, or any other highly exhausting measure, might entirely defeat the chances of recovery.

In concluding the hints upon the causes which ultimately occasion consumption by breaking up the general strength, it ought not to be omitted, that those causes operate powerfully on the skin from first to last. Debility never occurs without the skin singularly participating in its influence. When the general health of any one is on the de-

cline, we most frequently first remark it by the face becoming of an unnatural paleness; and if we extend our observation, we shall find that this paleness is diffused over all the surface of the body. A complete change indeed has taken place in the state of the whole capillary system of vessels in the skin; and the very nervous condition of that organ has likewise undergone a correspondent alteration, for powers now act upon it with greater force than before. The bulk of the body has diminished, the skin is withered like an autumn leaf, and the patient shrinks from the impressions of a cool atmosphere, which formerly invigorated his whole frame. It is in this very state that the pectoral symptoms commonly appear, and we may often trace them to an accidental cold; and where this is not the case, the mere changes in the densities of the atmosphere, by varying the pressure on the surface, may sometimes affect the lungs. Be it constantly recollected, not only that the skin is a fine expansion of nerves and blood-vessels minutely interwoven with the cellular tissue, but that between that sensitive part and the vital organs within, there is a strong reciprocal consent; and in fact, what is the ultimate structure of these organs but a seeming modification of the skin itself, a continuity of the same fine and sympathetic fabric of nerves, vessels, and cellular membrane? Now in all cases of general debility, this sympathy between the surface and the centre is rendered more exquisite. It is on this account in general, that internal inflam-

mations or excitements are then most readily produced by outward impressions; and it is on this account too in particular, that consumption so frequently arises from the influence of cold at that time. It is not, however, intended by these remarks to insinuate, that general debility cannot lead to consumption but through the medium of the skin; for it has been already shown, that consumption may directly arise from debility, through a consequent disturbance in the capillary arteries in the lungs, favoured by an inherent predisposition. But it has nevertheless appeared to me from repeated observation, that phthisis does very often follow general debility in the circle above described—the condition and functions of the skin being first changed by the debility, and some external impulse, such as that of cold air, afterwards acting morbidly but indirectly on the lungs through the skin. In the same mode, and to the same agency, may occasionally be traced the rise of those abdominal affections with which phthisis is sometimes complicated; but it is the liver which more frequently suffers in this secondary way from impressions on the surface, than the rest of the digestive organs.

The condition of the skin, in conjunction with other symptoms, may enable us to form the diagnosis of the true tubercular phthisis. In the advanced stage of this complaint when suppuration has taken place the diagnosis is most obvious, but of little practical utility, for at that time medical

aid is almost always unavailable. It is therefore most desirable that we should if possible detect the disease when the tubercles are either forming in the lungs, or when, having previously existed, they are first roused into irritation by an incidental cause. It appears to me, that the first changes which indicate the approach to phthisis are to be found in the skin. The colour of the cheeks always becomes paler and more delicate than before, while that of the lips is often of a brighter red. If the practitioner place himself directly opposite to the patient, and look steadfastly on his face for some time as he converses with him, he may generally observe the colour come and go in a surprising manner. A beautiful bloom will be spread for a moment over some part of the cheeks, and then receding it will leave a remarkable pallidity, almost approaching to whiteness. Whenever this symptom is obvious, with a pulse somewhat quicker than natural, and a short tickling cough, phthisis may always be apprehended. It must be distinctly understood that I am now speaking of an incipient or a threatened phthisis, for the above observations will not obtain at all its stages. At this period, too, the whole surface appears paler than in health, and the superficial veins may be observed running in different parts of the skin, somewhat like blue lines through white marble. The hair, from some change in the cutaneous secretion, frequently loses its natural brightness, is laxer or softer, and acquires a dingy or dirty shade; and whatever pains may be taken,

it will hardly ever remain well in the ordinary mode in which it was dressed. The eyes undergo striking alterations, and with them the expressions of the countenance. The tunica adnata, which may be almost considered a modification of the skin, mostly becomes of a faint bluish white colour, and the eye has a glassy or glistening appearance; and an expression of interest, and even of beauty is not unfrequently thrown over the whole countenance, very remarkable in persons whose face had been previously plain. This change is most manifest in females, on account of the greater delicacy of their skins. The tongue generally participates in these morbid variations of the cuticle, so that its surface for the most part becomes smoother and frequently a little redder than formerly, except in those cases where the digestive organs are disordered at the same time, and then it is often rough and white. The temperature of the skin is never perfectly natural from the first. It is chilly and hot, cool or warm by turns, and some degree of fever may generally be detected after a full meal, though it is most apparent towards night.

In the true tubercular phthisis there is an early tendency to partial perspirations in the night, but at first they are commonly very slight; and when they do not exist, it will usually be found, that the patient passes an abundance of urine, so intimate is the relation between the skin and the kidneys. Indeed there is a circle of nervous and

vascular sympathies in the pulmonary, renal, and cutaneous organs, the investigation of which might throw some new light on many diseases. In combination with the above symptoms may be mentioned the confidence of mind which generally attends the approach or invasion of phthisis; for though there be a manifest loss of flesh and strength, an elevation of spirit seems to lift the patient above his bodily sufferings, or at least to make him almost insensible of his weakness. Hence it is that many subjects of incipient phthisis can hardly be convinced of the necessity of any restraint in regard to regimen, and have themselves an assurance in their own health fully proportionate to the fears of those who are interested about them. There are doubtless some exceptions to this state of mind, but they chiefly happen when phthisis is combined with some other disease; and Dr. Philip has therefore, generally speaking, justly made depression of spirits a distinctive mark of that species of consumption which supervenes an affection of the liver. As the simple tubercular consumption advances, the hope of recovery may remain, even when the structure of the lungs has been destroyed; and we sometimes hear patients, actually dying, confidently predict the period when their health shall be re-established, and when they shall again pursue their favourite schemes of life. Mental anxiety and corporeal oppression attend most of the common forms of fever, and it is one of the peculiar characteristics of the true hectic, that they are either wholly ab-

sent, or only present in a partial degree; a circumstance which proves that the sensorium, the chief material medium of mental and of voluntary power, participates less in the phenomena of this, than of ordinary fevers. It is still a common opinion, that hectic arises from the absorption of pus: but facts surely occur every day to overturn this opinion. Large collections of matter are often found under the integuments, and even running sores exist on the skin without the least tendency to hectic; and if the absorption of matter were the cause of that fever, it is difficult to conceive why it should not occur in cases apparently so favourable for absorption. Every body knows, too, that hectic takes place in diabetes when there is no secretion of pus: and practitioners of experience must have met with it in other diseases where much irritation occurred, without any internal or external suppuration; at least I can assuredly assert, that I have known hectic to supervene independently of the presence of pus in any part of the body. Neither can hectic be said to depend simply or solely upon local irritation, since of it a symptomatic fever of the common type is the general result; and yet hectic perhaps never exists without some irritation, which shows that they are related. Some concurrent, accessory state of the constitution seems required to make irritation produce hectic; and, without specifying what that state is, it may be truly affirmed, that hectic never arises but when the system at large is peculiarly affected. In the tubercular phthisis,

next to the appearance of pus in the sputa, perspiring during sleep is perhaps the most certain sign of suppuration in the lungs, when taken in connection with the hectic, and with the cough. To ascertain this point, I have visited patients at all hours of the night, and invariably found some part of the skin moist in sleep, if that sleep had been ever so short; and it may be observed in this place, that the sleep is generally very short, and at unequal intervals, in the genuine hectic of consumption. This disposition to sweat during sleep, often manifests suppuration of the lungs in phthisis, before any pus can be observed in the expectoration. In the true tubercular consumption, the pus is most frequently expectorated in circumscribed and almost circular pieces, blended with mucus; so that if the patient be ordered to spit into a basin of water, each piece in it appears something like a small cockle which had just been stripped from its shell. This form of the sputa, however, is not uniformly found in phthisis, but it far less seldom occurs in chronic inflammation of the bronchia, in ulcers of the trachea, or in chronic and common suppuration of the lungs themselves, in all of which pus is commonly expectorated in a more diffused, irregular form, and of a more liquid consistence. Having now alluded to some of the most important topics in the pathology of this disease, I shall next proceed to the treatment of the forementioned affections which resemble it, and afterwards offer a few remarks on that of phthisis itself.

For chronic inflammation of the branchia, a change of air ought to be recommended as early as possible, provided the weather will permit it without risk to the patient. In the hooping cough which, when confirmed, may often be practically considered as a species of chronic inflammation of the bronchia extending up the trachea to the glottis, a change of air is highly beneficial; and sometimes it is scarcely less so in the affection here specially discussed, which arises from cold and other accidental causes. So much debility usually results from chronic inflammation of the bronchia, that we can rarely bleed copiously with any advantage; but small, general, or moderate local bleedings are sometimes very useful, when followed up by blisters near the site of the disease. In habits greatly emaciated, we ought commonly to prefer local to general bleeding; for, whatever the latter might promise at first sight, the trial of it will most frequently disappoint our expectations. It were fruitless to attempt at once to change a long established inflammation by a powerful impression on the general system. That impression might break through the comparatively weak associations of an incipient, but it will rarely succeed in a confirmed disease: nay, it would mostly do greater injury to the constitution, than service to the local disorder. There are certain diseases, in the removal of which the practitioner should resemble the cautious and dexterous angler, who tries various expedients to entangle his prey, and then gradually expends its force before

he considers it finally secure. When however an acute supervenes a chronic inflammation of the bronchia, venesection must be promptly and decidedly used, because in that case, a new disease has taken place, the rapid nature of which requires immediate and powerful measures. But even then we must have a regard to the prior disorder, and not carry our depletion so far as we would in a patient whose health and strength had been previously unbroken. Neither in the strictly chronic inflammatory of the bronchia ought the general bleedings to be often repeated even when small or moderate at each time; but after the first or second cautious use of the lancet, we should trust to occasional leeching and blistering, when the symptoms seem to demand further applications which have a speedy influence. An antiphlogistic regimen should always be adopted, and where milk agrees it will constitute the best article of diet, as it supports the strength without exciting the heart and arteries; but even where milk alone disagrees, it may frequently be made very digestible by mixing it with equal parts of soda water.

Among the medicines administered internally, the balsam of copaiva deserves to be conspicuously placed, as it is among the best remedies with which I am acquainted, in chronic inflammation of the bronchia and similar affections. It seems in many cases to exert a specific influence over the mucous membrane of the trachea and its branches, it increases the flow of urine, it not unfre-

quently keeps the bowels regularly open, and sometimes it acts upon the skin, causing an itching or an eruption. Upon the single or combined influence of one or other of these effects its main efficacy probably depends. At first it should be given, on soft water or in fine mucilage, in doses of about thirty or forty drops three times a day, and gradually increased afterwards, until sixty, eighty, or more drops be taken at each time: but where it obviously and shortly lessens expectoration, the cough and irritation, it will seldom be requisite to increase it to the last mentioned dose; and where it does not speedily produce such effects, it often will be necessary to increase the dose to more than that amount. In some it occasions sickness, in a few it acts as a strong cathartic. The sickness may often be prevented by combining it with some aromatic water, or a very minute quantity of the spirit of wine; and to restrain its purgative operation, a little camphorated tincture of opium may be added to each dose. But an occasional nausea or even vomiting is most frequently of benefit in chronic inflammation of the bronchia; indeed, whenever there is an oppressive accumulation of phlegm, an emetic ought to be administered. This is a point of great consequence to recollect; for many patients have been suffocated in this disease, for want of the opportune exhibition of an emetic. Yet nausea as well as vomiting, though both are occasionally very useful, should not be too often nor too long excited, especially in a delicate habit, lest they weaken the digestive powers too

much, and through them the whole system. It may, therefore, be sometimes necessary to withdraw the copaiva when it operates in either of those ways. In regard to excessive purging, it invariably does harm, and ought to be guarded against with care; but a moderately laxative action must be maintained on the bowels, otherwise the breathing may become oppressed, or the circulation of the cerebrum disordered. Castor oil and the Harrogate sulphureous water are the two best laxatives in such cases; and, when the bowels do not act moderately under the use of the copaiva, the one or the other should be given early in the morning, that it may operate long before bedtime. In September, 1817, I was attending a lady who had been some time under my care, and who had had an enlargement of the thyroid gland for a considerable period, which latterly acquired a scirrhous hardness, and pressed so much upon the windpipe as to occasion many of the symptoms of the disease in question. If her bowels were constipated for a single day, she was affected with spasms of the upper, and great numbness of the lower extremities, twitchings about the face, much nervous agitation, and an uncomfortable feeling in the head. All these symptoms subsided as soon as two or three full motions were procured by castor oil, or some similar aperient. But when I first attended her, if the purging were carried much further than this, she was very apt to become oppressed in her breathing, so nice a point was it then to relieve the nervous, without aggravating the pectoral symptoms: and in most chro-

nic affections of the bronchia, to say nothing of the acute, moderate purging is useful, and excessive purging prejudicial. In the case just mentioned the patient found decided relief from the copaiva as an expectorant. It deserves to be noticed by the way, that in some other instances of enlargement of the thyroid gland which have come beneath my inspection, disorder of the digestive organs existed. When a general irritation is excited, whatever may be the cause of it, a preternatural accumulation of blood takes place in that part which had a previous tendency to disease. But to resume the consideration of copaiva. It was before noticed, that this balsam sometimes causes an itching or an eruption of the skin, both of which often give great alleviation to the cough; and where either of them does not appear serviceable in that respect, the copaiva ought to be omitted for a time, particularly if any dyspeptic symptoms be present, which it now and then produces. Copaiva combined with sulphur was the favourite remedy of Morgagni in chronic complaints of the lungs, and I have often exhibited them with manifest advantage. Both these medicines have been too much neglected in coughs by modern physicians, but they were once held in high estimation. The older chemists called sulphur the balsam of the lungs, from the then current opinion of its efficacy; and when we consider that it has a specific action on the skin, we cannot be surprised if it should be sometimes very useful. But among those measures which chiefly operate through the skin, the warm-bath ought not

to be forgotten in bronchial inflammation, whether chronic or acute. Its occasional employment not only brings a flow of blood to the surface, which at once relieves the labour of the lungs, but it likewise contributes to allay fever and irritation, and thus has a two-fold influence in affections of this nature. The patient, if possible, should breathe an atmosphere of a moderate and an equable temperature, which is sometimes extremely beneficial in alleviating the cough, and acting gently on the skin; whereas the respiration of a cold or variable medium often aggravates the cough, and repels the blood from the surface.

An intelligent friend prefers the rectified oil of turpentine, in chronic inflammation of the bronchia, to most other means; and though I have seen it succeed remarkably in some cases, and fail in others, yet my own experience of it has not afforded sufficient data for a fair appreciation of its general powers in this disease. It may be exhibited, mixed in water by mucilage or yolk of egg, in doses of about thirty drops at first, two or three times a day; where it is found to lessen the cough and expectoration, it may be gradually increased, but where it occasions any thing like general irritation it ought to be speedily withdrawn.

In chronic inflammation of the trachea or its branches, the exhibition of opium alone requires much caution. It has a specific action on the cerebral vessels, by which the lungs themselves are sometimes secondarily affected, probably from some

degree of consequent pressure near the origin of those nerves which communicate with the pulmonic system. In all cases of fulness in the cerebral vessels, the respiration is impeded or oppressed: and when exhibited alone in full doses, opium certainly does tend to check expectoration, perhaps upon the principle just explained. But this specific operation of opium is exceedingly modified by combining it with small doses of calomel, of camphor, and of antimonial powder; and accordingly this combination, the dose of opium being moderate, rarely checks expectoration, for it determines so much to the skin, as rather to relieve than to oppress the lungs. Where it seems inadmissible from weakness or some other circumstance, and where an anodyne is still required, a little of the camphorated tincture of opium, or of the compound powder of ipecacuan, will be the best substitute, each of which has a similar though less powerful effect on the surface. Dr. Hamilton, of Lynn Regis, one of the best practical physicians of his time, speaks highly of calomel and opium in chronic affections of the mucous membrane investing the air passages: but it may be regarded as an axiom, that medicine is less efficacious in chronic than in acute diseases. Cordially, therefore, as I join in the general and strong commendation of these two agents, preceded by evacuants, in acute inflammations, it is only justice to confess, that they have not unfrequently disappointed my expectation in chronic ones: yet where the ordinary measures fail, they certainly deserve a fair trial even in simple chronic inflammation of the

bronchia; though the opium should be moderately administered, and mostly along with camphor and antimony for the reasons before stated. When, however, an hepatic affection is co-existent with a chronic inflammation of the bronchia, small doses of calomel at night, with as much of the sulphureous Harrogate water on the following morning as will purge effectually, are often extremely beneficial. But in delicate constitutions it will be better to substitute the blue pill, or mercurial frictions over the region of the liver, as these affect the general system less than calomel; and where there is an obvious tendency to the tubercular phthisis, even the blue pill and the blue ointment must neither be long nor largely administered, lest the general strength be thereby shaken, and the capillaries of the lungs excited into disease under that condition. The mild use of the blue pill or of the blue ointment, an occasional blister to the side, with a light plain diet, and the steady perseverance in the Harrogate sulphureous water, will be more safe and efficacious than any other plan, in those who have a phthisical taint combined with an affection of the liver.

In the first volume of the Medical Communications of 1784, Dr. Samuel Chapman published a practical paper on pulmonary and other complaints, apparently supported by fever of the intermittent and remittent kind, and cured by the bark. He was led to the use of this remedy from having observed, during his attendance upon a case, that the patient was, in a manner, free from fever in

the day-time; that the paroxysms had regularly returned at nearly the same hour every evening; and that the urine, on the subsidence of the sweat, deposited a lateritious sediment, whilst it was clear at the top. In short, the febrile exacerbation about the beginning of the afternoon, the branny sediment at the bottom, and the greasy appearance on the surface of the urine, were all wanting in this case; and as these are the general attendants of the true pulmonary hectic, he concluded that the case was not genuine phthisis, though the expectoration was purulent. He reports other cases of a similar character, all of which readily yielded to the exhibition of the cinchona; and though he does not attempt any explanation of their seat and pathology, yet they were obviously instances of chronic inflammation of the bronchia, attended with an intermittent or remittent form of fever.* This paper is highly important in a practical view; and as the history, diagnosis, and treatment of chronic inflammation of the bronchia are still very imperfect, it is well calculated to stimulate inquiry, as well as immediately to convey useful information. In the earlier part of my practice, I believe that I occasionally confounded pure cases of chronic inflammation of the bronchia with tubercular phthisis; and having known others of more experience

* The paper of Dr. Samuel Chapman was pointed out to me by an excellent practitioner, who had himself recently and successfully tried the bark in a bad case of the same description. It appears from a quotation which Dr. Badham has given, at page 46 of the first edition of his valuable essay on Bronchitis, that Stoll had used the bark beneficially in certain chronic affections of the bronchia, which resembled phthisis.

than myself do the same, I am anxious to fix the attention of medical men on the subject, that it may be more thoroughly investigated. When the sputa are found purulent, and in combination with slow fever and night-sweats, it is no uncommon thing to pronounce the case hopeless; and yet many an instance of this kind may be merely chronic inflammation of the bronchia, which under our ordinary measures not unfrequently admits of a cure, but which, from neglect, or want of information, is also not unfrequently fatal.

It will be perceived, that I have mentioned many remedies for chronic inflammation of the bronchia, and, in citing the paper of Dr. Samuel Chapman, have added bark to the number. The same disease, it is notorious, may be cured by different measures; and the same disease, too, may actually require different measures, from the term of its duration, from the habit of its subject, and from other peculiarities. But still this complexity of prescription argues a defective state of information on the subject. It shows, indeed, that we are not yet, from the cautious observation of particulars, arrived at sound general principles in the therapeutics of this disease, to say nothing of the pathology. The measures, in truth, which are above recommended, have been so far from generally successful, that I have sometimes felt it my duty to prescribe others; and among these have been ipecacuan and digitalis, the last of which has occasionally succeeded, where every thing else had previously failed, and its success seemed to depend upon its reducing the

action of the heart. How others may feel I do not know; but in reflecting upon the state of our materia medica, it appears to me much in need of improvement. Most writers on the subject have presupposed that the operation of medicines is the same, or similar in sickness as in health. Hence many of the circumstances of disease, which exceedingly modify the operation of opium, antimony, mercury, purgatives, and other important agents, have been overlooked; so that we neither accurately know when these agents are indicated, nor contraindicated in a great variety of interesting complaints. If the conditions of the system under which medicines were exhibited had been carefully marked, with their several effects under those conditions, we might now have been in possession of sufficient facts to draw general and correct inferences respecting their influence and application; but this is a work which yet remains to be accomplished, and I have merely alluded to it here, that men of inquisitive minds may turn their powers to a department of medical science, the cultivation of which promises almost more than any other. Many articles require to be erased from our pharmacopœias, and we want precision in the application of those most commonly employed, all of which is attainable by assiduous observation of the sick; but it is also to be expected, in the progress of knowledge, that some new agents may be discovered, which will greatly extend the efficacy of our art.

Before, however, concluding the treatment of

chronic inflammation of the bronchia, I must caution the practitioner not to exhaust the powers of his patient by too rapid or too long a succession of expedients: and this is an error into which we are very apt to fall in the treatment of many chronic diseases, from an anxiety to alleviate or remove some prominent symptom; so that when one measure fails, we recur to another, until at last the accumulated irritation of unsuccessful applications is added to that of the disease, which of course is finally aggravated. Where none of the most promising medicines act beneficially in chronic inflammation of the bronchia, a long voyage to a warm climate should be immediately recommended. This simple change sometimes succeeds better than any other means, and indeed it will seldom fail when early adopted. But where the season of the year or some other cause prevents us from carrying this measure into effect, a regulated temperature must be adopted in its stead; care being taken at the same time to have the apartments properly ventilated, by removing the patient from one to another at convenient periods. Late in the autumn of 1816, I was consulted by a gentleman who was deemed to have a strong consumptive tendency by some of his friends, but I found him labouring under chronic inflammation of the bronchia, complicated with dyspepsia and some affection of the liver. He was extremely pale and emaciated, very short of breath, wheezed, coughed, and expectorated much every morning; but he had no night sweats, and his pulse was only about 86 in the minute, except in the evenings,

when it usually rose a little higher. As the winter was then fast approaching, as a removal from home might have immediately exposed him to cold, and as he was a man of fortune, I advised him to shut himself up in a suite of rooms, guarded by double windows, and a regulated temperature. Under this plan, together with an occasional blue pill, a mild purgative, simple diet, and a short trial of the balsam of copaiva, he passed the winter over tolerably well; and though the pectoral symptoms were occasionally increased by accidentally taking an indigestible meal, yet he sailed to the Mediterranean in the following spring better than he had previously been. This gentleman now and then tried the inhalation of æther, but it did not seem to be of any service to him; though I have known it and other fumes of benefit, by removing the morbid state of the membrane which lines each bronchion. The inhalation of the vapour of heated pitch or tar is a favourite remedy among some of the lower orders of society in bronchial defluxions; and this affords a strong presumption that it must have formerly been used by physicians, as most popular remedies have descended to the public through the faculty. I have not yet seen sufficient of the effects of this remedy, to enable me to estimate its general powers with any thing like precision; but an instance occurred to me where it occasioned an acute attack of inflammation of the windpipe, and I have met with a few others in which it produced an insupportable irritation of that part. The vapour of burning pitch has recently been recommended by a most re-

spectable authority as a remedy for the tubercular phthisis itself, in the advanced or suppurative stage; and though one might be inclined to suspect, that the cases apparently cured by it had simply been instances of chronic inflammation of the bronchia, yet any measure which holds out the most distant hope of success merits a fair and full trial.

Hippocrates was acquainted with ulceration of the trachea, for he expressly recommends those affected with a hot ulcer, called aphtha, in the aspera arteria, to avoid the wind and the sun;* and Ætius taught that ulcers near the extremity of the aspera arteria, or in the extremity itself, were curable by keeping the patient in a supine posture, and by raising the head with pillows to a considerable height.† In the 22d letter and the 2d book of his work on morbid anatomy, where the above two references will be found, Morgagni minutely details the cure of one Stephen Cheli, a man of rank, who had long been troubled by a cough, purulent and bloody expectoration, with a sense of pain a little below the larynx, and in no other part. From this combination of symptoms, and the absence of a continual fever, he detected the disease to be an ulcer in the trachea, which had been mistaken for consumption by other physicians, to whom he alludes in a style of singular

* De Morb. l. 2. t. apud Salium 112 & 114.

† Medic. Tetrabibl. 3. Serm. i. c. 64.

modesty and simplicity, in every way worthy of his mind. First of all, he ordered the patient to shut himself up in a warm chamber neither low nor close; and there giving up all business rather to hear his acquaintance than to talk much himself, and when he did, to speak in a low and slow tone. Having found that woman's milk agreed very well with him, he made his patient suck about half a pint from the breast of a healthy nurse, morning and evening. He likewise informs us, that he took particular care in directing her to use proper aliments, and to avoid variety of them as much as possible. The neglect of this circumstance he considers is the only reason why the milk of women is not better than that of animals for medical purposes, and adds that Euryphon and Herodotus preferred it to others in consumptive disorders, as it was familiar to us, and of the same nature with ourselves. In this remarkable case, wine, and every thing else that might be injurious, was carefully avoided: the dinner and supper of the patient consisted of a pudding made of barley-flower with a little china-root, but without sugar; and these ingredients being mixed up with milk, drawn fresh from a cow which had been fed upon barley and chaff, were reduced into a kind of calx over a slow fire. This regimen was strictly observed from the end of November to the middle of May, and the result was, that the patient recovered, and remained well for sixteen years afterwards. As this was generally esteemed to have been a case of consumption, Morgagni observes,

that there were no consumptive persons in the city who did not prescribe the same method to themselves, but not one of them escaped.* This case may show us how much may be done by those minute regulations of diet and the like, which we are perhaps too liable to neglect as things of minor importance; but in conducting the treatment of chronic diseases, attentive observation will convince us, that without the conjoined efficacy of a proper regimen, medicine can generally do little or nothing.

It was formerly observed, that the most distinguishing mark of ulceration of the trachea, is pain, soreness, or some species of uneasiness referred to a particular part of the windpipe, in combination with purulent sputa; and if to this diagnostic sign a peculiar difficulty of breathing, with oppression of the præcordia, and a loss or hoarseness of the voice, be superadded in any case, we may be fully assured of its nature. Mr. Bedingfield remarks, in his valuable compendium of medical practice, that every case of ulcerated larynx and trachea which had fallen under his observation, terminated fatally; and, with the exception of two instances which manifestly arose from syphilis, and which were early detected, my experience has been equally unsuccessful in this disease. Both these

* For a more detailed account of this case, the reader may consult vol. i. p. 666, 667, 668, of The Causes and Seats of Diseases investigated by Anatomy. Translated from the Latin of John Baptist Morgagni, by Benjamin Alexander, M.D. In three volumes. London: printed for A. Millar, and T. Cadell, his Successor, in the Strand. 1769.

cases were cured by saturating the system rapidly with mercury, and by maintaining its specific action for some time. That part of the trachea, which anatomists distinguish by the name of larynx, is perhaps most liable to ulceration ; and when the ulceration is seated there it is more rapid in its progress and more violent in its character, than when seated in any other part of the windpipe. From the generally fatal tendency of ulcers of the trachea, the ingenious author above mentioned asks, whether it would be adviseable to make an opening into the trachea or larynx, and apply such substances to the sore as might excite a healthy action on its surface ; and, apparently by way of giving force to this query, he mentions having seen several ulcers on the skin, which bore a strong resemblance to those of the larynx, cured by the application of nitrate of silver. The operation here suggested, however hazardous it may appear, deserves an additional claim to our notice from two circumstances, which Mr. Charles Bell has communicated in the first part of his Surgical Observations. This scientific surgeon performed the operation of laryngotomy on a woman for a disease of the larynx, which treatened instant suffocation ; and it was observed, that the air drawn into the artificial opening oppressed the respiration, probably from inspissating the mucus, or drying the lining of the pulmonary passages. To remedy this defect, the patient instinctively wrapped a little lint about a probe, dipped it in water, and then put it into the wound, allowing the water to drop down the windpipe, as it appeared to facilitate

the respiration, and the dislodgement of mucus.* If one substance can be thus put into the windpipe, why may not another? But this is not a mere question for consideration, the thing has actually been performed. In a female patient, whose epiglottis appears to have been destroyed by ulceration, Mr. Charles Bell ascertained, by passing his finger over the root of the tongue downwards, that the glottis was rough and irregular with ulceration; and as the case seemed all but desperate, he repeatedly touched the glottis with a pad of lint fastened to a wire and dipped in a strong solution of nitrated silver.† So far from this bold treatment exciting irritation, it was attended with the most soothing and beneficial effects. Mr. Charles Bell was led to it from considering the relief which this caustic solution gives in common sores, in ulcers of the cornea, and in irritable spots of the urethra. The above circumstances afford a strong presumption, that the operation which Mr. Bedingfield has suggested, might be undertaken with a chance of success in some cases; and where, humanly speaking, no other mean is left to assist the patient, why should not this be tried as the last resource of our art? And yet in cases of extreme emergency, tracheotomy ought not to be deferred too long, whatever may be the ulterior determinations of the operator; for where it is delayed beyond a certain period, a

* See Part I. p. 29, 30, of Surgical Observations, being a Quarterly Report of Cases in Surgery. By Charles Bell. London: printed for Longman & Co. 1816.

† See Part I. p. 35, 36, 37, of Surgical Observations, &c.

serous effusion takes place into the lungs from the continuance of their preternatural labour, and then it can do no good.

The foregoing facts not only suggest the occasional propriety of a local application, through an external opening, to an ulcer in the windpipe, but they seem to indicate the probability of benefit from the use of certain vapours or fumigations; indeed where the difficulty of breathing is not so great as immediately to threaten life, perhaps some vapour or fumigation may hereafter be discovered to answer all the purposes of a solution of lunar caustic applied directly to an ulcer of the windpipe. At the same time it is certain, that ulcers of the trachea are often but the last effects of insidious inflammations, the early symptoms of which have not yet been accurately detailed; but it is to be hoped, that practitioners will hereafter mark and illustrate those symptoms, and thus enable us frequently to prevent what we now find so difficult to cure. In the secondary syphilis, however, ulceration of the windpipe sometimes apparently arises without any intermediate stage of inflammation, or the ulceration is at least almost simultaneous with the inflammation: yet this does not invariably obtain, for at other times the ulceration in the trachea appears to follow as an extension of that which had primarily existed in the fauces. It is well known, that those who are subject to lose their voices from cold or similar causes not unfrequently have purulent expectoration at last, and they are usually supposed to

die of genuine consumption. But though such persons are unquestionably liable to lapse into phthisis, yet they are sometimes affected with ulceration of the trachea, a disease which has often been mistaken for the former. Whenever we are called to any patient with a hoarseness, attended with some disturbance of the respiration, we should be most minute in our inquiries, and cautious in our treatment; since these two symptoms may be the concomitants of that obscure species of inflammation which produces an ulcer in some part of the windpipe. In venereal ulcers of the throat, we should be especially attentive to the state of the voice and respiration, that we may not allow an ulcer to invade the larynx unawares. The voice is always changed in a venereal sore-throat, the patient speaking through the nostrils with a sort of sharp metallic sound; but when the windpipe becomes ulcerated, he generally speaks are in a thick hoarse whisper, and has an irritating cough, while his respiration is more or less uneasy, and even spasmodically affected at times. In the chronic hoarseness, which arises from cold or other direct irritants of the windpipe, no remedies are so useful as emetics, copaiva, a regulated temperature, and occasional blisters and laxatives; but the hoarseness which owes its origin to syphilis requires, like every other symptom of that disease, its specific remedy. Many cases of secondary syphilis are accompanied by loss of flesh, general debility, paleness of the skin, and some degree of fever at nights; and, especially if there

be an ulcer in the throat, a tickling cough is apt to be present, so that the character of the case might appear truly consumptive, but for the peculiar concomitants of lues. The practitioner should therefore be constantly on his guard, lest from a first impresssion of the constitutional and pectoral symptoms, he might overlook the real nature of the disease and omit mercury: on the other hand, he ought to be equally attentive not to mistake a simple and genuine phthisis for any modification of syphilis; since, however excellent mercury may be in the latter, it is by no means appropriate to the former. In common ulcers of the trachea, copaiva appears to be worthy of a trial, as it often acts favorably in inflammations of that part.

Chronic inflammation of the pleura is very often remediable if it be early and properly attended to, but when it has existed for some time the best mesures will generally fail. In its first stage, before effusion has taken place in the thorax, one or two small or moderate bleedings from the arm ought mostly to be premised. Afterwards leeches and blisters should be applied repeatedly and reciprocally to the chest, in conjunction with daily diuretics, occasional laxatives, and an antiphlogistic regimen. If these measures prove unavailable, the mouth must be slightly affected by calomel, and the recently dried and powdered squill administered, as soon as the ptyalism occurs, and gradually increased in quantity until it acts

powerfully on the kidneys. The operation of calomel as an alterative in such instances is sometimes highly useful, but it ought generally to be given with small doses of opium, which allay irritation and promote a determination of blood to the surface. Exhibited while the system is under the influence of mercury, squill is often an excellent diuretic, and from this property it tends to alleviate affections of the pleura and to ward off serous effusions within the bag of that membrane. But for squill to be efficient as a diuretic it should be given whilst it is fresh; and the principal cause of its frequent failure is, that the preparations of it, which we commonly prescribe, have been too long kept in the shops. The upper poles of the bed should be raised eight, ten, or twelve inches by placing blocks of wood under them, as before mentioned; or a frame, with an equal elevation, should be made of the size of the bedstead, and fastened to it by screws, and upon this frame the bed or mattrass must be laid. An inclined plane, such as is here described, frequently enables patients to sleep with some degree of comfort, who would have otherwise passed most uneasy nights. Of course a foot-board is requisite whenever the bed is thus raised at the top, to prevent the body from sliding down. The temperature of the sitting and bed rooms should be regulated according to the feelings of the patient, and to the state of the skin; but it should seldom be below 60°, else there will be a danger of inducing chilliness of the surface, a circumstance

which is apt to aggravate the pectoral symptoms. In the last stage of chronic inflammation of the pleura, when serous effusion in the cavity of the chest, or suppuration in the lungs has supervened, the efficacy of medical agents generally amounts to but little. For the removal of effused serum, a cautious and continued trial may be made of digitalis and squill, with a light infusion of columbo and the carbonate of potass: and where these do not answer by themselves, the system should be put gently under the influence of mercury; and the digitalis and squill being then again administered, they will sometimes act as powerful diuretics. The whole class of diuretics often fails before the administration of mercury, and sometimes succeeds after it, a fact which must have been long familiar to many experienced practitioners. When an abscess exists in the body of the lungs, we do not know, with certainty, of any remedy which operates as a vulnerary to the part. But by placing the patient in a mild fresh atmosphere, by administering an emetic occasionally to relieve laborious respiration, and by supporting his strength with nourishing food, nature will now and then be enabled to effect the recovery. The common swing will often be useful as a palliative for the extreme dyspnœa which so frequently attends hydrothorax or an imposthume in the lungs; and I have been sometimes struck to see in confirmed consumptions how easily patients seemed to breathe under this motion, while every other greatly disturbed the respiration.

When chronic and simple inflammation attacks the parenchyma of the lungs in the first instance, the treatment must be pursued upon the same principles as in chronic inflammation of the pleura; but in the former it is probable, that considerable advantage might be derived from digitalis, which is frequently serviceable in the incipient stage of the latter, when sufficient depletion has been premised. In all inflammatory affections of the pulmonary organs, the lungs ought to be exercised as little as possible; and therefore both motion of the body, loud or long conversation, and the like, should be prohibited. An interesting anecdote is told of Malebranche, which may serve to illustrate this particular. In the year 1715, Berkeley had an interview with that celebrated man. "The conversation turned on the non-existence of matter. Malebranche, who had an inflammation in his lungs, and whom Berkeley found preparing a medicine in his cell, and cooking it in a small pipkin, exerted his voice so violently in the heat of their dispute, that he increased his disorder, which carried him off a few days after." * From Mr. Dugald Stewart,† it appears, that this was the only interview which these two memorable persons had: and however striking it may be in a biographical point of view, one cannot but regret that it ever

* Biog. Brit. Vol. II. p. 251.

† See p. 122 of Dissertation First: exhibiting a general View of Metaphysical, Ethical, and Political Philosophy, since the Revival of Letters in Europe. By Dugald Stewart, Esq. F. R. SS.—In Vol. I. Part I. Supplement to the Fourth and Fifth Editions of the Encyclopædia Britannica.

took place; since it seems to have been the immediate occasion of shortening the life of one of those gifted individuals, whose labours form the materials upon which the minds of others are engaged for the instruction of mankind.

When any of the foregoing affections exists in phthisical habits, it requires the more care not only on account of its immediate disturbance, but also on account of what it might ultimately occasion: yet whenever we are compelled to bleed such habits we must make the depletion as moderate as the existing circumstances will permit; for we must never fail to recollect that very copious losses of blood may be an indirect cause of consumption, and that in persons hereditarily predisposed to it, moderation is the golden rule as to venesection. This remark even obtains in such persons when they are attacked by an acute or sub-acute inflammation of the pulmonic system, or indeed of any other part. We must certainly attempt at once to remove the inflammation by decisive means, otherwise we place the life of the patients in immediate jeopardy; and it would be gross imbecility to stand deliberating about a distant and contingent danger, and to allow a present and perilous disease to advance without interruption. Nevertheless a judicious physician would not only promptly encounter the present disease in persons of this description, but he would also if possible take care, that while his measures were directly efficacious, they should not be so power-

ful as eventually to lead to another disorder. In all highly acute diseases, the lancet is the right arm of medicine, perhaps calomel the left. But at the same time the mode of application of each of these powers requires to be varied according to the age, constitution, and other circumstances, even in ardent fevers: and where we have grounds for suspecting a consumptive tendency, we ought generally to procure the purgative without the alterative operation of calomel, after the discreet employment of the lancet. Two modifications of the strumous temperament were before pointed out: one in which, with the other known indications, the skin is naturally pale, and the circulation sluggish; the other in which the circulation is naturally brisk, and the complexion sanguine. The last bears depletion much better than the first, but in both excessive evacuations of blood are liable to break up the general strength; and as I consider, in common with many writers, that phthisis is nothing more than scrofula of the lungs, it may easily be called into existence by too much depletion, like every other modification of scrofula. Neither must our attention be solely confined to the removal of an acute, or of a sub-acute or chronic inflammation in phthisical habits, but we must extend our solicitude throughout the whole of the convalescence, lest insidious disturbances of action should afterwards arise and proceed in some of the viscera, especially in the lungs. So many remarks having already been made on other local irritations which may occasion phthisis, it were needless

to resume them here; but I cannot refrain from again pointedly observing, that when those irritations exist in the digestive organs, the Harrogate sulphureous water will, upon the whole, be found one of the best preventives.

It was before noticed, that two circumstances are necessary for the production of the true phthisis: first, a predisposition in the lungs to the tubercular action, and secondly the concurrence of an occasional cause to excite that action. The mere removal of the occasional or exciting causes of pulmonary consumption, has often been mistaken for the cure of that disease. Were I to enumerate, as direct recoveries from consumption, the instances in which it has been averted by removing the exciting causes, my success would seem great; and yet, even in the incipient phthisis, I have not often succeeded in arresting its progress, when the true tubercular action has been developed. If this statement shows how difficult it is to cure phthisis, when once it has taken root and begun to spread in the lungs, yet it also proves that threatened attacks of this formidable malady may frequently be warded off by opportune care and proper measures. If we examine into the history of those cases which come before us, we shall often find, that the symptoms of phthisis had been preceded by those of some local irritation, or by indications of a breaking up in the general health from the causes already specified. Now when phthisis is preceded by either of these

states, its prevention is generally within the power of physic, provided advice be early obtained; but it too frequently happens, from delay on the part of patients, that the structure of the lungs is disorganized when the practitioner is first consulted, and unfortunately all that is left for him to perform, is to palliate the prominent symptoms. It is surprising how careless patients are about themselves in the commencement of those chronic diseases, under which they are enabled to perform their ordinary offices; and so long as they can walk about with tolerable ease, they flatter themselves that all is safe, when the complaint is day after day undermining their very vitals. No cough should be allowed to exist without attracting attention from the first, but especially if it be accounted slight or trifling by the patient; for that is frequently the short tickling cough which ushers in the assemblage of symptoms, by which consumption of the lungs is finally excited.

When called to any case which has the character of a threatened or of an incipient phthisis, the practitioner must minutely inquire into its real nature, that he may ascertain whether or not it be connected with any local irritation inside or outside of the chest, or with any depraved state of the general system. If such a local irritation, or such a depraved state of the general system actually exist, the chance of recovery is the greater; for if either can be removed, by the means already intimated, the pectoral symptoms may disappear, provided

they depend upon a sympathetic disorder of action, and not upon derangement of structure. On the contrary, should the phthisical signs be unconnected with morbid conditions of this nature, perhaps the measures upon which most confidence is to be placed, in the present state of our knowledge, are those which act directly or indirectly on the skin, at least this is the result of my own observation. But it may first be naturally inquired, what is the power of blood-letting in the primary stages, as it is now becoming so favourite a remedy? Celsus advises venesection, Pringle does the same, and other authors of note as well among the ancient as the modern: but I nevertheless suspect, that it will rarely of *itself* stop the approach or advancement of phthisis, except when chronic inflammation of the pleura, of the trachea, or of other parts is operating as an excitant of the latter in habits hereditarily predisposed. In some cases of apparently genuine phthisis I have ordered repeated full bleedings from the beginning, until it would have been temerity to proceed further: yet the disease passed on, and the blood drawn generally exhibited the buffy coat to the final operation. From this last mentioned circumstance some might contend, that the venesection should still have been boldly ventured on, as the blood so evidently showed inflammation. But in reply to this remark it may be urged, and justly too, that the buffy coat may be both occasioned and maintained by repeated abstractions of blood; for more or less re-action of the heart and arteries, by

which the buffy coat is produced, always follows blood-letting when carried beyond a certain point, and this is particularly the case in the irritable subjects of a phthisical tendency. Upon this principle, therefore, the very measure with which we so often subdue inflammation may be made the cause of producing it in certain persons, and in certain diseases; and however boldly and laudably we use it in intense inflammations or congestions, it requires a more deliberate and wary employment in complaints of a chronic character. Most certainly I have seen small or moderate bleedings of benefit in incipient phthisis, when followed by blistering, but wherever there is great constitutional delicacy, we must be cautious even in having recourse to them; and at all times when we determine on venesection in phthisis, we must endeavour so to regulate it as not to make it the occasion of an increase of that re-action which it is designed to moderate. In the true tubercular phthisis, it is not a simple but a complicated irritation which most frequently exists in the lungs even in the commencement; an increased fulness of the capillaries either producing or exciting tubercles, and the tubercles themselves re-acting upon and irritating those portions of the lungs in which they are imbedded. Very copious or very repeated venesection only tends to render the whole capillary system of vessels more irritable: from reason alone, therefore, one would conclude, that they could not be serviceable in phthisis; and my own experience fully bears me out in affirm-

ing, that this is actually the fact, small local or cautious general bleedings, so far as I have observed, being preferable to large ones. The lancet is perhaps only admissible in the earlier periods of those cases attended with topical fulness, and a marked constitutional excitement. However undeniable it may be, that phthisis is an excitive or an inflammatory disease, yet it seems probable, that the concomitant excitement or inflammation is of a specific nature ; at all events neither the one nor the other is within the common control of those agencies which so successfully impede the ordinary excitement and inflammation of febrile diseases. But as venesection is a measure of such great importance, and as men of approved talents have spoken favourably of its decisive use in an unmixed phthisis, it would ill become me to disregard their authority ; and therefore it has been my wish simply to state the results of my own observation in regard to it, that the consideration of it may still remain open to fair inquiry.

As I conceive, in a pure and incipient phthisis, that the most beneficial measures operate through the medium of the skin, it may not now be amiss to say a few words respecting those measures. The best thing that can be done for one in whom pulmonary consumption is suspected, or actually existent in an incipient state, is to send him immediately to a warm climate ; and the voyage to the place of his destination should be made rather long than short, as sailing upon the sea is very

useful on many occasions. When physicians are called to a threatened or an incipient case of genuine phthisis, they are often anxious to keep the patient under their own eye, with the hope that they may be able to prevent or to stay the disease; and thus from the best motives, day is allowed to steal over day, week over week, and month over month, until at length suppuration makes its fatal approaches, and until almost every chance of recovery is at an end. A change of climate or a sea voyage at such a time can effect nothing; and removing patients from home then, is only to deprive them of those comforts which tend to mitigate their last sufferings. It is always a great and often a mortal error to protract a sea-voyage, and a change to a warm climate, in an approaching, or incipient consumption. When the voyage is determined on, and even when it is undertaken early, the patient must cover the surface with flannel or fleecy hosiery, so long as he shall remain in a cold or changeful atmosphere; and even when in a warm climate, he must still be attentive to the state of his skin, and be mindful to avoid being chilled by night-air or by damp linen next the surface.

In the summer of 1816, I was consulted for a young gentleman, in whose welfare I felt most deeply interested. While with his tutor in the South of England, he was attacked by hæmoptoe, attended with a short tickling cough. His friends being naturally alarmed at the symptoms, he was

removed, and placed under my care. On first seeing him, I was much struck with the change in his appearance, and no case could better exemplify than his that alteration in the state of the skin, which has been so pointedly noticed. In the preceding year he was ruddy and stout for his age and height; but his complexion was now of a sickly paleness, interspersed with some irregular streaks of red, and he was shrunk in his flesh. The hands and the rest of the surface were blanched to what they had formerly been; and his hair, which was peculiarly bright in health, now had a dirty appearance, and seemed in many parts to be split at the ends. His eyes had acquired a sort of pearly whiteness. At intervals of about ten or twelve minutes, a momentary flush of red was spread over one or both of his cheeks, and then it left that remarkable pallidity to which I formerly alluded. His cough was of that short tickling description, which commonly marks the invasion of the true phthisis; and his circulation was in so very excitable a state, that the least exertion quickened it many beats in the minute. Though a little more capricious than usual, his appetite on the whole remained good; and on examination I found the alvine evacuations healthy. His tongue was furred a little and whitish at the root, but smoother and redder towards the end than natural. On a deep inspiration he felt some uneasiness within the chest, and generally coughed; and added to these symptoms, he had some degree of fever at nights with a tendency

to morning perspirations. This appeared to me to be a genuine threatening of phthisis, for no common local irritation could any where be detected, and nothing had occurred to deprave the general habit; and yet in this case there was an anxiety expressed about the nature and tendency of his complaints by the patient, which is not common in such an affection. The concourse of symptoms, however, alarmed me exceedingly, and I requested his friends to take him to the South of France without loss of time. Mean while I directed him to clothe himself rather more warmly, to regulate the temperature of his sitting and bed room, to live chiefly upon a milk diet, and to ride out occasionally when the weather was warm and temperate. On account of the excitable state of the circulation, I did not order blisters or any other irritants to the chest, and the emaciation and weakness deterred me from the use of the lancet, or even of local blood-letting. The compound rhubarb pill was all the medicine which was ordered, and of this he took one or two occasionally when the excreta did not seem proportionate to the ingesta. Under this mild plan, however, he somewhat improved until the preparations were completed for removing him abroad; and he afterwards bore the voyage by sea, and the travelling by land better than could have been expected, and I have had reports of the continued improvement of his health. This case may show how much may be done by a seasonable removal into a warm climate; and whenever the circumstances

of the patient can admit of it, I must once more repeat, that it ought to be undertaken without delay.

But as this measure is only fitted for persons of a certain rank, it may be demanded, what is to be done for those who cannot go abroad? In several instances I have advised such patients, threatened with consumption, to take a few voyages in vessels that traded from one part of England to another; and in the spring, summer, or autumn, they often answered an excellent purpose, especially when the weather was fine. But I have always strongly enforced the necessity of very warm clothing while they were sailing from place to place; and pointed out to them the example of the sailors of some of the northern ports, who mostly wear flannel next the skin when at sea, and besides this, protect themselves still more by woollen jackets, trowsers, and coats. If patients be regardless of their clothing when at sea, they are very apt to catch cold, and may thereby counteract the good of the voyage; whereas, if the whole surface be defended properly with flannel or fleecy hosiery, they place themselves under the most favourable circumstances.

The benefical effect of a sea-voyage and of a warm climate, in the threatening or first invasion of phthisis, is chiefly referrible to the influence which they have upon the surface; the nausea or sickness commonly attendant on the first, and the

high and genial temperature, of the last alike determining the blood to the skin. A new impression is therefore at once instituted and maintained, and that on so large an extent, and on so sympathetic a part of the body, as sometimes partly or wholly to arrest the disorder in the capillaries of the lungs. And when we are not able to command either of these powerful auxiliaries for the subjects of an incipient phthisis, we can find substitutes, the operation of which is somewhat analogous to theirs, though far less efficacious. Accordingly a regulated temperature, and the exhibition of tartarized antimony to excite nausea or vomiting, are sometimes combinedly advantageous in impeding or alleviating phthisical attacks; and I suspect, that if they were more early and perseveringly employed together, our success might be greater, where patients cannot be sent abroad. The efficacy, however, of sailing upon the sea cannot always be referrible to nausea and its sympathetic effects, for I have known a voyage useful, where no nausea was excited. In fact, sailing alone seems to increase the secretion of the skin, as we may observe in sailors, while at the same time it apparently communicates an invigorating influence; and to one or both of these perhaps its salutary power may be partly attributed in pulmonary affections.

In speaking of phthisis pulmonum, Heberden acknowledges, that patients bore sailing upon the sea well, even when they spit up great quantities

of blood; and he moreover adds, that the hæmoptoe has not been in the least aggravated by a voyage of six weeks, though excessive vomiting occurred during the whole of that period. If we permitted ourselves to reason, *à priori*, on matters which involve health and life, we might probably conclude, that emetics must necessarily be prejudicial in spitting of blood: yet I have found them extremely serviceable in that species of hæmoptoe which takes place in habits apparently phthisical; and agree with Dr. Bryan Robinson, and with Dr. George Rees, that they are, generally, preferable to the use of the lancet in such cases.* Not that I mean to imply by insinuation, that blood-letting is never needed in the hæmoptoe of these habits, but some remarkably impressive facts have inclined me to believe, that profuse bleedings are always hazardous: and even moderate ones are perhaps in general better omitted, unless there be the most distinct evidence of topical fulness with general excitement, and then cautious venesection is necessary. It is an excellent remark of Heberden,† particularly when applied to phthisical constitutions, that where an hemorrhage proceeds from the rupture of some very large vein or artery, venesection will not restrain it, and that when it proceeds from some

* Upon this point the reader may consult with advantage A Practical Treatise on Hæmoptoe, or Spitting of Blood. By George Rees, M. D. Member of the College of Physicians, &c. London: printed and published by M. Allen. 1813.

† On opening a Vein in Hæmorrhages. Read at the College of Physicians, December 11, 1771.

small one, it will stop without the help of the lancet. When spitting of blood is the result of an affection of the trachea or bronchia, emetics are not inadmissible; but when hæmoptoe is connected with obstruction in the liver, purgatives are then decidedly indicated, and, so far as I have remarked, emetics ought not to be exhibited. Neither can emetics be given to pregnant women attacked with hæmoptoe, without the hazard of causing an abortion, and on this account it is most prudent to avoid their administration. When spitting of blood does take place in pregnant women, it is mostly connected with hepatic disease, and with a general excitement of the arterial system. In such examples, therefore, moderate venesection is generally requisite and useful, particularly when followed by purgatives; and where the liver is manifestly affected, after a few doses of calomel, the almost daily exhibition of the Harrogate sulphureous water, with some aperient pill, will frequently be very advantageous. But as scybala are apt to be retained in the colon, castor oil ought occasionally to be administered, as it will more effectually and mildly dislodge them than any other medicine. When the skin is hot and dry in an hæmoptoe, cool air may be liberally admitted, and cool drinks given; but when the skin is cold, this practice requires caution, as it may tend to excite phthisis in the peculiar habit. In three or four cases of uterine hemorrhage, I have seen phthisical symptoms apparently called into action by the too free and long continued use of cold applications.

Whenever the practitioner is compelled to recur to these applications, he should afterwards pay the strictest attention to his patient; for from the combined influence of the cold, and the shock which the system sustains by large losses of blood, acute or chronic diseases often supervene, when nature attempts to rally by means of an arterial reaction. If there be much nervous irritation in any case of hæmoptoe, opium is frequently of great use, but especially when the loss of blood has been large; and my general experience of the efficacy of this medicine in copious eruptions of blood fully confirms the commendations which Dr. Stewart has bestowed upon it in uterine hemorrhages. When the system has been excessively exhausted by loss of blood, an extreme nervous agitation arises, which not only re-acts upon the heart and arteries, but which may destroy life from its mere continuance. This agitation is often so surprisingly calmed by opium, that I have seen patients, seemingly in the jaws of death, saved by its administration.

But in regard to the skin, my attention was first drawn to its consideration from observing the great changes which it underwent in its colour and functions on the approach or invasion of pulmonary consumption; and its pathological influence became still more interestingly set before me, when I saw some patients fall into that disease shortly after the disappearance of cutaneous eruptions, and others greatly relieved by the accidental

or spontaneous occurrence of such affections at an early stage. It naturally, therefore, became a question with me, whether any thing could be done for the prevention or cure of phthisis, by attending more closely to the state of the skin than had hitherto been done. What relates to the prevention on this head, has already been noticed, and it only now remains to prosecute the hints which have just been thrown out respecting the treatment, through the medium of the surface of the body.

If medical men were asked, what expedients, upon the whole, are really useful in checking or relieving the symptoms of an incipient phthisis, a large majority would probably be in favour of blisters; for concerning their agency less discrepancy of opinion perhaps exists, than upon that of most other means daily prescribed. In modern times the use of blisters has almost superseded that of issues, which were so famous in the ancient world, and which maintained a character for centuries; and though the former are decidedly preferable to the latter in many diseases, yet perhaps their application in chronic ones is too much limited to a particular spot. The ancients applied their issues to various parts of the skin, the moderns generally apply their blisters to one part. But, if my experience be allowed of any weight, we should resume the method of the ancients in many chronic diseases of the internal organs. When we apply leeches to the external vicinity of

an inflamed viscus, we suppose that their whole efficacy depends upon their relieving the fulness of the internal vessels, from their inosculation with those on the surface: yet only a part of their efficacy is really attributable to this effect, for I have found from experiments, the results of which shall afterwards be reported, that their influence on the general circulation is infinitely greater than has usually been imagined. Besides this, attentive observation will soon convince any one, that between the whole capillary system of vessels there is a sort of specific sympathy: so that influencing their action in one part of the body, frequently produces striking effects in that of other parts; and the more this circle of sympathies in the capillary vessels is investigated, the more important it will be found in pathology and practice. Now the efficacy of blisters is not altogether local, as has generally been imagined. No doubt they often operate a change of condition in the part beneath the place of their application, but independent of this and also of the local inflammation which they produce, they affect the constitution at large; and it is partly by this their general influence, that they powerfully contribute to destroy the mixed associations of many maladies. No local affection of consequence can exist without implicating the whole system in disorder; and, on the contrary, no general shock can be long sustained without implicating particular parts. Most of the measures which we employ act generally as well as locally; for there is an indivisibility of the vital as of the

mental principle. We do not so much cure diseases by directly removing them, as by instituting states incompatible with the existence of those diseases; and in considering the treatment of almost every complaint, it should be our object to discover, what are those remedies which create a local and general change inconsistent with that of the existing disease. It has long since struck me, forcibly struck me, that a most important improvement might be effected in the treatment of consumption by ascertaining the powers of those agents which act on the skin. But having hitherto not had the good fortune to be attached to an hospital where I could have a sufficient number of incipient cases constantly under my inspection, my inquiries have been retarded; and therefore all that I can do at present is, earnestly and anxiously to call the attention of the faculty to the subject, by limited facts and suggestions. In some cases of threatened phthisis, I have seen very great benefit from almost daily sponging the skin with water and vinegar, and have sometimes added a little salt with apparent advantage. The spongings not only lessened the disposition to fever, but also greatly refreshed the patient, increased the appetite, and lessened the cough; while they also seemed to communicate a tone to the surface, which enabled it to bear the influence of the atmosphere better than before.

Consumption has most frequently been presented to me in a confirmed state, when little was

to be expected from any measures; but even then I have seen much temporary relief of symptoms from very small blisters to the chest and other parts of the body, either applied at the same time or in quick succession. In other instances of this kind, crops of pimples in different parts of the skin have appeared to be beneficial; and the best mode of inducing them is by an unguent, made of the tartar emetic, camphor, and common white ointment, in the proportion of one drachm of the first and of the second ingredient, to an ounce of the third. A little of this compound well rubbed upon any part of the skin will soon bring out a crop of pimples; and where it is found to fail, the proportion of tartar emetic must be increased until it answers the purpose intended. Yet in the last stage of consumption, there are some cases where these and similar irritants procure no alleviation, nay, where they seem to do harm by increasing the fever; and in examples of this nature, the only measures in common use, which can be of much service through the medium of the skin, are a regulated temperature, and the occasional employment of the tepid bath, or of the tepid affusions. But as the last stage of consumption, with all its appalling concomitants, is merely the product of preceding disorder, we must rather endeavour to look to this disorder, and to inquire how far it can be affected by powers which operate upon or through the skin. Very small blisters applied to different parts of the integuments of the chest, aided by issues or pimples in the upper and lower

extremities, have seemed to arrest the progress of some incipient cases of consumption; but then their operation was assisted by one or two small bleedings, by occasional antimonials, by a regulated temperature, by a light diet, and by the warm bath. In other instances, however, these very measures failed, even when applied under circumstances apparently as favourable as in those where they had succeeded. These facts would perhaps authorize the conclusion, that what is called the tubercular consumption is a specific affection, under which some varieties occur; for if this were not the case, why should the same measures succeed in some, and utterly fail in others? The truth is, that the true tubercular phthisis does comprehend varieties, which have not yet been discriminated: and of this I have been convinced, from the various appearances of the pus, and from the different characters of the tubercles found in the lungs, as well as from the circumstances above noticed. If the nature and pathognomonic signs of these varieties could be ascertained, it would be an important step in the pathology of phthisis, and might perhaps finally enable us to improve the treatment.

The trials, however, which I have made of counter-irritation on the skin in incipient phthisis would not authorize me to draw a *general* conclusion as to their effect: in the first place they have not been sufficiently numerous, and in the next they have rarely been carried so far as I could

have wished, on account of the prejudices of patients or their friends. But it would give me infinite pleasure should this practice, in connection with other measures, be found efficient in certain cases; and even if it were thus efficient still we can hardly expect that our success from it in the main should be so considerable as in those diseases of an ordinary character, the varieties of which have been more correctly ascertained. In the treatment of most diseases, success is rather probable than certain. "When an experiment has succeeded in several trials, and the circumstances have been marked with care, there is a self-evident probability of its succeeding in a new trial; but there is no certainty. The probability, in some cases, is much greater than in others; because, in some cases, it is much easier to observe all the circumstances that may have influence upon the event than in others. And it is possible, that, after many experiments made with care, our expectations may be frustrated in a succeeding one, by the variation of some circumstance that has not been, or perhaps could not be observed." * What might be the effect of the revival of the practice of Ætius, I cannot pretend to determine: but I have long wished fully to try either it, or something like it, in genuine cases of incipient phthisis; and were I myself attacked by that disease, would not hesitate to adopt some similar method, most probably after the use of moderate depletion, and antimonials.

* Essays on the Intellectual Powers of Man. By Thomas Reid, D. D. &c. See p. 559. Edinburgh: printed for John Bell. 1785.

Some time ago a poor woman applied to me for advice, who seemed to be hurrying towards the grave, from the force of a recent but rapid consumption. She happened to be attacked by an eruption resembling the common itch, and the alleviation which it gave to the chest was so striking, that I resolved to let it spread on the skin. The phthisical symptoms wholly disappeared under its progress, and it was, after some weeks' duration, cured by the sulphur ointment; but by way of guarding against consequences, I ordered a seton to be made in one of the sides, and an issue in one of the arms. In the case of another female, who was nearly in the same state, the cough and fever gradually abated on the coming out and continuance of a spontaneous rash, and she recovered apparently from its influence alone. One patient was always relieved of a constitutional sort of cough, when pimples came freely out upon her face; but they disappeared entirely under the use of a lotion, and she shortly afterwards fell a victim to true consumption of the lungs. These and similar facts which I could mention have made a deep, an indelible impression on my mind; and if my desire be great to make their results recollected by others, the vital importance of the subject must plead my excuse.

On a first view it might be supposed that such extreme counter-irritation as Ætius has advised must necessarily be injurious. It might and probably would be so in a condition of health. The

case, however, is widely different when the body decidedly labours under disease; for counter-irritations are then often well borne, which would have been intolerable and injurious in a sound state. Apply a rapid succession of blisters to a strumous habit in whom no disease apparently exists, and you will soon excite the system into great disorder; but let another and a similar habit actually labour under disease, say of some of the joints, and you may apply blister after blister not only without injury, but with positive advantage. We are far too apt to reason about the operation of remedies in disease from what we have observed of their effect in health; yet we must always take into account the condition of the body at the time of administering our measures, otherwise we shall be liable to the most serious mistakes. The common mode of making issues has appeared to me extremely defective; for after the first irritation subsides they are generally allowed to exist a long time simply as drains, which are of little or no use. To be really efficacious, issues should be often renewed, that there may be a sort of perpetuity of irritation. In several scrofulous affections of the joints, I have seen more benefit from blisters than from issues, especially when the former have been managed in a particular way. My plan now is simply this. When the blisters are taken off, the part is dressed for the first time with any of the common cerates; but on the second dressing, the whole of the blistered cuticle is torn off, and the raw surface daily dressed with

the ordinary blistering ointment, until a considerable slough be formed. The slough is afterwards allowed to heal, and then the same process instituted again, so long as the disease shall remain unsubdued. The irritation of this treatment is frequently extremely great, but I have seen it remove scrofulous diseases, where every other expedient had failed. Whether it be applicable to any cases of consumption, which after all are really scrofulous, must be left for others to decide. But from the evidence before adduced, it is highly probable, that counter-irritation of the skin is not equally applicable to all cases; for even in regard to blisters, we see some patients bear them well, compared with others. One large blister often exhausts a great deal more than several small ones; and many patients are benefited from the latter, who are hurt from the former. In phthisis, too, some patients are exceedingly oppressed, and others exceedingly relieved in their breathing, by an elevated temperature; and this seems to depend upon some difference in the state or organization of the skin. Those who are relieved by an elevated temperature perspire equably over the surface; whereas in those who are oppressed, the skin becomes hot or dry,or there is only a very partial perspiration, and we may perceive their chests heave with a preternatural effort. Similar effects are produced by an elevated temperature in healthy persons,those who perspire freely bearing it well, and those who do not being greatly disordered in the respiration: and we may even observe

in the lower animals, that those which perspire the least, pant and labour the most in the lungs from heat. But it is time to conclude my remarks with respect to the influence of the skin in cases of consumption.

In the preceding hints the tepid bath has been mentioned as a proper expedient for phthisis. When used in the morning or evening, it often lessens the hectic in incipient, and sometimes even in confirmed cases. But the temperature of it should rarely be beyond 94° of Fahrenheit, the patient should seldom remain in it longer than a quarter of an hour, his skin should be well dried and rubbed with flannel after he comes out of it, and he ought to rest upon a bed or sofa for some time, lightly covered. If these precautions be disregarded, the tepid bath will frequently do harm instead of good; and indeed when they are observed, it produces exhaustion or irritation in some—so various are the effects of the same measure in different subjects. When there has been any considerable hæmoptoe, I have never ventured upon the use of the tepid bath; but in many instances, where the expectoration has been merely streaked with blood, it has been attended with advantage. Where spitting of blood is connected with high vascular excitement, one would naturally suppose the tepid bath to be inadmissible; but where, on the contrary, it appears to be connected only with irritation and constitutional delicacy there need be no dread of its employment,

provided the temperature be cautiously regulated. One of the ablest men and ablest physicians of this country, I know to be partial to the use of the tepid bath in those passive hemorrhages of the uterus, which happen in weak and delicate habits; and if it can be safely and advantageously employed under such circumstances, perhaps it might be beneficially applied to similar effusions of blood from other organs. Local disturbed action of the arteries, or local fulness of the veins, frequently exists in combination with great constitutional debility: and hence we frequently see the most delicate women very liable to copious menstrual or lochial discharges. When great constitutional debility exists, two states may be coeval, as its concomitants or its consequents: the first a disturbance of action in the capillary arteries, the second a fulness of the venous system. It necessarily follows that when the energy of the heart and arteries is much diminished, that they cannot maintain the natural current of arterial blood, and of course a proportionate accumulation takes place in the veins; and this venous accumulation appears to load and stimulate the capillaries of the arterial system, by retarding the return of the blood through them. These remarks render it probable, that the tepid bath might actually relieve many cases of what are called passive hemorrhages, by equalizing the circulation; for it not only brings a flow of blood from the interior towards the surface, but it communicates an equable tone to the heart and ar-

teries, thereby enabling them to resume their wonted offices. These suggestions, however, are merely thrown out for the consideration of others; and I wish it to be distinctly understood, that they are suggestions only, and not positive recommendations. In another place I shall mention the efficacy of the tepid bath, containing the sulphuretted hydrogen gas, in various chronic diseases; and shall adduce some facts which will render it highly probable, that the internal use of that air might be successfully applied to certain cases of phthisis. In the mean time, I shall close my remarks on the skin for the present, with some allusions to frictions, medicines, and regimen.

In the time of Celsus, the *iatroalipta,* or anointer, followed his business as a distinct branch of the profession:* and we well know, that both before and after, frictions and anointing were frequently recommended by some of the most celebrated physicians of the ancient world. It were of little use to inquire, why these methods should have fallen into neglect and disrepute in modern times; but that they might be revived with benefit to the community in many diseases, is a proposition highly probable, if not quite certain. Beyond the mere rubbing of the skin by dry and warm flannels, I have not ventured in phthisis

* Sanus homo, qui et bene valet, et suæ spontis est, nullis obligare se legibus debet, ac neque medico, neque iatroalipta egere. Cels. lib. i. cap. 1.

after the employment of the bath; but it is evident, that Celsus thought frictions applicable in some cases, and his authority is deserving of great respect. There is a principle in human nature which makes us shrink from present pain, even sometimes to the disregard of the ultimate good which that pain might produce; and hence in the application of blisters, in the making of issues, and especially in incisions by the knife, we often find a great reluctance on the part of patients to comply with our wishes. It is the operation of this principle, frequently strongest in uncultivated minds, that has chiefly prevented me from having made fair trials of counter-irritation by the skin in incipient consumption: but as friction is a much easier way of inducing an universal impression upon the surface, it might surely be worthy of some attention to ascertain its effects in this disease. Indeed it is my design to do so, when favorable occasions shall occur; but I could wish that the subject should claim the investigation of others. From Galen it would appear that the ancients anointed the skin, without frictions, after the warm bath, to prevent copious perspiration; and even this procedure, simple as it is, might be of some utility, where we wish to procure the soothing without the sudorific effects of the bath. Wherever the use of the tepid bath might occasion more fatigue than the patient could conveniently bear, the tepid affusion or ablution may be substituted when the hectic runs high.

It will have been perceived, that I have not noticed any of those medicines which are usually recommended for phthisis. The fact is, that those medicines have deceived me so often, as to make me doubt, nay to deny the utility of the most of them. It is a little singular, that we have an abundance of reputed remedials for those diseases which are most frequently found incurable; and, on the other hand, the agents are simple and few upon which we can rely in diseases of an opposite class. No great discovery was ever made in science but what has been simple; so simple, indeed, that men have wondered it should not have been made before. And if a specific should be found for consumption, it too will most probably be simple. We have surely had experience enough to convince us of the futility of confidently trusting to any of those medicines which have hitherto been recommended; and we should not remain stationary in our art by being satisfied with them, but endeavour to explore the virtues of things which have not yet been tried. Digitalis is an excellent drug, in common inflammations of the chest, and in some dropsies; but experience does not authorize me to say, that it is certainly useful either in an incipient, or in a confirmed phthisis, its effects being fairly weighed. The immediate relief which it sometimes gives, by arresting the pulse, and by exciting nausea and diuresis, is in general completely counteracted by the constitutional shock and nervous irritation which it communicates; and as for its influence in a confirmed phthisis,

however it may alleviate the cough for a time, it will always hasten death, by undermining the little strength which remains in the shattered system. When it was clearly discovered that digitalis greatly reduced the force and the frequency of the circulation, it was a very natural supposition, that it might be of benefit in both the stages of phthisis—in the incipient, by arresting the excitive action which produced or aggravated the tubercles—and in the confirmed, by allowing the lungs so much comparative rest, through its effect on the pulse, as to bring the sanative powers of nature fairly into play. This supposition, too, was the more specious, when digitalis actually appeared to exert an influence over the phenomena of common inflammation. But impartial experience has added another memorable proof, that the anticipations of theory are far more frequently disappointed than realized. When digitalis is carried so far as decidedly to weaken the heart, it seems to occasion great venous congestions of the brain and other vital organs, in combination with a peculiar collapse of the whole system. The consequence sometimes is, especially if he had been previously infirm, that the patient's life may be immediately hazarded; and if he should recover from the congestions and collapse, an excessive and tremulous sort of re-action succeeds, which makes his condition often worse than before he took the digitalis. The best way to remove the congestions and collapse produced by digitalis, is to give the patient moderate and repeated doses

of opium, a little brandy or good wine, and light support. The congestions, I have said before, are peculiar, inasmuch as they are attended by an universal collapse from the first, and in all cases of congestion combined with this collapse, opium will be found an excellent remedy. Digitalis has, through the heart, an effect on the brain, different from that of opium. The first produces venous fulness, the last arterial excitement; and it is on this difference of action, that the opium counteracts the influence of digitalis. When venous congestion occurs from ordinary causes, and when it is connected merely with general oppression, small or moderate blood-letting is one of the best remedies; but, on the contrary, whenever venous congestion and universal collapse take place at the same time, venesection would be a highly dangerous, if not a mortal measure. In syncope from loss of blood, the venous system is in a state of congestion, and also in the collapse of approaching death; but no practitioner would ever think of bleeding in either of these states, while he would not hesitate a moment to do so on the first attack of that species of apoplexy which depends upon venous congestion. The ancients, from having found the arteries empty after death, concluded that all the blood was in the veins during life; and we perhaps never weaken the action of the heart and arteries beyond a certain measure, without causing a proportionate accumulation of blood in the veins, and thereby destroying the natural balance of the circulation. In every state of col-

lapse connected with venous congestion, whether from loss of blood or any other cause, opium communicates an energy to the arterial system of the brain, which may often preserve life; but if other organs beside the brain be congested, it ought to be combined with calomel, as the conjoint power of these two agents rouses the whole arterial circle into activity. If any medicine could be found, which reduced the pulse in phthisis, and neither caused immediate congestion with collapse, nor ultimate arterial re-action with nervous agitation, perhaps it might be of great utility. The hepatized ammonia probably merits a trial, as Dr. Rollo found it reduce the pulse so much in diabetes; and if it should not answer, another might surely be found amongst some of our chemical combinations. But as for digitalis, it is probable that an increased fulness of the capillaries is not inconsistent with its sedative effects on the heart and larger arteries: for when great venous congestions exist, nature often strives to re-act by the capillary vessels; and hence a flow of urine and a moist skin not unfrequently attend the exhaustion produced by digitalis. Perhaps most of the good, without any of the bad effects of digitalis, may be procured from the cautious use of the tartarized antimony in threatened phthisis, where it may be expedient to lessen the force of the heart; for by small and repeated doses of the latter the pulse may be powerfully controlled, and a state similar to the nausea of sea sickness induced, which is sometimes so exceedingly bene-

ficial. The influence, however, of tartarized antimony and digitalis over the heart is different: the former occasions a small and rather quick pulse, the latter a slow, irregular, and rather full pulse; and yet in ordinary cases of inflammation, I have seen a similar result from these two agents over the topical disease through the heart. In fact they both possess powers, but especially in inflammatory affections of the lungs and their appendages, which have not yet been rightly estimated by the profession; and digitalis in particular has fallen into unmerited neglect in phlogistic diseases, merely because it has been found to fail in phthisis, which is a specific complaint.

Whenever there is a tendency to phthisis, large quantities of acids should be avoided; for by disordering the digestive organs, they may indirectly prove exciting causes. It is notorious in certain ranks of society, that the daily use of acids will produce leanness. Hence young women who have a disposition to grow fat, sometimes take them to counteract this, and often become chlorotic, but occasionally phthisical. The nitric and sulphuric* are the mineral acids which I have seen administered *in* incipient and confirmed phthisis, but I have not known them useful, further than that the latter sometimes acts on the skin, and as for the citric acid it is merely grate-

* The sulphuric acid which is commonly sold frequently contains a considerable portion of lead; and therefore this medicine should not be prescribed by any practitioner, until he has ascertained its purity.

ful as a drink; though an experienced physician lately told me that he had witnessed the most striking benefit from the internal use of vinegar in some cases of consumption. A blood-redness of the tongue is not an uncommon attendant on the hectic of genuine consumption. In many instances of common continued fever where a similar condition of the tongue existed, I have observed good effects from the muriatic acid, to the extent of two or three drachms, during twenty-four hours, largely diluted with water; but I cannot say whether it might be beneficial or not in phthisis where this blood-red tongue is present; and only mention the fact of its being so in certain cases of continued fever, by way of pointing out an analogous symptom that may perhaps ultimately lead to a practical improvement. Perhaps my own experience of the acids ordinarily employed may have before too decidedly prejudiced me against agents of a similar denomination; and indeed we are much too prone in physic to class the effects of some medicines from their sensible properties, though those effects may be exceedingly different.

Small and repeated doses of the sulphate of zinc have seemed to moderate the hectic in the last stage of consumption; yet the best measures with which we are acquainted too often fail even to palliate the symptoms. Opium is the chief mean upon which we commonly rely, in this country, for

alleviating the sufferings attendant upon the last stage of phthisis; but we should be mindful not to give it in too large or too frequent doses, lest it check the expectoration, and oppress the lungs, through its operation on the brain. For several years past, the Italians have been in the habit of using the prussic acid as a palliative in consumption, and recently it has been given in France, where even more than palliative powers have been bestowed upon it. From a conversation which I lately had with a foreign physician of great discernment and candour, who has often seen it exhibited, it would appear that the prussic acid does possess as high a palliative effect as any medicine now in use; for he informed me, that it lessened the irritation and cough, reduced the fever and pulse, and was very soothing to the feelings of the sick. Not more, I understand, than fifteen drops of this drug, as prepared by Scheele, can be administered with perfect safety in general throughout the day, and even this quantity cannot be safely given at once. A few drops only must be exhibited at first, and then it must be gradually increased, in divided doses, to the above amount,—such great care does this active substance require.

The apparent benefit which I have seen to result from sudorifics and diuretics in some cases of threatened consumption, would alone seem to indicate the applicability of medicines which act upon the kidneys and skin in certain examples;

but as my own experience is defective on this point, I recommend it to the notice of others, as well from practical as pathological considerations. Since the diet also affects the condition of the skin and kidneys, we want some information respecting its agency in incipient and confirmed consumption. It is well known, that the quantity and quality of the urine, and the appearance of the skin, can be materially influenced by diet among some of the lower animals, as experienced grooms are fully aware; and, to pass over some familiar facts that might be adduced, it is but reasonable to conclude, from the common analogies of nature, that similar effects would occur in the human species, through the like means. Now as the skin and kidneys both closely sympathize with the lungs, is it probable that the diseases of the latter might be benefited by certain articles of food which operate on the former? Trifling as it may appear to some, this is nevertheless a subject worthy of investigation, not only as it regards phthisis, but other diseases of the internal organs.

In a former page, a nutritious diet was recommended for those of a consumptive stock, and I must here re-assert, that it has in general appeared to me decidedly preferable to a spare one, as a preventive of this disease; but though I have advised the moderate use of animal food, and even of mild ale, yet distilled spirits and wine should be avoided, as they are poisons to delicate ha-

bits. For more than twelve years, I have watched the repeated threatenings of phthisis in one constitutionally predisposed to it; and the disease has hitherto been warded off by maintaining his strength with nutritious food, by defending the surface well with flannels, and by preserving the digestive organs in a proper state. Occasionally mild ale has been of great service to him; and whenever his sleeps have been broken at nights he has generally found advantage from a little animal food at breakfast. But at all times wine and spirits have been prejudicial to him, even when sparingly taken. Other instances of the same kind could be brought forward where a similar plan has had similar success. Although I am aware that variation of circumstances may require a variation of this plan, yet it may be safely affirmed, that few phthisically disposed persons bear a spare diet well, for it contributes to agitate the nervous and the vascular systems. The main consideration in respect to diet is, that it should support, without exciting the constitution; and if this rule be attended to, it will be easy to select the articles of food suitable to different individuals tainted with the latent tendency to phthisis. But what may prevent a disease, often becomes improper when it has once been developed. Accordingly, in an incipient consumption of the lungs, my observation would lead me to conclude, that a milk and vegetable diet is mostly superior to every other; and indeed so general an agreement, as to

this particular, among the ancient and modern authors, could have only arisen from the conviction of experience. In former ages the milk of the ass or goat was prescribed in Greece and Arabia, not because the physicians preferred it to that of the cow, but because the first was plentiful and the last scarce in those countries.* We find, however, that this preference afterwards continued more or less amongst the faculty, even in places in which cows' milk abounded; and though it is now disregarded by most of the practitioners of this country, it still exists in full force in the minds of the public, where medical prejudices always find a last asylum. Upon the whole, cows' milk is certainly the best. When it does not sit easy upon the stomach, a little arrow root or soda water may be added, or it may be boiled with coffee. In the last stage of consumption, those articles of food are the most suitable which tend to support the system under suppuration, without augmenting the fever and cough: and when animal food and ale neither augment the cough nor the fever, they may be safely and even advantageously given at that time; but when they do augment one or both of these symptoms, they must be wholly withdrawn, and milk and vegetables used as in the first stage.

Sydenham has extolled exercise on horseback as an almost certain specific for phthisis; but though

* See Blackmore's Treatise, p. 112, 113.

experience has proved the inefficiency of this, as of every other mean hitherto recommended, yet as a preventive and palliative, horse-exercise is deserving of particular attention. There is something peculiar in the effect of riding at an easy pace. It communicates a motion to almost all the viscera, and seems to invigorate the muscular fibre and whole frame; but its great superiority in disease over walking, which quickens the pulse much, seems to consist in keeping the heart at its usual rate of beating, while the rest of the system has all the advantages of exercise; and hence its special adaptation to many chronic diseases, where there is that species of functional disorder present, which has a tendency ultimately to pass into structural derangement. Moderate exercise on horseback, therefore, should generally be recommended in fine weather for those who may have any disposition to phthisis, and it will even be found useful in the incipient state of that disease; but the weakness of the last stage generally precludes its use, and then exercise in an open or covered carriage is much preferable, and it is remarkable how well many phthisical persons bear travelling in this way.

Celsus seems to have been fully sensible, that when cartilage is once destroyed, it is never regenerated, its place being supplied by another substance;* and Mr. Bedingfield, whose valuable

* In aure quoque interdum rumpitur cartilago. Quod si incidit, antequam pus oriatur, imponendum glutinans medicamentum est, sæpe

work I have alluded to before, ingeniously conjectures, that the almost uniform fatality of consumption is owing to the destruction of the cartilaginous matter in the lungs. Certainly the mass of corruption presented in the chest after death, might make us almost despair of ever discovering any measure that shall cure phthisis in the last stage. Yet as the suppuration from tubercles is generally slow, as it mostly takes place first in one part of the lungs, and then in another, and as respiration may be carried on by a small portion of sound lung, we must not stop inquiry by declaring that a confirmed consumption is always incurable. Now and then, indeed, we do see patients recover from the true phthisis, even after they have expectorated pus, and though such examples are exceedingly rare, yet the certainty of their occurrence should make us increase rather than diminish our efforts: for granting that such recoveries have been effected by nature alone, the very admission is an encouragement to the endeavours of art, since it shows that the disease is not universally fatal, that its cure is not physically impossible. But at the same time we have surely had experience enough to satisfy us, that the inhalation of the gases, which have been recommended, and other tried expedients, are of no real efficacy; and we should therefore direct our attention to the

enim suppurationem prohibet, et aurem confirmat. Illud et in hac et in naribus ignorari non oportet, non quidem cartilaginem ipsam glutinari, circa tamen carnem increscere, solidarique eum locum. Cels. lib. viii. cap. vi.

discovery of those agents of nature, which yet lie hid, or which, if apparent, have not yet been applied. If it be admitted that the ulcers in the lungs from tubercles are strictly scrofulous, we have the strongest analogies to conclude, that they are not wholly hopeless; since similar ulcers on the outside of the body can frequently be healed by applications of a stimulant kind. Now as stimulants can be applied to the lungs through inhalation, why should not some be tried, the common operation of which is known to be harmless? The inhalation of the vapour of burning pitch has lately been advised, though its power yet remains to be proved by more perfect and numerous trials; but if this should utterly fail, others ought to be successively tried, with that attention and prudence which the comfort, feelings, and safety of the sick require. Between the scrofulous ulcers on the surface of the body and those in the lungs, there is obviously a material difference. The surface is almost at rest, the lungs are in perpetual motion; and we know that motion generally retards the healing of ulcers. Digitalis lessens the motion of the lungs, yet it does not seem to favour the healing of ulcers; and this probably arises from that general deprivation of energy which follows its use. But if any agent could be found to lessen the motion of the lungs, without debilitating the system at large, it might perhaps be serviceable. We know most satisfactorily, that pressure favours the cure of ulcers, and hence the universal application of bandages to those of the extremities.

What would be the effect of applying bandages completely round the thorax, so that the patient might breathe chiefly by the diaphragm and abdominal muscles? And what also would be the effect of laying the head and shoulders very low, that the pus might not burrow so much in the lungs from its specific gravity? These are questions, which can only be solved by experience; and it appears to me, that they are not wholly undeserving of attention in the last stage of phthisis.

But if, after all our exertions, it should be found, that consumption is incurable in the last stage, we may reasonably turn with more sanguine expectations of success to the first stage; for as *deranged structure* is but the ultimate effect of *disordered action* in chronic diseases, it does not follow, that, because the first is incurable, the last is also incurable. On the contrary, many instances might be adduced to show, that we actually can arrest disordered actions in their commencement, which if uninterrupted generally lead to deranged structure, over which we have little or no power. From the fairest analogy we have reason to believe, that something yet may be done towards the arrestation of incipient consumption. We cannot cure gangrene of the intestines, but we can stop the inflammation which causes gangrene; we cannot cure caries of the bones, but we can frequently remove the morbid action which precedes and produces that caries. And why should we not hope that some remedy may yet be discovered, capable

of preventing the formation or arresting the progress of those tubercles, which finally derange the structure of the lungs? Till of late years, inquiry seems to have almost stagnated for centuries on the subject of pulmonary consumption, so far at least as practical utility has been concerned. Nay, if we turn to the pages of Celsus and of Ætius, and contrast their methods of treatment with those of the present times, we shall have no cause perhaps to boast of our superiority. It has been said, that fifty-five thousand persons die annually of pulmonary consumption in Great Britain; so that the disease may still merit the name of *Tabes Anglica*, which was commonly given to it on the continent a century ago. Such an extensive destruction of human life, with all its consecutive influence on surviving friends, imperiously calls upon the medical faculty for the most strenuous attempts either to prevent or to diminish the ravages of this wide-spreading malady. It is the grand characteristic of man, that he is progressive in those pursuits which supply or ameliorate his physical wants, and which at the same time open and elevate his mind; and though born the most helpless, he becomes the most powerful of all creatures, by removing or overcoming, through his intellectual powers, the adverse circumstances which surround him. We have advanced far in the medical art, since it was the mere practice of staunching blood, and of exhibiting simples, with many superstitious ceremonies and spells; and from the force of a well-directed perseverance, we cannot fail to advance

still further, and may perhaps even surmount the difficulties of phthisis itself. However great those difficulties may be, they ought not for a moment to paralyze our efforts, but, on the contrary, to be made the occasions for renewed and unremitted exertions, until we have done all that can be done by human industry. "From torpid despondency can come no advantage; it is the frost of the soul, which binds up all its powers, and congeals life in perpetual sterility. He that has no hopes of success will make no attempts; and where nothing is attempted, nothing can be done." * When we consider how many diseases which were once deemed obscure and incurable, have been rendered quite clear and manageable, we need not despair of finally illustrating and controlling pulmonary consumption, by minute observation and cautious experience. But in the great evils incident to man, an idea that nothing can effectually alleviate or remove them, is the most to be deprecated; for it wraps us in the contentedness of apathy, when we should have been straining every nerve, and trying every expedient, in the cause of humanity. Though so many ages have passed away, the world is only yet in the infancy of knowledge. Much of the information of ancient times was necessarily lost, for want of some mean to diffuse and preserve it entire; but as the Press now renders useful inventions and discoveries imperishable, the warmest

* Dr. Samuel Johnson. See The Adventurer, No. 81.

anticipations of philanthropy and philosophy may be indulged with respect to the future.

By way of putting the subject of consumption into a fair train of inquiry, I would propose, that an Institution should be founded in London, expressly for the purpose of investigating the nature and treatment of this disease; and that annual reports of its progress should be laid before professional men of every country, with whom a correspondence ought to be solicited in regard to its objects. To increase astronomical knowledge, Dr. Halley engaged philosophers of different countries to watch the transit of Venus over the sun's disk; and surely the consideration of consumption is of far more importance to the world, a disease which yearly occasions the death of so many thousands at the most interesting or useful ages. This Institution should be upon a large scale, and divided into two departments; the one for incipient, and the other for confirmed cases of consumption. It should be erected in an airy situation, and so planned, that each patient might have an excellent bed room and sitting room, opening into each other upon the same floor; and these rooms should have a separate apparatus for raising or reducing their temperature to any point required, and they ought likewise to be furnished with double windows in cold weather. If this Institution were once established, much might be suggested for its internal management, so as to make

it comprise almost every thing likely to contribute to the comfort or utility of the patients; and though it would be highly gratifying to me to have the medical superintendence of such an Institution, yet if any practitioner can accomplish its establshment, I will unreservedly communicate whatever appears in my view most fitted to give it beneficial force and effect.

In the foregoing hints on pulmonary consumption it will be perceived, that I have made but few references to recent authors. Yet this has not arisen from a want of respect to any of those authors who have written on the subject, but simply from a determination, rather to give the results of my own observations than the opinions of others, that something, however little, might be added to what has already been accumulated. My design in publishing these imperfect and desultory hints is, in the first place, to stimulate others to prosecute the inquiry of consumption with renewed ardour; and, in the second place, to suggest what have appeared to me as probable improvements in the pathology, prevention, and treatment. If these ends should be effectually answered, my labour shall not have been in vain; and if they should not, it will still be satisfactory to reflect upon the object of my endeavours.

Shortly after the publication of the former edition of this treatise, Dr. Barlow of Bath favoured me with some opinions on warm clothing; and as

observation and experience have satisfied this distinguished physician that the ordinary mode of employing flannel admits of improvement, it gives me great pleasure to insert the substance of his reflections here.

When flannel is worn next the skin, Dr. Barlow remarks, it is almost invariably the practice to keep it on by night as well as by day. This is not only unnecessary, but injurious. The chief advantage of using a flannel dress next the skin results, not from the actual warmth imparted or retained, an effect which might be obtained to an equal extent by an increase of outward clothing; but from the uniformity of temperature thus ensured to so large a portion of the surface of the body, and the tendency which this has to keep the highly important, but too much neglected functions of the skin, in an active and healthy condition. During the day the frequent, and oftentimes sudden vicissitudes of our climate are such as to render the effects of flannel in preserving an equality of temperature most valuable. But at night, and during sleep, we are subject to no such vicissitudes; consequently the same necessity for the use of flannel does not then exist. But while the use of flannel at night thus appears to be unnecessary, there are several considerations which show it to be injurious. These considerations regard both the condition of the body and of the flannel itself. Whatever the wants of the body for warmth during the night may be, they are in

general fully supplied by the bed-clothes in ordinary use. The body requires no extraordinary warmth during sleep: on the contrary, there is at such times even a tendency to an increase of the natural warmth. When to this natural tendency the heat caused by flannel worn next the skin is superadded, the effect is to keep the skin in a state of considerable excitement, and to induce perspiration more or less profuse. These effects are not calculated to prepare the body for enduring the vicissitudes of the ensuing day, but rather to render it more susceptible of injury. Again, continues Dr. Barlow, the property which renders woollen cloth so eminently suited to the purposes in view, is that of its being a slow conductor of heat. This property is directly proportionate to its dryness, and is greatly impaired by its imbibing humidity of any kind. A flannel dress, however, that is worn next the skin throughout the night, becomes so charged with perspiration that its power of conducting heat is thereby greatly increased, and its preservative effects proportionably diminished. Here then is a twofold injury resulting from the prevailing practice of continuing the flannel dress during sleep; namely, a diminution of the preservative powers of the flannel, and an increased susceptibility of the skin. By laying aside the flannel dress on going to bed, and substituting one of coarse calico, the body is kept in that temperature during the night which fits it for encountering the vicissitudes of the following day, while the flannel is preserved from the deteriorating effects

of the nightly perspiration, and is resumed in the morning in a state which contributes both to comfort and protection. A difficulty, Dr. Barlow subjoins, is experienced with most people who have accustomed themselves to the nightly use of flannel, in inducing them to alter the habit. Fear of taking cold creates our great obstacle; and disinclination to the feeling of cold experienced at the moment of changing the flannel for the calico nightdress, especially in winter seasons, is another. Confidence in the medical adviser, however, is sufficient to overcome the first, and a very little experience to remove the latter; for after a very few trials the proposed change is found to prove a decided gain even on the score of sensation, and the gratification derived from resuming a dry and comfortable flannel in the morning, together with the sensible increase of its utility during the day, are found to compensate amply the slight unpleasantness attending the momentary exposure of the preceding night.

Dr. Barlow justly observes, that in many instances the best interests of mankind, whether we consider their physical or moral welfare, are influenced by circumstances which the world are pleased to deem trivial; but the above suggestions on clothing will not be regarded as such by those who can appreciate the importance of the subject to which they relate, or the talents of the individual from whom they proceeded. These suggestions indeed of Dr. Barlow relate to the prevention

of disease in general, but to that of phthisis in particular, the pathology of which I have proved to be closely connected with the skin; and to show how the state of that organ may influence the cure of this disease, it is worth mentioning that I recently received, from a respectable correspondent, an account of two cases resembling phthisis which were arrested, the one by attack of pemphigus, and the other by that of small-pox.

Some observations having been thrown out in various places relative to the balsam of copaiva and to the sulphuretted hydrogen gas, a few pages shall now be dedicated to the consideration of their medical properties. These two agents, but especially the last, have perhaps more efficacy than the profession has yet imagined; and in bringing the sulphuretted hydrogen gas more particularly into notice, I shall have an opportunity of offering some remarks on the nature and cure of chronic diseases in general.

BALSAM OF COPAIVA.

BALSAM OF COPAIVA.

ALL the outlets of the body are covered with a membrane, which in a state of health secretes mucus for their lubrication; but when this membrane is inflamed or irritated, the natural secretion is always increased, commonly vitiated, and often purulent. Mr. John Hunter has asserted, that the discovery of mucous and other membranes secreting pus from mere inflammation was first made by his brother Dr. William Hunter, and by Mr. Sharp; while Dr. F. Swediaur affirms that Morgagni and De Haen made this discovery several years before our justly celebrated countrymen. But this is a matter of little consequence, since nothing is more common in science than for men to make similar discoveries or inventions, who had no intercourse with each other; and it is enough for my present purpose to point out the known and acknowledged fact, that inflamed mucous membranes may and do secrete pus without actual ulceration. Having spoken of the efficacy of copaiva in chronic inflammations of the trachea and its branches, it will hardly be thought a digression if I state its striking utility in gonorrhœa, which is an affection of a

mucous membrane, and if I also suggest its application in other diseases.

There are two species of gonorrhœas—the specific and the non-specific. The specific proceeds from a peculiar virus, and propagates itself to second persons indefinitely; the non-specific originates from strictures, irritable urethras, the contact of leucorrhœal or menstrual discharges, or from instestinal and other disorders, and it cannot be communicated to second persons. It is not my design to describe their characters, but the above distinction merits our attention both in a medical and moral sense; for the judgment of the practitioner, and the reputation of the patient, might equally suffer from confounding the specific with the non-specific. The following observations principally relate to the specific or virulent gonorrhœa, though the remedy which it is my intention to advise, will be found more or less efficacious in every variety of this complaint occurring in males. The late Mr. John Hunter thought, that what is called the virulent gonorrhœa, was scarcely ever retarded by artificial means; and an intelligent writer, Mr. Samuel Cooper, has more recently observed, that as we have no appropriate remedy for this disease, it is fortunate time alone will effect the cure. An experienced practitioner, who had seen numerous cases of the specific or virulent gonorrhœa, once told me, that he had never known its duration shortened by medicine; and

that from first to last, he had usually found it to continue about six weeks. Indeed many medical men suppose this affection to preserve a determined character and course, in defiance of every measure; and there are perhaps few who attempt, in the first stage, any thing more than to alleviate the inflammatory symptoms by evacuations, rest, and an antiphlogistic regimen. An old author, Dr. Samuel Turner, says that copaiva is a "noble medicament in *finishing* the cure of claps and of gleets;" and from his to the present time it has been so generally restricted to the advanced stages, that, so far as I know, there is only one writer who advises it, and that by a short paragraph, in the first or inflammatory stage. But in recommending it as generally a speedy and an effectual curative in the primary as well as in the last stage of gonorrhœa, I must advert to the source whence my information was first derived on this subject. Some time ago, Dr. Pearson Dawson mentioned to me, that he had prescribed copaiva, with signal success, for more than twelve years, in the very commencement of the virulent gonorrhœa. As the opinion of this enlightened physician had been drawn from close observation and extensive experience, it at once determined me to try the medicine; and I can now confirm its efficacy in gonorrhœa, not only from cases which have fallen under my own observation, but also from the practice of an intelligent surgeon, to whom Dr. Pearson Dawson made a similar communication. My investigations might lead me to infer, that copaiva, pro-

perly and purely administered, would not fail once in twenty times completely to arrest the progress of this disease; an inference, however, which must be limited to the male, as it is not so efficacious in the female gonorrhœa, though even in the latter it is superior to every other drug, in conjunction with cleanliness and injections. The copaiva will sometimes cure an incipient gonorrhœa in two, three, or four days, provided the symptoms be not violent; and in the worst cases it will generally succeed within the first two weeks. But that practitioners may not be disappointed in their future trials of this medicine, they must be mindful to procure it genuine, to administer it in proper form and doses, and to continue it regularly for a sufficient length of time. As its failure will most frequently arise from inattention to the one or to the other of these circumstances, some special allusions to them may not be superfluous.

Copaiva is improperly denominated a balsam, since it contains no benzoic acid, but consists of resin and essential oil. It is insoluble in water, but soluble in ten parts of alcohol; and the best is said to come from the Brazils. Its smell is fragrant, but its taste somewhat bitter and disagreeable: it is usually of the consistence of oil, and in colour and transparency not unlike fine rum; but when very long kept, it grows almost as thick as honey, though it does not become dry or solid, like most other resinous juices. Nevertheless, its efficacy is much impaired by long keeping, and therefore it

should always be obtained as fresh as possible. The spurious or adulterated copaiva is not transparent, it frequently has some turbid watery liquor in it, and a much less agreeable smell than the genuine. It has been acknowledged by druggists to a friend, that it is not unusual to adulterate copaiva with common oil, with Venice turpentine, or with Canadian balsam; and this fact affords an additional reason for care in its selection, since, unless it be pure, it will only disappoint the practitioner and disgust the patient, as well in gonorrhœa as in other complaints. Even when pure, copaiva is apt to disagree with the stomach, sometimes inducing nausea, retching, vomiting, or disagreeable eructations. It imparts to the urine a bitter taste, and a peculiar smell, but not of the violet kind, like the turpentines. In moderate doses it is a mild laxative, in large ones it often occasions copious and fluid discharges of fecal matter, but generally without uneasiness. When exhibited in excessive doses, it may excite a sort of vibratory feeling in the brain, or cause a febrile anxiety, with a mental disturbance bordering on delirium. When it disorders the stomach much, its exhibition is sometimes followed by an eruption resembling the nettle-rash; and in a few peculiar habits I have seen this eruption arise where little or no affection of the stomach apparently existed.

In all the varieties of gonorrhœa, copaiva increases the quantity of urine, but almost always

with a soothing effect. As its powers may be much impaired by improper combinations, it should usually be blended in soft distilled water, with mucilage of gum arabic, or with the yolk of a newly-laid egg. The following formula in general answers very well in gonorrhœa. Take about a hundred, or a hundred and twenty drops of copaiva, rather less than two ounces of mucilage, two ounces of soft distilled water, and two drachms of refined sugar. The copaiva and the mucilage must first be most intimately rubbed together in a marble mortar: the sugar must afterwards be dissolved separately in the water; and then these two mixtures must be well incorporated, by small portions at a time, until an entirely smooth and uniform emulsion be made. One half of this emulsion is to be taken immediately before breakfast, and the other half immediately before supper. This mode of administering copaiva not only assists its efficacy on the principle of minute divisibility, but it also greatly obviates its unpleasant effects upon the stomach by becoming assimilated with the food. It is, however, most frequently adviseable to eat a small aromatic spice-nut before and after each dose, and one or two during the day, more effectually to guard against disturbance of the stomach; and in some instances it will be requisite to compound the mixture with an aromatic water, and to add a very few drops of alcohol, both of which render it less liable to excite nausea or eructations. Sometimes, however, the copaiva agrees best with the stomach when given

in drops upon cold water; and wherever it sickens much with the mucilage, this method should therefore be tried. On some occasions, the doses of copaiva will have to be increased to the amount of three, four, or five drachms in the twenty-four hours: but the smallest dose should be first tried, and where that fails, it may be gradually augmented until it answers its specific purpose; and wherever it is necessary to give this drug in larger quantities, the dose should rather be given at three or four intervals, than twice in the day. The first two doses of the emulsion above-mentioned will frequently lessen the ardor urinæ, the discharge, and the chordee; while a regular perseverance in the medicine will rarely fail rapidly to remove every trace of the disease. But it must be remembered, whether the gonorrhœa be virulent or the contrary, slight or severe; whether the cure be accomplished in three days or in a fortnight; that the copaiva must be regularly administered for about a week or ten days afterwards, otherwise a relapse for the most part may be confidently anticipated.

When ardor urinæ exists to any extent in gonorrhœa, it is generally better to allow the copaiva to act with tolerable freedom on the bowels; but when it proves troublesome or inconvenient as a purgative, a few drops of laudanum may be advantageously combined with each dose. The addition of laudanum, indeed, is sometimes very beneficial, in mitigating both the local and the

general irritation. Cases may occur, where the inflammatory symptoms run very high in the onset, which require general and local blood-letting with other evacuations, before the administration of the copaiva; but I am fully persuaded that such cases will be found rare, and that in general it will only be necessary to assist it by an occasional dose of opium. At the same time, an abstemious diet, rest, and strict cleanliness, will always tend to favour the efficacy of this medicine; whereas a directly opposite effect will result from stimulants, exercise, and other irregularities of regimen. The simple treatment here laid down being adequate for the cure of the male gonorrhœa, it removes every plea for the use of astringent injections; a practice which, in men, cannot be too strongly condemned, because it is so frequently adopted, and because it is so apt to produce painful stranguries, confirmed gleets, or strictures of the urethra.

From the remarkable efficacy of copaiva in an acute inflammation of *one* membrane, we might ask, has it a similar power over a similar affection of *every* mucous membrane? This question naturally arises out of that disposition to generalize, which is inherent in every mind, and which has led to the discovery of important truths, as well in medicine as in other sciences: but to infer at once from a particular fact, that copaiva must necessarily be efficacious in inflammation of every mucous membrane, would be one of those rash

and blind conjectures, which have too frequently disgraced and retarded physic. Yet at the same time, the certainty of this very fact is calculated to make us turn our inquiries to the ascertainment of the general agency of copaiva in inflammations of mucous membranes; and as other facts have been previously adduced to show that it has an actual influence over certain inflammations of the mucous membrane of the trachea and its branches, the reasonableness of such inquiries becomes forcibly apparent. Having chiefly trusted in all acute inflammations of vital parts to the lancet, purgatives, mercurials, blisters, and opium, I cannot pretend to specify what may be the effect of copaiva in some of those inflammations: but as its use is not incompatible with the active and indispensable means here mentioned, there are obviously some affections in which it may deserve a trial, since, if it were even useless, it could not possibly do any harm.

In that violent disease the croup, the mucous membrane of the trachea is invariably more or less inflamed; and notwithstanding the prompt employment of blood-letting, emetics, purgatives, mercurials, and blisters, it sometimes proves mortal; and therefore in certain modifications of this disease, might not the copaiva be an useful auxiliary to those remedies on which most reliance is generally placed? In spasmodic asthma and hooping-cough, the mucous membrane of the trachea or of the bronchia is generally implicated in

the morbid phenomena; and as I have seen great relief obtained in some cases from the copaiva, it is a desideratum to ascertain its operation more perfectly in these complaints. In dysentery, the mucous membrane of the bowels is affected, and on this account might not copaiva be beneficial, but more especially in those protracted dysenteries which usually baffle the ordinary means? Yet in the acute and sub-acute dysenteries, the hepatic and cutaneous functions are always disturbed, and the early use of the lancet, with the prompt and powerful exhibition of calomel, must always constitute our main expedients; and whatever other means we employ, they are only to be accounted secondary at best, but among these secondary means perhaps copaiva may hereafter be placed. As the chronic dysentery, however, is generally attended with ulcerations of the lining of some part of the intestines, might not the copaiva prove a suitable laxative, and also a salutary stimulus to the ulcers themselves? In three obscure cases, where matter was passed from the intestines, it appeared to me of considerable service, though in a fourth it gave no alleviation whatever. As some of the older writers have recommended it in dysenteries and similar affections of the belly, we have been perhaps too hasty in discarding its use in modern times. What has been called the schirro-contracted rectum, if my observation be correct, is always connected, in its commencement, with a torpid state of the bowels; and it has appeared to me to occur more fre-

quently in women than in men, the habits of the former predisposing them to constipation. In its onset it is frequently necessary to attend to the state of the liver, since maintaining a natural secretion of bile, and a regular action on the bowels, will sometimes afford the chance of success, provided this plan be early commenced in combination with small general, or free topical bloodletting, and an antiphlogistic regimen. Even when the torpidity of the bowels is not dependent on a deficiency or a depravation of bile, still the same course will generally be among the best that can be pursued. Now as in this disease of the rectum, patients declare themselves to be easiest when their motions can be made liquid, and as copaiva produces that effect, is it not likely to be of some utility? Besides, as it has a specific operation on the mucous membrane of the bowels, shown by the nature of the motions, might it in any degree contribute to induce a favourable change of action on the morbid part itself? Small tumors sometimes form on the villous coat of the intestines, near the extremity of the rectum, which occasion a great deal of suffering, and which if neglected often occasion an irremediable disease of the gut; but they ought always to be speedily removed, not by the ligature but by the knife, and then patients will frequently regain their health, if long rest, laxatives, and a spare diet, be enjoined after the operation. In two or three cases I have known some practitioners pronounce the existence of a stricture in the rectum from not having been

able to force the sphincter freely with the finger; and yet on the exhibition of a few doses of castor-oil, the finger has passed readily, and not the slightest vestige of obstruction remained. The fact is, that retention of scybala in the colon will often produce this sort of temporary spasmodic state of the sphincter; and as it may easily be a cause of deception, practitioners should always make a point of having the bowels properly evacuated before they venture upon a decided opinion in certain diseases of the rectum. But these remarks are leading me too far from the original subject of discussion.

In regard to chronic diseases, copaiva has had different virtues attributed to it by different individuals, but nearly all concur in its being generally beneficial in gleets, and in leucorrhœas; indeed in the former of these it seldom fails, under the directions already noticed in gonorrhœa, as to formula, perseverance, and temperance. By some it has been said to give tone to the nervous system, to cleanse and heal exulcerations of the urinary passages, and even to be serviceable as an external vulnerary; whilst others have affirmed it to be efficacious in diseases of the lungs, in hemorrhoids, in hectic fever, and in many complaints beside. So general an influence having been ascribed to it, has probably been the cause of the neglect into which it has fallen amongst modern practitioners: but as its power over gonorrhœa is so decided, and as it is considerable in some affec-

tions of the windpipe, we have at least grounds for supposing that it may be successfully employed in other diseases; and what some of those diseases probably are I have endeavoured to point out, that the consideration of their cure may still be prosecuted. The more we inquire into the modes in which medicines act, the more we shall be satisfied, that many of them operate through the medium of the circulation; and as they may thus be conveyed to every quarter of the body, and as copaiva has the power of changing morbid states of some mucous membranes, it may possibly exert a similar effect on others. Still further to show that its operation is neither limited to the mucous membrane of the urethra, nor to that of the windpipe, I have known it very beneficial in some cases of leucorrhœa, a disease immediately seated in the mucous membrane of the vagina. It is, however, in simple leucorrhœa only, that we must look for it to be at all efficient, and even in that it should not supersede the use of injections; but when leucorrhœa is complicated with affections of the uterus and its appendages, it cannot be expected to succeed. As chronic defluxions of the mucous membrane of the trachea or of the bronchia are likewise sometimes combined with organic disease, so it will sometimes completely fail in them; though, upon the whole, it will generally give more relief than most other medicines in those catarrhal defluxions, which are frequently so troublesome, if not so dangerous to old people. What I have actually observed of the effects of this me-

dicine in some diseases must be carefully separated from what I have suggested with respect to its probable utility in other diseases; and since it is most frequently mild in its operation, the few facts and hints here adduced may not only lead others to investigate the properties of copaiva with more accuracy, but likewise to explore those of the whole class of balsamic and resinous medicines, but especially of turpentine, which may be found of considerable efficacy. To borrow an expression of Lord Bacon, it cannot be doubted, that there are yet many things of excellent use to be discovered in the bosom of nature. A wide field of investigation is presented to us, not in the vegetable only, but also in the mineral world; and probably some agents will hereafter be successfully applied, the efficacy of which is not so much as conjectured at present. The distinguished individual just named, thought that the number of specifics might be greatly increased by diligent investigation; and when we consider the known powers of some medicines, which act on particular parts of the body, we need not despair of finally realizing his enlarged anticipations. Nor can it fail to exalt our opinion, and to stimulate our inquiries respecting remedies, when we adduce the efficacy of those actually prepared and presented by nature; and such are the sulphureous waters of this country, which will be acknowledged, upon a more extensive trial, to deserve very high commendations.

CHRONIC DISEASES,

AND

SULPHUREOUS WATERS.

CHRONIC DISEASES,

AND

SULPHUREOUS WATERS.

IF any one were to assert, in unqualified terms, that medicine is a conjectural and vague art, it were easy to refute him, by proving its great certainty in many acute diseases; and if any one were to ask what part of physic is most defective, we might point out chronic diseases, since in them our efforts have hitherto been the most ineffectual. It is for want of having discriminated the general difference of result in the treatment of acute and chronic diseases, that some have so much underrated, and others so much overrated, the powers of the medical art. Speak of acute diseases, and we may justly maintain the present utility of our profession; speak of chronic diseases, and we must with regret confess its present imperfection. If any practitioner should be generally unsuccessful in the treatment of acute diseases, the fault must be his own, provided he be consulted in the earliest stages: for the united agencies of blood-letting, purgatives, mercurials, opium, and blisters, will commonly control the very elements of these diseases, when opportunely and judiciously directed; and if any one will still

be so stubborn as to reject the use of some of the most powerful instruments which we possess, the failures are rather to be attributed to himself, than to the inefficiency of medical expedients. As we cannot make such a confident declaration as to chronic diseases, though we can often palliate and sometimes cure them, we are constrained to acknowledge, either that their nature is more irremediable, or that the means employed are less efficacious. Both these inferences are in some measure true. Upon the whole, chronic diseases are really less manageable than acute ones, because in the former the morbid states are slowly produced, and cannot therefore be speedily changed; whereas in the latter the morbid states are quickly produced, and not having acquired strength from continuance, may usually be quickly changed. The means which we administer in chronic diseases are numerous, but most of them ambiguous, and questionable at the best; whereas in acute diseases, our means are few, and their operation plain and indisputable. The long catalogue of prescriptions for chronic diseases at once indicates, that all is not right in our pathology, as it implies that each prescription is liable to fail, and that the whole may be successively required. Wherever we have any thing like principles to guide us, our prescriptions are extremely limited; wherever we have no fixed principles to guide us, our prescriptions accumulate with empirical rapidity. But what, it may be reasonably inquired, is the principal cause of all this complexity of for-

mulæ in chronic diseases? Undoubtedly it arises from that vagueness of opinion which exists respecting the nature of these diseases in their onset, and in the greater part of their progress; and so long as we attempt to cover our ignorance by such terms as nervous, bilious, dyspeptic, spasmodic, and the like, so long shall our practice be mere experiment in most chronic affections. We may make a sort of druggist's shop of the stomach of every patient labouring under chronic disease, by alternately cramming it with most of the articles of the pharmacopœias; but we shall not, probably, advance in the treatment, until we deduce pathological principles, from cautiously marking the rise and progress of the symptoms, and exploring their seats and effects. For several years past, it has been part of my employment to collect facts on chronic diseases, and as the inquiry will not be completed for many years to come, in the mean time I offer a few brief results of my observation and experience in regard to them.

Between chronic and acute diseases, a much nearer affinity perhaps exists, than has usually been conjectured. The first stages of both consist in disordered action, the last generally in deranged structure. If high degrees of venous or of arterial fulness mark acute diseases, low degrees of the same conditions mark chronic diseases: in reality these degrees may mutually pass into each other, so that an acute disease shall become chronic, or a chronic disease shall assume an acute character; and whoever has accurately

marked the progress of the symptoms will be especially satisfied, that few chronic diseases exist without the supervention of an attack more or less acute. Though chronic congestion of the veins, and chronic excitement of the arteries, will not account for all the varied phenomena of chronic diseases, yet as the one or the other of these states is almost invariably present in such affections, and forms a material part of their pathology, a few pages shall be dedicated to the consideration of each.

Chronic congestion of the veins generally occurs in the brain, in the liver, in the spleen, or in the vicinity of the heart. If this species of congestion be in the brain, uneasiness of some sort almost invariably exists in the head, with more or less of disturbance in some of the external senses; and the periods of watching and of sleep become less statedly regular than they were in health. Languor of body and mind is mostly present, so that the patient can neither employ the one nor exercise the other so agreeably as before; and in some individuals a forgetfulness of recent transactions is observable, whilst in others a change in the general manner indicates the influence of the disease on the mental operations. The face as well as the whole surface is for the most part pale, and the pulse languid or oppressed; both of which symptoms are dependent upon that diminution of arterial tone, which accompanies chronic diseases of venous congestion, so long as they strictly deserve that denomination.

The heat of the skin is mostly somewhat below the natural standard, or it varies in the course of the day, frequently being lower in the mornings, and higher in the evenings; but the patients are usually very susceptible of the impressions of a cool atmosphere, or at least they cannot bear the vicissitudes of the weather so well as formerly. Sometimes weakness of the upper or lower extremities is amongst the primary and most prominent symptoms, and this may either exist with or without pain; but when pain does accompany the weakness, it is not often permanent in any place, but mostly passes from one joint to another. Cases of this character may be confounded with chronic rheumatism, and they are not uncommon in old people. It may be laid down as an axiom in physic, that whenever a local defect or loss of muscular power cannot be accounted for by any external disorder, the cause is to be found in the brain or in the spinal cord.

It very frequently happens, that chronic congestion in the veins of the brain is conjoined with a similar affection of the liver, the symptoms of which are frequently very obscure for a long time. When a sense of fulness or uneasiness occurs in the right side on motion, on pressure, or on turning in bed to the left side, the hepatic affection may be distinctly inferred; but these symptoms are often entirely absent, and therefore in all cases we should inspect the stools, which will mostly be found somewhat of the colour of pipe-clay, or of

the dark brown clay of which common bricks are made. Though no tinge of yellow may exist upon the skin, yet it sometimes has a dirty appearance, and itches a great deal, which are indications of the presence of bile in the secretory vessels; upon examination, too, the urine will occasionally be found of a slightly bilious shade, as if a little saffron had been infused, and faint or small stains are then frequently left upon the linen of the patient, from the last drops in micturition. The stomach often sympathizes so much, that the principal mischief might seem seated there, when it is really in the brain or liver; and in the investigation of most chronic diseases, we should be mindful not to mistake a sympathetic for an original disorder of the stomach. It is not uncommon for practitioners to prescribe a long time ineffectually, under the supposition, that the stomach is primarily and solely affected: and yet it shall at last turn out, that the disorder of that organ was all along secondary of some hepatic or cerebral disease. Many of those affections which pass under the name of hypochondriacal, hysterical, nervous, and so forth, actually depend upon venous congestions of the brain, or of the liver; and these are also frequently the precursors of the apoplectic, paralytic, maniacal, and melancholic attacks, which are now so common among pale or emaciated people. Venous congestions of the liver or brain, too, are often separately or combinedly connected with the origin or advancement of chorea and chlorosis.

The chronic venous congestions of the spleen are generally marked by a fixed uneasiness under the ribs of the left side; and some cough and signs of indigestion usually attend it as in hepatic cases, with many of those feelings termed nervous. When the large veins in the vicinity of the heart are preternaturally loaded, palpitations with weight and anxiety are referred to the region of that organ; and patients are often subject to sudden attacks of giddiness, of faintness, or of sickness at the stomach, while the pulse always shows great irregularity in the circulation. Indeed, chronic congestion of any part of the venous system is always concerned with a disordered action of the heart; and sometimes, that disordered action originates in the heart itself, and at other times it is the effect of some disturbance in another organ. We shall not pause for the present to inquire, how the heart has derived its motion, but that motion cannot be directly or indirectly disordered to any extent without a shock to the system; for when it is directly disordered, the circulation labours at its very source, and when it is indirectly disordered, the circulation is obstructed or disturbed in some of the main or minor streams. When the right side of the heart is preternaturally loaded with blood, the face and whole surface are generally pale, and the pulse is feeble, and mostly irregular; while the respiration is anxious and variable, and an oppressive weight is felt in the vicinity of the pericardium. An intermittent pulse most frequently depends upon some obstruction in the

course of the venous circulation by which the right side of the heart is not duly supplied; and this obstruction is very often seated in the liver, and is denoted by depression of spirits, paleness of the skin, unnatural colour of the feces, and more or less head-ache. But violent head-aches, and sometimes even venous apoplexies, are the result of an over-accumulation of blood about the right auricle and ventricle; for in that case the venous blood is retarded in its return from the brain, and thus, though the cause may be in the heart, the effect falls on the cerebrum or cerebellum. Wherever I have made morbid examinations in those cases which bore the character of congestive disease, I have found the right side of the heart preternaturally distended with very dark blood; and in reflecting upon their previous history, I cannot but be led to conclude, that the function of the right ventricle was closely concerned in their pathology. If from any cause too much blood be returned to the right ventricle, say from the blood retiring from the superficial into the deeper seated veins, the whole venous circulation must by consequence become disordered: but those organs where the flow of venous blood is naturally the slowest, will be, most likely, the main seats of the local disorder; and hence perhaps it is, that we so often find the brain and liver so congested with blood which is darker than usual. But in some instances no doubt a preternatural accumulation of blood takes place about the heart from a mere loss or diminution of muscular power in

the right ventricle; and this is perhaps the case in overwhelming shocks from fear, or accidents, in excessive and sudden abstractions of the animal heat, and also in the slow and insidious operation of those debilitating causes which break up the general strength. There is perhaps hardly a chronic or an acute disease in which the functions of the heart do not less or more participate; and in fact the disturbed action of this organ, influencing topical predispositions, is the source from which numerous complaints may be said to proceed.

Whenever venous congestion exists as the cause of chronic disease, in the end it mostly occasions an increased action of the heart and arteries; but this increased action is frequently imperfect and irregular for a considerable period, so that there is fever at one time, and collapse at another, and between these two states the health is suspended. In fact, whenever the increased action of the heart and arteries is permanently established, then the venous congestion may be said to terminate in a new disease; since an increased action of the heart and arteries is one of the natural cures of venous congestion, and an augmentation of the secretions is the other. If we trace back the history of many of those cases of slow fever which we witnessed, whether in combination with organic disease or not, we shall frequently find, that the symptoms at the onset and part of the progress were those of venous congestion; and again, in those cases where the symptoms of congestion have not been followed by fever, we shall in-

variably find, that some of the secretions had been augmented, and that thereby more or less temporary relief had at different periods been obtained.

One of the common modes in which chronic congestions of the veins are spontaneously lessened, is by a copious secretion of urine or perspiration; and I believe, that the skin, kidneys, and lungs, are the principal organs of defence against vascular fulness of all kinds. In a state of civilized society, we often eat and drink a great deal more than is requisite for the supply of our natural wants; and how is the surplus managed that it may not dangerously distend or burst the channels of the circulating fluid? Where the blood-vessels are preternaturally filled, a secretion of urine takes place, or if that should fail, the perspiration becomes abundant as a substitute; but if both the kidneys and the skin should not perform their guardianship well, the lungs are thrown into an augmented motion, and their exhalation is also porportionately augmented. Doubtless the intestines sometimes assist in these offices of preservation by an accumulation of part of the ingesta, and by an increased secretion from their villous coat; but the skin, kidneys, and lungs are the principal organs by which we are secured against vascular fulness, though physiologists, so far as I know, have overlooked this important part of their functions. In cold, variable climates few persons could exist long, if the lungs and kidneys did not secrete very copiously, when

the blood recoils towards the central parts, from an abstraction of caloric on the surface; and on the other hand, in hot countries, where so much fluid is drunk, and where the heat expands the blood, the danger would be equally great, if the skin and lungs did not exhale freely, since the secretion of the kidneys is then diminished. Even in this country we secrete more urine in winter, and more perspiration in summer: and both these changes tend to preserve us against plethora of the vital organs. It is notorious, that in what are termed nervous people, the urine is often plentifully secreted during their indispositions; and this circumstance has saved thousands from palsy or apoplexy, however trifling it may have hitherto been considered. A real suppression of urine is always dangerous, and sometimes precedes great oppression of the brain; and marks of vascular fulness invariably attend a diminished secretion of the kidneys, unless the lungs, the skin, or the villous coat of the intestines, should supply the deficient secretion by an increase of their own. Since the first edition of this work was published, I saw a case in which no urine entered the bladder for upwards of twenty hours, on account of a calculus which was sticking in each ureter. At first, the patient complained of considerable uneasiness in the head, in which there appeared to be a preternatural degree of vascular fulness; but a copious perspiration came on which gave very great relief, and which continued until the calculi passed into the bladder. They were both afterwards

expelled; but there can be little doubt, that the copious perspiration saved the patient from some cerebral attack. In most febrile disorders, the secretion of the kidneys and skin is diminished, while that of the lungs is increased: this diminished secretion in the former organs affords a strong argument in favour of depletion, and whenever it is observed in chronic diseases of venous congestion, additional care is required; for there is then generally a danger of dropsical effusions from the fulness of the veins. If it were not deviating too far from the present subject of discussion, I could show, that dropsy is a common consequence of venous congestion; and if to this we add local enlargements or local obstructions, and increased action of the heart and arteries, we furnish three great pathological principles, which embrace numerous dropsical diseases. Chronic congestions of the veins of the liver, if not relieved by an increased secretion of that or some other organ, has frequently a tendency to terminate in ascites: and on examining the brains of some patients, who had long been subject to symptoms of fulness in the cerebral veins, I have discovered a considerable quantity of fluid in the ventricles, which had probably been slowly effused.

Sedentary are more liable than active people to the venous modification of chronic disease, and old persons more than young; but it may occur in any habit, or at any age, though both influence its character and cure. In sedentary people the

circulation is apt to become sluggish for want of proper exercise; and hence in them we often discern the clearest marks of venous congestion, without any proofs of arterial excitement. Again, in advanced life, the circulation undergoes a gradual, though remarkable change: the blood to a certain extent leaves the arteries and accumulates in the veins, of which we have ocular demonstration; and as there is an internal as well as external plethora of the veins, they are more subject to all the affections of venous congestion than the young, in whom a brisk arterial circulation exists. Our cold and variable climate is peculiarly favourable to the production of congestive diseases, for often when the heat is abstracted largely from the surface, an internal accumulation of blood follows: and if this happen in an old or a delicate habit, it oppresses some vital organ, and the arterial action remains subdued; but if it should occur where there is much innate energy, an excitement is produced, which may be either of an acute or of a chronic character.

It is not, however, our cold and variable climate alone which produces congestive diseases, for they may often be traced to the want of ventilation and cleanliness; and hence their frequent occurrence among the poor, who reside in crowded alleys and courts, where there is a deficiency both of fresh air and water. In visiting some of these places in the metropolis, I have been particularly struck with the squalid appearance of many of the inha-

bitants; and could not but observe with regret, that the children were mostly strumous or rickety, apparently more from a defect of air and cleanliness, than of proper food. If some individuals of practical minds and of personal consequence would introduce some better mode of ventilating and warming houses, their labours would be productive of great advantage, but especially to the poor, whose abodes are the sources of contagious as well as chronic distempers in populous towns: for the confined situations, the small fires, narrow windows, and low doors, are all obstructions to free ventilation; and, on account of the inadequate supply or use of water, the stagnant atmosphere is loaded with putrid effluvia. Indeed the present method of warming and ventilating our houses is, at best, extremely defective; the temperature being by no means uniform, and the ventilation chiefly from the windows elevated above the floors. The principle of ventilation should be to have an independent and a constant supply of fresh air from without, which, in our worst seasons, should be made of an equable and agreeable temperature by some apparatus for warming the air in the interior. By a system of this sort, the strength would be maintained by the unceasing freshness of our domestic atmosphere; and not only would there be much less risk to the delicate within doors during bad weather, but they would be able to go comfortably warm into the cold air abroad, which is the best way of resisting its influence. As carburetted hydrogen gas can now be so easily

extracted from coal, our houses might be ventilated, warmed, and lighted, by a modification of the same apparatus; and as small coals, which are exceedingly cheap, would answer for the fires, an immense reduction of domestic expenditure would be the result, though the chief advantage would consist in improving the health of the poor. One of the great secrets for the preservation of health in large towns is to take plenty of exercise in the open air: this remark is peculiarly applicable to London, where most of the sedentary are very sickly looking, and where most of those who are much in the air appear as healthy as in the country; but this is especially the case with children, and therefore exercise abroad is a point to which parents should constantly attend in the metropolis.

But, to proceed with the original topic, at every period of our existence, the veins will bear certain degrees of distension without disordering the functions of any of the respective viscera; but if this distension exceed a certain measure it becomes a disease, and of course the phenomena of that disease are modified by its seat and degree, and by the state of the constitution in which it occurs. Indeed in the investigation of chronic congestions of the venous system, it is of great consequence not only to discover the organ chiefly oppressed, but also to ascertain the age, habits, and other peculiarities of the patient; for variation in the seat of the disease may require some varia-

tion in the application of remedies, though the general principles of cure are chiefly to be modified by the constitutional circumstances above noticed, and by the stage of the disease. If, for example, chronic congestion of the veins exist in a person, whose general powers are only oppressed, the debility is not real, but apparent, and the consideration of it must not be allowed to stand in the way of moderate depletion; but on the contrary, if chronic congestion of the veins exist in combination with the real debility attendant upon exhausted powers, then the congestion might be increased by depletion, and a fatal collapse would probably succeed. Again, if the chronic congestion of the veins has been of long continuance, its treatment requires considerably more nicety, than when it has only been of comparatively short duration: for when it has continued a long time, the debility may be real, and there may also be some co-existent derangement in the structure of the part affected. In the consideration of the cure of acute diseases, I have made various attempts to show how important it is to mark the line of separation between real and apparent debility; and it will be found equally important to attend to this in the treatment of chronic diseases, since what may be proper in a state of oppression, is exceedingly improper in a state of unquestionable weakness. In most systematic works, however, we have mere incidental symptoms enumerated as the chronic diseases themselves, without regard to the seat or nature of those

diseases; and it is not uncommon to find diffusible stimulants recommended, where evacuants alone are demanded, and vice versâ, as might be instanced in many of those diseases which are comprehended under the class neuroses. When chronic venous congestion only masks the strength of the patient, by impeding the functions of some vital or important organ, it is best removed by evacuations; but when it is combined with an actual want of tone in the heart and whole muscular fibre, diffusible stimulants are necessary, as shall afterwards be shown, in an outline of the methods of treatment.

It has already been remarked, that a deficiency of heat and of arterial action attends the first stages of chronic congestion in the veins wherever seated; and it may be here noticed, by way of contrast, that an excess of heat and of arterial action attends diseases of chronic excitement. But at the same time it must not be forgotten, that diseases of chronic excitement may arise out of diseases of chronic congestion in the veins, just as the hot stage may arise out of the cold stage of an acute fever: for in both cases the venous congestion may become an irritant to the arteries, by the stimulus of the distension applied to the right side of the heart, from the return and accumulation of the venous blood there, and in both cases the arterial excitement may be the natural cure of the venous congestion. It is indeed upon this principle that we may trace

the origin of several of those chronic excitements which are so common about the vital organs. For if we inquire into the primary symptoms we shall not unfrequently find, that they were those of venous congestion, produced by the operation of cold upon the skin, by the depressing passions, by sedentary occupations, by fatigue, or by some shock which retarded the arterial circulation, and made a recoil of blood towards the interior; while the arterial excitement was but an effect of that venous congestion, an action established to restore more effectually the natural balance between the venous and arterial systems. The congestion of the veins, however, often continues a long time before it produces excitement in chronic diseases, and may be so great as wholly to prevent it, as happens in acute diseases; but in the latter the congestion is suddenly formed, whereas in the former it is commonly the accumulated result of days, of weeks, of months, or even of years. In chronic diseases, there is, on certain occasions, a sort of interchange between venous congestion and arterial excitement for some time, until the one or the other decidedly predominate, or until the system be restored to health. The venous congestion first produces arterial excitement, and the excitement in its turn ends in a loss of arterial tone, and thus alterations take place, until the equilibrium of the circulation be decidedly lost or restored.

But chronic excitement of the heart and ar-

teries more frequently arises directly from an excess of stimulation, than indirectly from venous congestion. Many of the habits of civilized society at once tend to produce chronic diseases of the arterial system; but among the most common causes of these diseases, may be enumerated the use of ardent spirits among the lower orders, and of wine and rich diets among the higher. Every time that ardent spirits are taken, we stimulate the heart and arteries preternaturally, and if this increased action be frequently repeated by the same or any similar excitant, chronic inflammation rarely fails to supervene at last; and this inflammation for the most part falls on the brain, or its meninges, the liver, the pancreas, the villous coat of the stomach, the peritoneum, or the kidneys. Of the spirituous liquors which are daily drunk in such lamentable abundance, rum seems to be the least pernicious; for those who confine themselves to it generally are less emaciated, and hold out longer than those who drink brandy or gin. Rum does not constipate the bowels so much as either of the others, and it contains some saccharine matter, which probably sheathes the stomach in some degree, and acts as a laxative; but the baneful influence of all spirits is diminished by combining them with acids, and hence we find the drinkers of punch, upon the whole, suffer the least. As for brandy and gin, when taken raw, or diluted simply with water, they both tend to constipate the bowels, the first acting most power-

fully on the liver, and the last on the kidneys: yet their operation, like every other diffusible stimulus, is not limited to any particular part, but extends throughout the whole arterial system from the force communicated to the heart, whence it is transmitted to the arteries; so that if any one organ happens to be weaker than the rest, the principal disturbances will be occasioned in that organ, from the heart continuing to send thither greater quantities of blood than natural.

It is a striking circumstance in our national character, that hardly any concerns of consequence can be transacted by any body of men, without what are called good eating and drinking; and this is more especially the case in commercial towns, where men gorge themselves with rich food and strong drinks, when called together by business. There are far more chronic diseases in commercial, than in country towns, in proportion to the population of each; and the principal cause of this is, the greater dissipation which prevails in the former, and which gives employment to crowds of medical men, half the number of whom would be unnecessary, if temperate habits could be established. Let any practitioner who resides in a large commercial town mark the diseases which fall most frequently under his observation, and he will find, that they are those which arise from dissipation of one sort or other; and if he compare his experience with that of any me-

dical friend in a country place, he will find, that such diseases are proportionably far less common in the practice of the latter. If mild ale, properly brewed from the malt and hops, could be introduced to the utter banishment of those poisons termed distilled spirits, what an immense change for the better would be effected in the health and happiness of the nation; and as the use of these liquors has become so general and so destructive, the subject is surely deserving of the serious consideration of the legislature, both in a medical and moral point of view. It is remarkable, that if we taste twenty different ales, the flavour of hardly any two is at all alike, which shows that there are various methods of brewing even this our old national beverage; and as it is now notorious, that there are druggists who travel for orders amongst the brewers, we have strong grounds for inferring, that the modern method of making ale is far less wholesome than the ancient. This subject, too, demands a strict inquiry, for the national health ought not to be bartered away to the selfishness of individuals. In a former page, I have expressed my opinion as to the unwholesome properties of porter; for, according to my observation, it is not an unfrequent cause of palsies and apoplexies, as well as of chronic inflammations of the vital organs in general. Whether the bad effects of this liquor depend upon the concentrated spirit which it contains, or upon some narcotic which it has been supposed to contain, does not appear to be cer-

tainly known; but as from repeated experiments I have found its operation almost precisely similar to that of opium, I cannot but entertain strong suspicions, that some narcotic is actually infused, and could therefore wish, that some able chemist would undertake an extensive analysis of this drink, for the sake of the public. By our enemies it has almost become a reproach, that we are a money-making people; and as the love of money is one of the most degrading passions, we ought to guard against its influence in the great concerns of health and morality. So far as I have been able to ascertain, it is one of the most remarkable peculiarities in the habits of the lower and middle ranks of society in London, that they take porter much more as a common drink than in any other place of the kingdom. This habit is surely most pernicious, since it must necessarily create a gradual and increasing desire for a stimulant, the effects of which are powerful upon the nervous and vascular systems. When Dr. Franklin, the American, was a printer in London, he was the strongest man among many in a large office, though he drank nothing but water, while most of the others indulged in diffusible stimulants, from an idea that they supported their strength: and I am firmly persuaded, that the inhabitants of large towns would be much more healthy than they generally are, if they lived upon a nutritious diet, and only drank water, or some very mild malt liquor; for the wear and tear of mind and body,

from the greater demand for the exertions of both in large towns, is quite sufficient, without superadding the irritation and exhaustion which must result from the daily use of stimulating drinks.

Many persons in the higher circles are troubled with what are popularly denominated stomach complaints; and it is well known how untractable they are under the tonic plans of treatment, which are usually pursued. But the truth is, that these diseases generally are combined with chronic inflammation, or with increased actions of a chronic nature; and therefore it is irrational to expect, that they can be removed by means directly tending to aggravate the very cause from which they proceed. The manner in which persons of the higher ranks take exercise, the stimulant drinks and diets which they use, the unseasonable hours which they keep, all tend to disorder the digestive and hepatic functions, and, through them, to effect the brain and its membranes; and therefore the seats of those disorders, which are so commonly supposed to be of the nervous class, are to be found in the head, in the stomach, in the liver, or in some other important organ. Carriages are extremely convenient, and even necessary, for those who have certain duties to perform which require dispatch, and they are also excellent protections against the influence of our bad climate at certain seasons of the year; but to make them,

as is generally done, a sort of daily vehicle for exercise, is preposterously absurd, as if nature had almost made our moving powers in vain. As walking is the natural exercise, so it is unquestionably the best for those desirous to maintain strength and health at the same time; and carriages should be appropriated to those invalids who stand in need of fresh air without fatigue, and to those individuals whose time is valuable, or whose frames are too feeble always to stand the shocks of our coldest seasons. It would be a great improvement in our domestic habits, if the second courses at dinner were abolished, among the higher ranks of people, as they generally induce them to eat more in quantity and in quality than is requisite or salutary. In fact, in the first course of dishes there is far too much variety; and it is unnatural to expect, that the digestive powers can accommodate themselves to such a mixed farrago of materials. If we look throughout nature, we shall find, that all living creatures, excepting man, exist on a very simple fare; and the result is, that while his life terminates at all ages, theirs is usually lengthened out to the latest date of their respective genus, when left in a state of nature. In examining the bodies of those animals killed in the chase, which have now and then fallen in my way, I have hardly ever found any chronic disorganization about their vital organs; but in examining some of those who had been domesticated, and consequently had partaken of

our complicated and unnatural diets, organic disease was found in almost all of them. Mr. Forster, too, who has written an ingenious book on Atmospheric Phænomena, observed similar facts: and it cannot be doubted, that deviations from simple habits produce the same effects in man as in the lower animals. It is an old proverb, and perhaps a true one, that a skilful cook is more to be feared in the time of health, than an ignorant physician in the time of sickness. The sum of disease and suffering would be greatly lessened, if we would abandon our delicacies, and be content to live upon a very plain diet.

But it is not the circumstance of complicated meals alone that requires amendment, since the pernicious custom of drinking wine should be almost wholly given up, unless long habit may have rendered it to a certain extent a necessary evil. The truth is, that in habitual tipplers we can seldom make sudden and great changes in regard to diffusible stimulants, without the risk of inducing some dangerous diseases, but particularly those of a dropsical nature. For when the artificial stimulus is at once withdrawn, the heart falls into a sort of collapse, the pulse becomes weak, the blood accumulates in the veins, and nature relieves the superabundant fulness, by an effusion of serum from the extreme vessels. But where tippling has not been long habitual, it may safely be abandoned at once in young persons, by the

substitution of ale for wine or spirits; but in people advanced in life, we must proceed more cautiously, and gradually lessen their ordinary stimulus, otherwise they will be almost certain to become dropsical, from the cause above mentioned. Many men would be shocked if one were to tell them that they are drunkards, and yet to a certain extent they really are so; for though they themselves may account five or six glasses of wine in the day perfect sobriety, yet it is far too much, and cannot fail to do mischief in the end. In fact, it is habit alone, that renders wine at all necessary, and water or mild ale should be the universal beverage; and the latter is certainly requisite in some weak constitutions, but particularly in those of the strumous temperament, who should never live too low. We have already deviated so far from the simplicity of our natural instincts, that we could not return to them with safety; for habit is a sort of second nature, to which we are compelled in some measure to conform, from the changes which it has wrought in our constitutions. Some few men might be found who daily drink wine or spirits in considerable quantities, without apparent prejudice to the health; but these are individuals whose Herculean strength would almost resist any shock. It is self-evident, that wine and spirits destroy the health and shorten the life of most of those addicted to their intemperate use. When the appetite is impaired by wine and spirits, they soon undermine the fa-

bric of some vital part in the animal machine; and those drunkards in general hold out the longest, whose appetites remain unimpaired, provided they keep clear of apoplexy or similar affections. Excess of eating produces nearly the same effects as excess of drinking, in preternaturally stimulating the heart and arteries, and in leading to diseases of chronic inflammation: Celsus has correctly observed, that the first is for the most part more immediately dangerous than the last. The reason of this is, that the liquids sooner pass off by the secretions, and thus the vessels are relieved of fulness. Solids are long retained in the stomach, and when largely taken they disorder the circulation, not only by their stimulus, but by their pressure against the diaphragm and descending aorta, while the superabundant fluids, finally formed from them, are more slowly eliminated by secretion. Many of the habits of civilized society not only stimulate the heart preternaturally, but also tend to produce and maintain a state of plethora, by the operation of one or both of which a train of chronic excitive diseases is occasioned.

The drinking of wine at dinner in the higher circles is a fashion that might be well dispensed with: indeed it is a sort of initiation into tippling, not only among men, but also females; for if the party be large, it is difficult to avoid taking two or three glasses at the least. Upon the suscepti-

ble nerves of females, two or three glasses of wine have considerable influence. To this trifling quantity taken daily I have sometimes been able to trace the rise of those chronic inflammations of the viscera, which are so often confounded under the terms bilious, dyspeptic, nervous, and the like; and as most men among the upper ranks take considerably more wine than this every day, it is not surprising, that they should be the frequent subjects of similar complaints, particularly if we take into the account their stimulating diet, and late hours. It is said that the private use of opium is fast increasing amongst the upper classes, as a temporary stimulant against those feelings of exhaustion which their artificial modes of life naturally produce: but if any thing be calculated to render a human being miserably dependant, it is the habitual use of opium; for when its excitive operation ceases, an anxiety and irritation succeed which are almost insufferable, until the wonted stimulus be again supplied by this powerful drug. But whatever may be the case among the higher, it cannot be disputed, that opium is far more extensively used among the lower and middle orders than formerly; and indeed few people now hesitate to prescribe it on many occasions, without ever consulting their medical attendants, as if it were a simple and innoxious medicine. In fact it is even too often and indiscriminately given by professional men themselves, many of whom, from the long habit of prescription, forget that sleep

cannot be procured by it, without the brain being gorged with blood. It may be safely asserted, that in every person under the full soporific influence of opium, as under that of intoxication, the vessels of the brain are in a state approaching towards apoplexy. Some most distinct cases of palsy and of apoplexy have fallen under my observation, which arose from too large, or too often repeated doses of opium; and I would particularly caution the faculty in general, against the too common practice of giving anodyne draughts night after night, because their effects may at last be extremely prejudicial. The increase of palsies, of apoplexies, and of many similar affections of the cerebrum, is in my opinion closely connected with the increased consumption of opium, and perhaps with the abuse of mercury. It is not the brain alone which suffers from the injudicious employment of opium, for it excites the whole vascular system under the ordinary states of the constitution. Some opportunities have occurred to me of examining the bodies of patients who had been habitual takers of opium; and in all of them there was extensive organic disease, and the vestiges of chronic inflammation were most apparent in the brain and liver.* But if opium be thus

* It would be extremely interesting and useful to be informed, more accurately than we hitherto have been, of the diseases to which the opium takers in Turkey are so liable. They seem to be chiefly affections of the brain, as they are attended with derangements in the moving powers. It is to be hoped, that some intelligent traveller will hereafter attend particularly to the subject, and give us a correct history of the effects of this narcotic in Turkey.

hazardous when exhibited under the ordinary conditions of the body, there are extraordinary ones in which it is highly beneficial; and among these may be enumerated violent pain, real exhaustions of the heart, and irritations of the nervous system. In fact there are many cases of inflammation, but particularly of the stomach and bowels, in which opium is far too little exhibited by the faculty, under an apprehension that it constipates the intestines, or merely masks the symptoms. Yet though opium unquestionably constipates the bowels in health, this is not the case in inflammation of the stomach and bowels, as I have repeatedly witnessed; for under such a state, by allaying pain and irritation, it often assists the operation of purgatives, and in conjunction with them and with blood-letting, is one of the most powerful measures which we can employ, however systematics may protest against it in such examples. It is, therefore, only against the administration of this medicine in the more common conditions of the habit, that we ought to be so much upon our guard; and from want of due attention to this particular, it is now becoming a poison in society, profusely and indiscriminately given.

Next to the abuse of opium in this country, I would rank that of calomel, a medicine far too much given in chronic, and far too little in acute diseases; for while, when administered with due discrimination, I have never known it prejudicial in acute diseases, many instances have been presented to

me, where it seemed to have broken up the health in chronic diseases. In this and in a preceding work, I have spoken confidently of the united or separate efficacy of calomel and opium, in acute diseases of arterial excitement or venous congestion, and could speak with almost equal confidence of their utility in some chronic ones; but the operation of all medicines is powerfully modified by the condition of the system at the time of their administration, and always to give calomel and opium in the same way is to convert an antidote into a bane. The irregular and empirical manner in which calomel is often prescribed in chronic diseases, without due regard to the nature of the symptoms, or to the powers of the patient, not unfrequently paves the way to chronic affections of the brain or of other vital parts; and on a strict examination we shall sometimes find, that paralytic or dropsical persons previously to the attack, had taken mercury long or largely when it had not been required, and without most or any of those precautions which were necessary at the time. It is a remarkable fact, according to my observations, that most men who have broken up their strength by unnecessary or irregular courses of mercury, have a scrofulous offspring when they marry; and I believe an extensive inquiry into the general state of health, would bear me out in the assertion, that the alarming progress of scrofula in this country, is intimately connected with the venereal disease, and with the abuse of mer-

cury. But it is time to resume the continuation of the original topic.

There is one point so closely concerned with the production of chronic diseases of excitement, that I cannot refrain from distinctly adverting to it, and the more especially as it relates to a part of medical practice which stands in need of immediate reformation. When patients are convalescent from acute diseases of venous congestion, or of arterial excitement, it is an established rule among many practitioners, to allow them a generous diet; and some go even further than this, as they prescribe wine and what are called tonics, with the hope of more rapidly recruiting the strength. It is not intended in these pages to insinuate any thing against others, for this was the practice which I once pursued myself; and it was from observing its bad effects in many instances, that I was led, generally, to abandon it, and to substitute one more consonant and salutary to the system. When any acute disease has subsided, no matter where seated, it commonly leaves a tenderness or weakness in the organ which had sustained the main attack; and it is highly probable, that the capillaries of that organ had undergone a change during the disease, and that some of them may have been closed or obstructed in such a manner as to modify the future circulation of the part. But be this as it may, it cannot be questioned, that a peculiar delicacy remains in a part which

had been acutely inflamed or congested; so that the original disease may be renewed by the application of certain powers. This delicacy sometimes remains a long time, inasmuch as those who have once had attacks of cynanche, erysipelas, rheumatism, and the like, are very subject to them again. Now when we give a nourishing diet, with wine and tonics during convalescence, are we not in danger of once more exciting or disturbing the circulation of the organ which had been so recently the seat of severe disease? If we examine into the human body, we shall find, that the heart is the seat of government, the centre of motion; and if the circulation of any one part be already in some degree less healthy than the rest, increasing the action of the heart must propel more blood in that direction, and the blood thus propelled may re-produce disease. This is not theoretical speculation, for I have known many cases of chronic inflammation arise after acute ones from following the stimulant plan during the appearances of convalescence; and since I have adopted a more cautious, and in fact a different system, such occurrences have been comparatively rare in my practice. After all great disease the constitution falls into a state of collapse, from which it is gradually recruited by the innate powers, provided proper support be given: but if on the one hand we give too spare a diet, great bodily and mental irritation succeeds; and if on the other we give too full a diet, the heart and arterial circle are stimulated to excess, and an acute,

sub-acute, or chronic inflammation may supervene. It is never safe to attempt to rouse the constitution at once from collapse into strength. In reality it cannot be done, for when the powers are over-exhausted, their vigour can only be gradually restored. On all occasions, therefore, of convalescence from fevers, it is better to allow the system to renovate by light cooling support, than to stimulate it by strong food, wine, and tonics; and though there may be cases which require a deviation from this plan, on account of the extreme exhaustion of the patient, yet they will be found few in comparison to those which require an opposite plan. From long and unbiassed observation, I am fully convinced, that most of the medicines called tonics, are either useless or pernicious; and if these were erased from the pharmacopœias, it would be a real benefit to the profession and mankind, for they only serve to mislead the former, and to tantalize or injure the latter. Tonic medicines generally oppress the digestive functions, or operate as direct stimulants, and in either case they are improper in convalescence; for by the first they may destroy the natural appetite, and by the last they may lead to chronic inflammations. So far from such drugs being appropriate to a stage of convalescence from acute disease, mild laxatives are most frequently requisite to preserve a right balance between the ingesta and the egesta: and the practitioner who substitutes the former will find that his patients will pass better through convalescence, and be afterwards far less

subject to consecutive attacks of inflammation. During convalescence from acute diseases, the two circumstances most to be avoided are exposure to cold, and too full a diet; for by far the greatest part of relapses may clearly be referred either to the surface being chilled, or to an over-excitement by the formation of too much blood from excess of nutriment. In relapses from both these causes the use of the lancet will generally be necessary, particularly when they proceed from the plethora of too generous food; but if the patient be put into a tepid bath on the first occurrence of the chill, the accession of secondary fever will often be prevented, especially if a brisk purgative be afterwards given. But if these secondary fevers be neglected in the onset, they will most frequently have an unfavourable issue, from the supervention of some acute inflammation of the viscera; or even if this at last should be successfully resisted, it will often leave a strong tendency to chronic inflammation of the part, which may be easily excited, from the stimulating drinks and diets to which most persons are now daily accustomed.

The general symptoms in diseases of chronic inflammation are increased heat, and increased action of the heart and arteries; and the particular symptoms are topical uneasiness, and disorder in the functions of the organs affected. The increased heat and action, however, are frequently so slight, that they might escape the notice of a

cursory observer for some time after their commencement; and the same may be said of the topical uneasiness and disordered functions, as they, too, are often most obscurely denoted at first. In all suspicious cases, therefore, of a chronic nature, the practitioner must endeavour to ascertain, by minute investigation, the states of the vital organs within; and if there should not be evidences of chronic congestion in the veins, let him inquire whether there be chronic excitement of the arteries. The brain or its meninges, the stomach, the peritoneum, the kidneys, the uterus, and the liver, are more frequently the seats of chronic inflammation than other parts; and on this account some concise allusions may be made to them, by way of elucidating the general character of this class of affections.

When chronic inflammation occurs in the brain or its meninges, there is frequently some degree of soreness or tenderness on pressure in the integuments of the head; but this symptom is sometimes absent long after the commencement of the inflammation, though it is now and then present from the first, and almost always in its advanced stages. The eyes often feel as if small particles of sand were in them; or they are liable to be inflamed from slight causes; and this indeed is occasionally so much the case, that patients themselves imagine their disease to be entirely in the eyes, when it is purely secondary of the cerebral inflammation. The complaint called gutta

serena, or amaurosis, is frequently the product of chronic inflammation in the brain, and not an idiopathic disease of the eyes, as many have supposed. In chronic inflammation of the brain, however, the eyes are sometimes little or not at all affected; but then the hearing, the smell, or some other of the external senses, for the most part suffers in a degree, and the periods of sleep and of watching are less regular than in health. Pain, fulness, weight, tightness, throbbing, giddiness, or some feeling of uneasiness, invariably exists within the head: and the voluntary and mental powers are more or less implicated during the progress of the disease, the indications of which are various. The affection of the voluntary powers may be marked by weakness or pain in the extremities, by defect or loss of power in some of the muscles, by a sense of numbness, or by an alteration in the gait, or in the mode of speaking; while the affection of the mental powers may be marked by a variation in the expression of the countenance, by an unusual lassitude or restlessness of mind, by a defect of memory, by a change of the temper, or by unexpected deviations from accustomed habits or pursuits. The face is pale in some cases, and flushed in others, the pulse mostly fuller than in health, but though it be sometimes smaller, it is always more frequent and generally harder; and the temporal arteries usually beat more forcibly than natural, and the heat of the hairy scalp is somewhat above the ordinary standard. The stomach sympathizes more or less,

though when the disease is principally confined to the head, the dyspeptic symptoms want that permanency of character which attends a fixed disease of the stomach; but at the same time it is not uncommon for inflammation of the brain to be combined with increased actions both in the stomach and the liver, and the cerebral may precede the abdominal symptoms, or the converse may be the case. There seems to me at present too great a tendency amongst medical writers, to ascribe the origin of affections of the brain to disorders of the digestive organs; for though it cannot be denied, that the brain is often sympathetically disturbed from morbid states of the digestive organs, yet it as often happens, that the disorder of the digestive organs is secondary of that of the brain. But I suspect that the mistake has arisen from want of due attention to the early symptoms of cerebral disease, which are often extremely obscure for a considerable period; and yet all the time they may be operating on the digestive functions, until the disturbances in the latter become conspicuous links in the morbid chain. Chronic inflammation of the brain may be the precursor of apoplexy, of palsy, of epilepsy, of acute phrenitis, and of mania, all of which are extremely unmanageable when they thus secondarily supervene: and it is truly surprising to what a variety of symptoms an apparently similar affection of the brain will lead in different individuals; so that in one it shall assume the character of nervous head-aches, in another that of

chorea, in a third that of the falling sickness, and so on, from some idiosyncrasy of constitution which we cannot explain. This variation in the symptoms of cerebral disease, from apparently a similar cause, is often strikingly displayed in those families where madness is known to be hereditary. In many instances, chronic inflammation of the brain, or of its membranes, proceeds months or even years before it produces any dangerous or mortal result; and during the greater part of its progress it may be mistaken for some disease of debility, or for some of those anomalous affections which have usually been supposed to originate from indigestion, or from an irritable state of the nervous system.

When the stomach is chronically inflamed, pain, soreness, or uneasiness of some sort will be experienced on forcible pressure over the epigastric region; except when the inflammation is solely confined to the villous coat, and then it will mostly be marked rather by a sense of heat, a desire for cold drinks, and a gnawing feeling, than by positive pain, soreness, or tenderness. Flatulence, foul tongue, small pulse, and thirst, usually attend every form of chronic inflammation of the stomach; and if there should not be nausea or retching, the appetite is either prostrate or extremely capricious. In marking certain cases of chronic inflammation of the stomach, it has struck me, that the increased action may be protracted, lessened, or perhaps even cured, by a copious secre-

tion from the lining of that organ; for I have known some patients complain of a great increase of uneasiness, and soon afterwards they vomited a quantity of glary mucus, after which they obtained temporary or permanent relief. When we consider how the stomach is abused, it is surprising that it should not be more frequently inflamed; and it is not improbable, that attacks of inflammation are often prevented by an increased secretion, which follows the use of unnatural stimulants. The irritation of the tænia occasionally produces symptoms somewhat similar to those attendant upon chronic inflammation of the stomach; and in most obscure affections of the belly, the existence or non-existence of this worm should be ascertained, if possible, by a daily inspection of the stools. Chronic inflammation of the peritoneum is attended with some of the symptoms of a like disease of the stomach; but in the former the tenderness is more diffused, the whole abdomen is fuller and rounder, and the respiration is more disturbed on motion. In both a slow and irregular fever accompanies the inflammation, with loss of flesh and strength, pale face, and quickened pulse; and in both when they take place in females, it is common to complain, that the stays cannot be braced tight without uneasiness, and the abdomen often becomes so much swollen towards night, as to require the laces to be slackened or unbound. Chronic inflammation of the liver may be easily mistaken for a stomach-disorder, as it is always accompanied with signs of

indigestion, often with distension, pain, or soreness in the epigastrium, and sometimes with attacks of spasm referred to that region. The spirits are in general peculiarly depressed in chronic inflammations of the liver, and the complexion becomes pale, sallow, or yellowish, but so far as I have observed, more frequently of the two first mentioned shades than of the last. The urine has sometimes a tinge of bile, and sometimes not, though it is generally deeper in colour, and less in quantity than is usual. The feces become invariably unnatural, and in some cases are light, in others dark; and the bowels are commonly bound, but occasionally in a contrary state. An uneasy feeling of weight is not uncommon in the centre of the sternum, and more or less cough generally attends; and the patient is shorter of breath than before, and is now and then liable to an oppression about the chest, as if he were confined in a close atmosphere. Some uneasiness is for the most part felt under the false ribs of the right side on forcible pressure, which is apt to occasion some tendency to sickness in certain instances; and a degree of pain or of dragging weight is often experienced on turning over upon the left side, or the patient can only lie comfortably upon his right side or his back. Yet in a few cases of chronic inflammation of the liver, I have known no uneasiness whatever induced by lying on the left side; though in them the patients could generally go to sleep best on the back, with the head and shoulders a little

raised. In chronic affections of the liver, palpitation of the heart is often excited by lying upon the left side. Pain is as often absent as present at the top of the right shoulder; and in some cases it is felt in the left shoulder, or between the scapulæ. More or less head-ache or giddiness generally exists, and there is also more irritability of mind and of body than in health. The tongue is usually furred, the appetite impaired, and an irregular fever arises during the advancement of the disease, mostly attended with morning remissions and evening exacerbations; but most frequently there are symptoms of indisposition, and a loss of colour, flesh, and strength, for some time before the constitution is excited into evident fever. The ultimate effect of any chronic inflammation in the abdomen is to derange the natural structure; but when the peritoneum or liver is affected, dropsy of the belly often likewise supervenes.

In certain instances, the brain or its membranes are chronically inflamed at the same time with some of the abdominal viscera, so that it is not uncommon to hear patients complain of the head and belly together, and in such examples the stomach or liver will generally be in fault. By accurately tracing the symptoms as they rise and advance, most internal inflammations of a chronic nature may be detected; and though many of the symptoms may fluctuate from the consent

between one part and another, yet those arising from the organ really affected will hold a pretty permanent course. In estimating the character and seat of chronic diseases in general of the vital parts, it is of great consequence to ascertain what symptoms are stationary, and what temporary: for the temporary symptoms only mark a tendency to disordered action, from some sympathetic or incidental cause; whereas the stationary symptoms indicate positive and progressive disease, and on this account ought to claim the special care of the medical attendant. Some of those people denominated nervous are in a peculiar state for months or even years, from the successive disorders of function in one organ or other at various times; so that they may be constantly complaining, and yet their complaints may have neither a permanent seat nor character. Such patients are generally worst in the mornings, improve as the day advances, and commonly feel best towards night; but this is rarely the case in fixed diseases of the internal organs, for indeed in them patients most frequently become worse towards night, from some slight accession of fever. Yet even the vacillating state of the health above noticed, always indicates an extreme susceptibility of the nervous system; and as the influence of this system is very great upon the heart and arteries, it may at last lead to serious congestions or excitements of the viscera. When called to what are deemed nervous patients, practitioners should

always be strictly on their guard, and examine, one by one, into the condition of the great vital regions, in order to be assured whether all be right there.

Chronic inflammation of the kidneys is not uncommon, and it is generally denoted by an obscure uneasiness on one or both sides of the spine in the loins; but this uneasiness is mostly connected from the first with a furred tongue, and with an indistinct species of remittent fever, which after a time is generally marked in the evening; and at this stage and period, there is often some degree of throbbing in the back, probably owing to the accumulation of blood in the larger renal arteries, from the resistance to its passage in the capillaries affected with the obstruction which we denominate inflammation. In some instances, I have known patients walk about for several weeks and even months, while they laboured under chronic inflammation of the kidney; but it is one of those affections which sometimes exists a long time before suppuration takes place, and it may therefore be removed occasionally under a conjunction of very unfavourable signs.

Chronic inflammation of the uterus is much more frequently connected with the lingering complaints of females, than most modern writers seem to be aware; and if some practitioner who has time and talent, would thoroughly investigate this

subject, he would make a most important addition to pathology and therapeutics. However absurd the speculations of the ancients might be, they were certainly right in supposing, that the influence of the uterus was extremely great. Painful or irregular menstruation in young women is often connected with a degree of chronic inflammation of the uterus; and, after days of suffering, I have known pieces of coagulable lymph expelled, apparently from its inner surface, as they resembled a sort of decidua. About the time that the catamenia cease, great attention should be paid to females; for chronic inflammation of the uterus, which is almost always attended with pain in the back, is very apt to supervene, from the plethora which follows the suppression of a periodical discharge; and to the same cause, stimulating the heart to an augmented action, may be traced many of those tumors in the mammæ so common at this period of life. The best preventives of such affections, are a diet more abstemious than before, and a moderate system of depletion, by those purgatives which keep the hepatic and intestinal secretions natural. Wherever a chronic discharge takes place from the vagina, whether bloody or leucorrheal, it generally may be regarded as an indication of chronic inflammation of the uterus, when there are not enough constitutional symptoms present to account for it satisfactorily; but in all of such suspected cases, an examination per vaginam should be made, for a morbid sensi-

bility of the uterus to the touch is the most common attendant, and the most certain test of its being the seat of chronic inflammation, of which excess in venery is among the most frequent causes. I have known some, and heard of other cases, in which a morbidly enlarged uterus was mistaken for a stricture of the rectum, from the pressure of the former against the latter part impeding the descent of the feces, and giving them a flattened appearance. As such a mistake may entail a great deal of unnecessary suffering on the patient, and even lead to mortal consequences, no practitioner should pronounce a disease of a female to be a stricture of the rectum, until he has ascertained the state of the uterus; for should the examination be made solely by the rectum, he may be easily deceived if an enlarged uterus form a tumor which is apparently connected with the gut, and which often can only be discovered as a distinct affection, by elevating it from the vagina. In several instances, I have been consulted by females who complained much of the head, and whose digestive organs were manifestly disordered from the foulness of the tongue; but on inquiry it was found, that uterine irritation, acting on the heart and thence on other organs, was the first exciting cause, which being removed, all the other secondary symptoms abated. In all of the apparently bilious, dyspeptic, and nervous attacks of females, the state of the uterus should be ascertained, which through sympathy

has considerable power over other parts of the body.

Sympathy, no doubt, is an expression by which we sometimes cover our ignorance, and prevent further inquiry. As commonly employed, it is a general term, under which different states are included, some of which are not strictly referrible to the influence of the nervous system; and something similar may be said in regard to the epithet nervous, as applied to diseases, for it is most vague and indefinite, and comprehends many discrepant affections. The progress of medicine has been retarded in every age, by the use of general terms, which rather refer to symptoms than explain diseases; and the nomenclature of chronic complaints is peculiarly open to amendment, since most of the names now employed only serve to conceal the real pathology of those complaints. The doctrine of what is called sympathy is intimately concerned with the phenomena of many chronic diseases; for if one part be materially affected, it seldom fails to disorder some other part. The change of action which one organ is capable of effecting in another may be produced four ways: first, through a direct consent, between the nerves of different parts, which disturbs the capillary arteries of those parts; secondly, through an anastomosis of the blood-vessels alone; thirdly, through mechanical obstructions to the circulation, which impels the blood in unusual directions;

and fourthly, through an irritation extending to the brain and heart, and finally exciting the whole arterial system, which in its turn disorders the functions of the weakest organs. But as it is my intention to enter into the detail of this subject at a future period I shall not pursue it here, but throw out some general allusions bearing on the treatment of chronic diseases.

In diseases of chronic congestion there is preternatural fulness of the internal veins; in diseases of chronic inflammation there is preternatural fulness of some part of the capillary arteries; and this fulness is so great as to disturb the functions of the organ in which it exists, and the whole economy by consequence is thrown into disorder. But the topical fulness, whether seated in the veins or in the arteries, may originate in general causes which give a shock to the heart, the main spring of the circulation; and in such cases, the seat of the topical disease is determined by the predisposed states, or by the weakness of the respective organs attacked. If there be any predisposition to disease in an organ, that disease may be readily excited by any thing which greatly disturbs the action of the heart; for though the predisposition remained latent when the whole circulation flowed with its natural calmness, yet when that circulation has once been agitated by some shock at its source, every organ must participate in the change, but especially the weakest.

On the other hand, if any local disturbance should take place in the circulation of a part, the currents of blood sent by the natural action of the heart, if they should not remove, must necessarily increase that disturbance, upon the known principle of the motion of fluids; unless indeed those currents find other adjacent channels of conveyance, which are furnished by anastomoses, seemingly to provide for the prevention and reparation of injuries. In diseases of congestion the action of the heart is either oppressed or weakened. It may be oppressed by a preternatural load of venous blood about its right side and adjacent vessels, by which the return of the blood in the veins may be retarded and accumulated in various organs:—it may be weakened by all those causes which diminish the tone and tenacity of the muscular fibre, so that from mere want of energy the blood might be too long and largely accumulated about the right side of the heart; and therefore it is, that some congestive diseases require depletion, and others a short stimulant plan, since in the first class the strength is merely suppressed, in the last it is enervated or exhausted. In diseases of excitement, on the contrary, the action of the heart is much increased, so that the forcing power of each ventricle sends the blood more frequently, if not more violently, through all the arterial channels of the body; and it is easy to conceive how it may be obstructed or accumulated, by some topical weakness, in the capillaries of those organs

which had previously some unperceived tendency to what we call inflammation, which consists in a local accumulation of arterial blood, generally united to an increased action of the heart. But the increased action of the heart may be either primary or secondary. It is primary when the heart is at once stimulated beyond its natural movement, so as thereby to influence some distant part, by transmitting a superabundance of blood there:—it is secondary when some local and remote disorder proves an irritant to the heart, rousing it into greater power than in health, by which it aggravates that disorder, from the force and frequency of the currents it transmits. Both in chronic and acute diseases, the functions of the right and left ventricle of the heart have by no means been sufficiently regarded; but they are so exceedingly important that the heart perhaps may be considered as the origin or the support of all diseases connected with congestion or excitement; for whether it be directly oppressed or exhausted, whether it be directly stimulated or indirectly irritated, it must necessarily have an influence over all the organs, especially over those which had previously been faulty.

What has been called increased action in the arteries of a particular part, is generally a state of those vessels very different from increased action: for, so far as I have yet observed in inflammation, the action of one artery is not increased more than

that of another, independent of the heart; and what seems to be so, is obstruction or distension, augmented by the natural or preternatural action of the heart. In conformity to the view above given, we lessen the action of the heart by evacuations, whenever we wish to remove a local disease affecting an important organ. When the secretion of any organ is increased, we say that the action of its arteries is increased, yet this does not legitimately follow; for the action of an artery is one thing and its secretion another, and the increase of secretion may arise from an adjacent obstruction, or an augmented capacity of the vessels owing to an increase of the animal heat, by which more blood than usual is made to pass through the part. What we are accustomed to call increased determinations of blood to particular parts, generally depend upon some adjacent obstruction, or upon some change in the temperature; and of this many instances might be adduced, but none perhaps is more striking than an acute rheumatism seated in one hand, where there is obviously an obstruction of blood in the capillaries of the joints affected, with an increased heat of the greater part of the fore-arm. On account of the obstruction in those capillaries, the blood cannot of course be freely returned by the veins, so that it accumulates in the radial artery, the volume of which is necessarily expanded by the blood and by the increased heat; but though the volume of the pulse in that arm be always much greater than in the other which is unaffected, yet on counting

the pulses in both arms I have invariably found them of the same number of beats at the same time, and therefore, mechanically speaking, no actual increase of action exists in the distended artery. Again, in the arterial disturbance called inflammation, we generally say that the action of the arteries is increased in the inflamed part; and yet if we examine an internal inflammation minutely, we shall be satisfied, that it is really a state of obstruction or distension, liable to be augmented by the currents of blood constantly transmitted by the heart. Our language respecting inflammation, and indeed respecting the whole *action* of the heart and the *re-action* of the arteries, is very defective in point of precision; and at a future period, I shall endeavour to attach definite meanings to certain general expressions which are now commonly employed, and the vagueness of which still tends to retard our advancement. The animal heat is one of the great media of connexion between the nervous and the vascular systems; and I shall afterwards show, that an attention to this circumstance will contribute to explain many of the phenomena of disease, and many of the operations of remedies.

If any local disease should finally be so great as to increase the action of the heart, other organs which had been previously predisposed may become disordered by that increase of action, in which the whole arterial circle participates. Thus

in chronic as well as in acute diseases, the heart is directly and indirectly concerned in their origin or progress; and much of what is denominated sympathy may be traced to a direct disturbance of the heart from some constitutional shock, or to an indirect disturbance from some topical disorder. In both acute and chronic diseases, we have not sufficiently attended to the action of the heart.

But, to return, it may be remarked, that diseases of chronic congestion are more simple than those of chronic inflammation, because the first are seated only in the larger veins of some of the viscera, and therefore are necessarily not numerous; whereas the last, being immediately seated in the capillary arteries, which are ramified through every part, must, therefore, necessarily be numerous. In diseases of chronic congestion, the heart is either oppressed or actually weakened, and this is the cause of the diminished tone of the arteries, which transmit or conduct the power of the heart throughout their extent: but in diseases of chronic inflammation the action of the heart is augmented, and this is the cause of the increased fulness or of the increased frequency in the action of the arteries. As the symptoms in disease of chronic congestion and chronic inflammation are varied by the functions of the organs wherein they are seated, so their effects are also varied by the difference in the natural structure of those respective organs. This difference in the structure

and functions of the organs affected will go far to explain the difference in the phænomena attendant on chronic congestion and chronic inflammation; but as, in the present state of our knowledge, the cure mainly turns upon the general analogies in the character and consequences of congestion and inflammation, the principles of practice are simpler than might at first appear. It is, probably, in most chronic as in most acute diseases, that the seat of the most decided disturbance is determined by some latent weakness or fault which had existed in the part previously to the open developement of the complaint.

Pale, spare persons are frequently the subjects of chronic congestion, though it is not uncommon in those who are corpulent, and who have naturally a lax muscular fibre. The pale, spare subjects here noticed, are often greatly benefited by one or two small general venesections, followed up by a mild course of purgatives; and if they should flag under these evacuations, small portions of diffusible stimulants should occasionally be allowed, in conjunction with a light nutritious diet, by way of supporting the action of the heart and arteries, and of tending to restore the natural balance of the circulation. But in the employment both of diffusible stimulants and of a nutritious diet, the greatest exactness is often required; for if they be carried too far, they rouse the system into fever, and thus only remove fulness of the venous to the arterial system. When

the veins are timely relieved of preternatural congestion, the heart necessarily regains its power, as a spring when the superincumbent pressure is taken away; and the increase of action acquired is of itself often sufficient to equalize the circulation, when aided by food which supports without exciting the body. When the pulse rises under the evacuant plan, it is a certain indication that it is answering a good purpose; but on the contrary, when it becomes weaker, it is as sure an indication that this plan should not be pursued further, because it is then diminishing the power of the heart, and with it that of the arteries, and must therefore increase the venous congestion. In such delicate cases, the common modes of depletion are almost always injurious: yet a regular course of the Harrogate sulphureous water, so as to keep the bowels gently open, and to stimulate all the secretory organs, will be the best remedy; though during its exhibition the patient should occasionally use the tepid bath, and be placed in a fresh atmosphere, which is often highly beneficial. In many instances of chronic congestion, I have seen the most agreeable change induced by a removal from the town into the country; and when we consider the invigorating power of pure air, we cannot be surprised if it should remove venous congestion, by communicating a permanent tone to the heart and arteries.

In corpulent subjects labouring under chronic

congestion, while the constitutional energy remains unexhausted, one or two moderate bleedings will mostly be serviceable ; and then the purgative plan may be pursued, until the prominent symptoms subside. But in these cases, as in those occurring in spare subjects, the warm bath is an excellent auxiliary ; for it not only equalizes the temperature, but brings a flow of blood to the surface, and thereby lessens the internal plethora of the veins. When corpulent subjects, however, are in a state of real debility, rather than of oppression from chronic congestion, the pulse always sinks under venesection, the certain sign, as in the former case, of its impropriety ; and then a regular perseverance in the Harrogate sulphureous water will be as requisite as in spare subjects, upon whom depletion by the lancet produced similar effects. When chronic congestion is connected with oppression only, evacuants act as direct stimulants in removing both the cause and the effect, and the system often soon regains its wonted vigour ; but when chronic congestion is connected with real debility, evacuants tend to throw the heart into some degree of collapse, and the blood consequently still further leaves the arteries, and accumulates in the veins, and such measures are then either useless or pernicious. In all cases, therefore, a careful estimate of the patient's strength, and of the tendency of the treatment, ought to be made, that the last may be duly proportioned to the first ; but as oppression

and debility are very different states, and yet seemingly alike, we must not confound them in our inquiries, since depletion is always indicated in the one, however unsuitable it may be in the other. Sydenham has observed, that old people often bear bleeding well. This is particularly the case when they labour under chronic congestion of the brain or liver, which is so frequently the forerunner and attendant of their paralytic and apoplectic attacks; and if practitioners would more frequently abstract small portions of blood from persons advanced in life, when there are clear indications of congestion in the brain and liver, health would often be preserved, and life prolonged. Many old persons have as large appetites as young, which they are apt to indulge with nutritious food; and thereby an overplus of blood is formed which the system does not require, as the body is not then to be built up as in the young. Sometimes indeed old persons are saved, for a time, from the danger of this plethora by a gradual deposition of fat which relieves the large vessels of fulness; but when even old persons eat largely and continue thin, they are always in jeopardy from vascular distention, unless the bowels should be spontaneously lax, or unless the kidneys or the skin should secrete copiously. It is for the reason above explained, and the blood naturally then accumulating in the veins, that old people are frequently so much benefited by bleeding. Nevertheless, in aged people, the lancet should al-

ways be employed with becoming caution: for if it be rashly hazarded when they are really enervated, it will hurry them to the grave; and in every instance where cause exists for hesitating about venesection, purgative medicines should be preferred, which are generally not only safe, but also efficacious evacuants. But in the chronic catarrhal affections of the chest to which old persons are so subject, even purgatives should be mostly avoided, and those milder medicines termed laxatives should be substituted, with the occasional use of the blue pill when there is any coexistent disorder of the liver; and as for the lancet, it ought rarely to be thought of in such affections, especially when the expectoration is free, or when the lips have a livid or bluish tinge from the obstructed respiration, for under both these circumstances blood-letting is commonly very injurious. There are some patients, threatened with apoplexy, whose powers are so broken up as to render general blood-letting extremely questionable; but they commonly bear brisk and repeated purging with advantage, in combination with local blood-letting and blisters. When by mistake the employment of the lancet has been carried much too far in chronic congestion, great general exhaustion occurs, with excessive irritation of the nervous system. Under such circumstances, opium is often eminently useful, not only in renewing the energy of the heart, but in calming the nervous irritation.

In my treatise on typhus, the efficacy of calomel and opium, after bleeding and purging, was strongly insisted on, in acute and sudden congestion; and an attempt was there made to show, that it tended to restore the balance between the venous and arterial systems, by rousing the heart into play, and by removing unequal distributions of blood. Though this combination, like almost every other, has less power over chronic congestion, when preceded by evacuations, still it is sometimes very useful, especially if the liver be affected: but under every form of this disease, mercury should only be given to correct the alvine evacuations, and to excite the heart and the secretory organs; and when these purposes have been answered, it ought to be wholly withdrawn as speedily as possible. While short courses of mercury may be beneficial, long ones often break up the general strength, and leave the nervous system in an irritable, and the vascular in a most vacillating condition; so that if the chronic congestion should have been removed, irregular determinations by the arteries are apt to take place, but especially in the organ that was formerly the seat of the venous fulness. As it is generally desirable in chronic congestion to maintain an action on the skin, sudorifics may frequently be conjoined to calomel with great advantage; and among these the best are opium, camphor, the compound powder of ipecacuanha, and antimony. When

the brain, however, appears to be the chief organ of the congestion, the opium ought to be given with great care, until its effects have been decidedly ascertained; for though in some cases I have known it highly serviceable, in others it seemed to aggravate the symptoms. The operation of opium in *venous* congestion of the brain requires much elucidation. As stimulants of the skin, blisters may sometimes be applied with benefit in diseases of chronic congestion; but upon the whole, the warm shower-bath, strongly impregnated with salt, is one of the best cutaneous applications, especially when followed by friction. Exercise on horseback is sometimes extremely beneficial in chronic congestion of the viscera, wherever seated; and it will often alone remove those anomalous symptoms of *functional* disorder of the heart, which put on the character of structural derangement; though in all of such affections, the alvine evacuations should be kept in a healthy condition, by an occasional blue pill and laxative.

If chronic congestion should so suddenly increase as to put on an acute and dangerous character, prompt depletion will in general be required: but even then moderation must be the golden rule, for no more blood should be drawn than to free the heart from oppression; and the cure must afterwards be chiefly trusted to purgatives, and to the mildest mercurials, with the use

of the warm bath, and blisters. In these sudden conversions of chronic into acute congestion, the surface is always cool, and the pulse oppressed, while the brain and liver are generally the parts much engorged with venous blood. If we inquire into the history of those attacks of apoplexy and palsy, which are now so common amongst emaciated or sedentary people, we shall find, that they had generally been long preceded by symptoms of venous congestion about the brain and liver, and by a deficiency of arterial action on the skin. The sudden supervention of apoplexy or of palsy in such examples is most frequently owing to the influence of the weather; but in some cases it arises from those mental shocks which are met with in the world, and which, affecting the source of the circulation, powerfully influence its currents in the weakest organs. In acute congestion of the veins, however, it must be recollected, that depletion is only applicable at the first attack, when the vital powers are but oppressed, and not exhausted: for when an universal collapse has once supervened, depletion will be almost immediately fatal; and the only thing which can then afford the remotest chance of success, is the tolerably liberal administration of opium. In the collapse of cholera morbus, as was before observed, it is surprising what a favourable change opium will sometimes produce under the most unfavourable appearances; and in all real exhaustions of the vital

energy it is superior to any other drug with which I am acquainted. The operation of opium, like that of calomel, is modified by the conditions of the body under which it is exhibited; hence in some diseases, small doses are prejudicial, while in others large ones are useful; and hence, too, it may be extremely improper at one stage of a complaint, and highly expedient at another. A practical essay on the powers of opium is a desideratum in physic. It is too often prescribed in ordinary affections, and too seldom in some extraordinary ones.

Many of the chronic inflammations of the viscera may be traced to the influence of our variable atmosphere on the surface, and from thence sympathetically on the various organs of the interior; but many of them also are to be ascribed to strong diets and drinks, and to high mental emotions, which stimulate the heart and arteries much beyond their ordinary tone. The circulation of the heart, and that of all the vital machinery, which its action influences, was intended to be performed at a moderate rate; and if we incessantly and greatly increase the rapidity of the circulation, it is not to be deemed wonderful, that this vital machinery should be disordered or deranged by too much rapidity of motion. The cause of death in chronic diseases is in general mechanical, is in general dependent upon the lesion of some part of importance; as the de-

rangement of one part in a complicated piece of machinery will suffice to stop the movements of the whole. But the disordered actions which precede and produce derangement of structure in the human body are sometimes exceedingly slow; and this is especially the case in chronic inflammation, for it will often exist months or even years before it destroys the structure, or greatly impedes the functions of the organ affected, as we perceive in chronic inflammation of the eyes.

Wherever chronic inflammation may be internally seated, the treatment is to be regulated by the same or similar principles; but in the application of these principles we must never fail to make allowances for peculiarities of age, of previous and present habits, of constitutional discrepancies, and so forth. Most frequently, small or moderate venesections should be first tried from the larger veins; and these should be followed up by local bleeding, blistering, purgatives, rest, and an antiphlogistic regimen: but where success does not attend these measures, small doses of calomel or of the blue pill may be prescribed until the system be slightly affected, and then, for the most part, they should be suspended, and the laxative plan continued. With a few exceptions, short or mild courses of mercurials have seemed to me far more beneficial than long or severe ones in chronic inflammation; and this has been espe-

cially observable when they have been used in combination with the Harrogate sulphureous water, a remedy whose purgative and alterative powers shall afterwards be explained. But in every instance of chronic inflammation the greatest attention should be paid to the diet; for unless it be strictly antiphlogistic while the symptoms continue unsubdued, very little advantage is to be expected from any remedial plan. In many cases, which were deemed to depend upon weakness of the stomach, I have seen the most decided benefit from a very spare diet; and that, too, where a contrary one had been tried to maintain the strength, which it in fact diminished, by irritating and oppressing the stomach. What is called dyspepsia, is often a symptom attendant on diseases of the brain or of the liver; and when that is the case, it can only be removed by removing the original diseases: but when dyspepsia is an idiopathic affection of the stomach, it is very frequently connected with a low degree of inflammation of that organ; and then small bleedings, repeated blisters to the epigastrium, with purgatives, an occasional blue pill, and a spare diet, will constitute one of the best plans of cure. If dyspepsia be attended with frequent retchings or vomitings, fasting for some hours now and then has frequently an excellent effect; and indeed in most chronic cases where the stomach is irritable, nothing tends to restore its tone sooner than the rest which occasional fasting affords to its functions.

After moderate evacuations, small doses of the liquor arsenicalis sometimes remove stomachic and cephalic affections of long standing; but this remedy is more particularly useful in periodical pains of the head, when its use is preceded by depletion. In all chronic complaints of the stomach the quality as well as the quantity of the food should be regulated; and when much acidity and flatulence is apparently generated after meals, vegetables ought to be sparingly used.

In some anomalous affections of the bowels attended with violent and frequent returns of spasmodic pain, I have prescribed pretty full doses of the rectified oil of turpentine, and occasionally with complete success, even where every other measure had previously failed. One case of this description fell under my observation last year; and as neither bleeding, purgatives, opiates, blisters, the tepid bath, nor any of the ordinary means, gave relief, about an ounce of the oil was administered, which soon put an end to the attack; and whenever the spasms returned, it always produced a similar effect, though before its use the blood drawn most frequently exhibited some of the inflammatory crust. In every instance of its exhibition it acted as a powerful purgative, and dislodged large portions of morbid mucus which had probably been long adhering to the villous coat of the bowels. I have, too, seen considerable benefit from about forty or sixty drops of this medicine

two or three times a day, in that peculiar complaint of the stomach where there is generally much uneasiness when it is empty, and where this uneasiness is mostly lessened by taking food. To administer a powerful stimulant in diseases connected with excitement is a practice opposed to our received theories of inflammation; but it is nevertheless an interesting subject of inquiry to ascertain in what kinds and in what stages of inflammation certain stimulants may be *sometimes* efficaciously given; for though in acute inflammations experience precludes them, yet in chronic inflammations stimulant applications are sometimes useful. Now experience may perhaps afterwards show, that in certain internal accumulations of venous or arterial blood, we may safely and even advantageously have recourse to excitants for a time, though at present we have not yet arrived at any definite rule on the subject. When venous or arterial congestion has continued beyond a certain period, or has accumulated beyond a certain amount, the vessels seem to lose their tone, as we may perceive in chronic affections of the eyes; and it is especially under such circumstances, that the use of stimulants either excites some change on the blood itself, or on the vessels, by which the morbid accumulation is removed. Even a combination of the evacuant and the stimulant treatment is sometimes beneficial in chronic as it is in acute diseases; and this particularly when a local affection coexists with a

real depression of the general powers. Yet stimulants at all times ought to be most cautiously resorted to even in chronic inflammation or congestion; and these brief hints are only given here to awaken inquiry on a point of pathology and practice which has not been sufficiently investigated.

In delicate constitutions it may frequently become an important question, whether general or local bleeding should be employed; and whenever there is a rational ground of doubt on the subject, the latter should have the preference. The beneficial effects of local blood-letting, by leeches in particular, have not perhaps been rightly appreciated by the profession; and I was not myself aware of its great utility in this mode, until I strictly attended to its influence over the action of the heart. Eight or ten leeches applied to any part of the surface of the body will rarely fail to reduce the force and the frequency of the pulse, in cases where the general excitement does not run high; and it is somewhat surprising that I have frequently known the application of this number of leeches reduce the pulse more than a general venesection, though far more blood was taken away by the latter than by the former. It is easy to explain why we should weaken or actually stop the action of the heart by drawing a considerable quantity of blood from a large vessel; but it is not so easy to explain why the motion of

the heart should be generally weakened and sometimes stopped by the small portion of blood which a few leeches abstract. When we bleed with tolerable freedom from a large vessel, we at once cut off a certain current of blood which was destined to be sent to assist in stimulating the right chamber of the heart into action; and this current being thus cut off, the heart falls into a temporary collapse, for want of the full and necessary supply of its wonted stimulus—the blood. On the occurrence of faintness, the momentum previously given to the blood in the arteries, by the contraction of the left ventricle, suffices to complete its circulation there: while the right ventricle, in returning from its state of contraction, draws in the venous blood, until it is completely filled; and the wonted actions of the heart again succeed from this accumulation of blood about its right side. In some individuals, small or moderate losses of blood are sufficient to throw the heart into a collapse, by depriving it of a portion of its natural stimulus; but in others a large quantity of blood must be drawn to produce such an effect, so different is the natural condition of the heart in different subjects. When death occurs from hemorrhages, it depends upon the collapse of the right side of the heart. In fact, when the right side of the heart has not been supplied with its due proportion of blood, on account of hemorrhage, fainting or syncope is the natural mode in which its action is again renewed: for during

fainting or syncope the blood leaves the arteries, and, returning by the veins, accumulates about the right side of the heart, where it once more restores the movements of perfect life. But in certain cases of hemorrhage the loss of blood is so great, that enough is not returned by the veins to renew the contraction of the right ventricle: and hence the transfusion of blood into the veins, or the inflation of the lungs with oxygenated air, are expedients which claim an especial attention in such formidable examples. But the prosecution of this point would lead me into a long digression here; and the original subject shall therefore be resumed, relative to the influence of local blood-letting by leeches.

It has, I trust, been in some degree explained, why drawing blood from a large current returning to the heart, may weaken or even stop the motion of that organ; but the abstraction of a few ounces of blood by leeches, rarely fails to diminish the action of the heart, and sometimes to stop it entirely; and as this effect, in general, cannot wholly depend upon the quantity of blood lost, upon what does it depend? Of the fact I am certain, from an accurate account kept of the operation of local bleeding, by leeches, on patients in various instances; yet I must confess myself incompetent to explain it, though no doubt it is connected with those sympathies which exist between the nerves of one part and

another. This fact, however, is applicable to many cases which are daily occurring in practice, since it may enable us to accomplish by small abstractions of blood, what we might have deemed only producible by full general venesection. It is the common opinion, that the efficacy of local blood-letting is chiefly attributable to revulsion, by which the fluids of one part are elicited to another; and though this doubtless has often some influence, yet accurate observation will convince any practitioner, that the principal power of local blood-letting is to be ascribed to its influence over the heart, like that of general phlebotomy. In the treatment of the acute diseases of children, and of the chronic diseases of adults, the method of local blood-letting may be exceedingly useful on many occasions when carried so far as to affect the pulse; for in both cases it is often highly desirable to save the strength, by abstracting no more blood than is just sufficient to weaken the action of the heart, without exhausting the whole system. The cupping glasses, which Mr. John Welsh invented, are excellent auxiliaries after the application of leeches, since when they are applied over the punctures, they continue to abstract blood with very little uneasiness; whereas the common method of cupping is frequently attended with considerable pain, the stimulus of which may tend to counteract the good effects of the loss of blood, by reacting on the heart where that organ is highly excitable. But local, like general

blood-letting, will seldom be of any service in internal diseases, except where it is carried so far as to weaken the pulse; and as this is a practical axiom, it ought never to be disregarded, in the treatment of serious complaints, whether chronic or acute. In this department of the work, I have said but little about the chronic affections of the chest, to which the aged in particular are so exceedingly liable; yet most of these will be found to be more or less connected with chronic inflammation of the bronchia, concerning which some remarks have been made in the section on consumption. As for affections of the heart, my experience is not sufficiently precise to enable me at this time to develope their character or treatment; but I would merely suggest, in common with Dr. Hamilton, that disorders of this organ should never be considered as hopeless until a course of medicine has been tried to correct disturbances of the digestive functions, to which affections of the heart are so often secondarily related.

Most practitioners, who have pursued the commonly adopted principles of practice, must be ready to confess, that the result of their experience has mostly been unsatisfactory in chronic diseases in general. It was the want of success which led me to abandon the tonic plan in by far the greater number of cases, and the treatment recommended was gradually substituted, and at

last its superior efficacy amply confirmed by experience of its effects. Future observation will bear me out in asserting, that the weakness of which patients so constantly complain in chronic diseases, for the most part is only the consequence of some venous or arterial fulness oppressing an important organ; and it may be regarded as an axiom, applicable to most cases, that to prescribe solely for a sense of weakness in these affections is a mere delusion, as the states upon which it depends must be removed, before the least approach can be made towards recovery. In the preceding pages it has been attempted to show, how those states are to be removed or lessened when seated in vital parts; yet it must be remembered, that they are only remediable when unconnected with organic derangement, which is their ultimate and mortal product. Nevertheless it is not reasonable to expect, that any plan of treatment will succeed in all cases of chronic disease, even when they are not combined with organic derangement; and I have accordingly found the methods recommended at times ineffectual, even when they were tried under circumstances which simply indicated disorder of function, without any concomitant sign of disorganization. In examples of chronic disease which resist the application of all ordinary means, it is common for physicians to send the patient to some watering place, most frequently with the hope of amusing his mind, and of allowing the sanative powers of

nature to operate with the least molestation. So far back as the year 1807, it has been customary with me to send patients of the above description to Harrogate, recommending them to drink the sulphureous water there; and at first I merely did so under the impression, that as the water was a mild purgative it might possibly do some good, aided by the change of scene, and by fresh air. But so early as the autumn of the year above mentioned, my attention was forcibly directed to the power of this physical agent, by its apparently curing an obstinate affection of the liver, which had previously resisted all the usual measures; and since that time I have not only endeavoured to investigate the operation of the Harrogate, but also of similar sulphureous waters, so that the following remarks may be considered as the result of pretty extensive observation.

The first thing which struck me in regard to the operation of the Harrogate sulphureous water was, that the bowels might be opened by it day after day, week after week, without debility being produced; nay, on the contrary, most of the patients gained both strength and flesh, notwithstanding they had daily and copious evacuations. This circumstance alone seemed to give the sulphureous water a most decided advantage over the purgatives in common use; for it must be admitted, that they cannot be long continued in chronic diseases, without diminishing the strength. For some time, therefore, I solely attributed the

efficacy of the sulphureous water to its purgative property, together with the peculiarity that its long continued exhibition caused no debility; and as for a considerable period, the complaints in which I prescribed were chiefly stomachic and hepatic, I was the more confirmed in this opinion as to its operation. But cases of chronic disease fell under my observation at various times, in which the sulphureous water was most decidedly beneficial, and that too where the bowels had been but scantily moved; and as the effect in these cases could by no means be purely attributed to its action on the intestines, I was led to inquire whether it might not have some other agency which had escaped my observation. In attending more closely to the changes which this water induced, I found that it acted most powerfully on all the secretory organs of the body, but more especially on the liver, on the kidneys, on the villous coat of the intestines, and on the skin. Here a new operation was presented to my inquiry. In reflecting on all the facts which had come before me, I ascertained, that this water had removed chronic affections of various internal and external parts; and hence at length the inference followed, that it was really beneficial as a very powerful alterative, and that it had a direct influence over chronic inflammation, wherever it be seated, whether in the viscera, or upon the surface of the body. In still further pursuing the consideration of the subject, I was fully satisfied, that I had arrived at a general principle in the

operation of the sulphureous water; for, some time afterwards, on trial of that at Dinsdale, near Darlington, I found that its effects were also very powerful in chronic inflammations, though it be but slightly laxative. It at once, therefore, occurred to me, that the chief efficacy of the sulphureous waters of Harrogate and of Dinsdale depended upon the sulphureted hydrogen gas, which they both contained; and indeed the principal difference between these two waters is, that the first contains less of the sulphureted hydrogen gas, but more of the saline materials than the last; so that by adding very small doses of purgative salts to the one, it may be made to operate like the other, in many cases.

Mercury has been universally esteemed the most powerful alterative which has ever been used; and most practitioners are now convinced that its efficacy, in acute as well as in chronic affections, depends upon its action on the secretory organs. Now in the sulphereted hydrogen gas, we have another agent which acts as powerfully as mercury on the secretory organs; but with this difference, that while the long continued use of the latter, in chronic diseases, generally breaks up the strength, that of the former generally renovates the whole system. The sulphureted hydrogen gas, then, has a decided superiority over mercury in chronic diseases in general; and this is not a speculative opinion, for I have proved its correctness in numerous instances by the test of ex-

perience. Chronic diseases, as their very name and nature imply, come on and advance by slow degrees, and we mostly find, that they can only be overcome by measures, the operation of which is continued for a considerable time. Hence it is, that in chronic diseases we do not find bleeding and purging act with the same force and rapidity as in acute diseases. If we relied upon these as our chief remedial powers in both diseases, we should be compelled to repeat them more frequently in the former; and even then we should very often break up the general strength, and our success in the main would be much less certain than in acute diseases, which generally yield to a repetition of such active expedients. In chronic diseases, therefore, it is quite a desideratum to possess an agent which shall operate daily and favourably, that the desired change may be at last induced, without injuring the general system by the treatment; and from an extensive observation of its effects, I may confidently affirm, that this agent is to be found in the sulphureted hydrogen gas, combined with laxative agents, in the mineral waters of this country.

It has been observed that the sulphureted hydrogen gas resembles mercury in its operation, inasmuch as it acts on all the secretory organs, but that in one respect it differs from mercury in its operation, inasmuch as its long continued use does not exhaust the energy of the system. There are, however, other points of resemblance

between these two remedies, which it may be proper to mention, that the mode of administering the sulphureted hydrogen gas may be fully understood. When the system resists the specific action of mercury, it is a certain test that an inflammatory diathesis prevails to a considerable extent, and this is the cause of the resistance; for lessen the inflammatory diathesis by proper evacuations, and then the specific action of the mercury will readily be induced. Now something similar obtains in regard to the sulphureted hydrogen gas, since when the system is impervious to its influence, it is on account of an inflammatory diathesis in a more than ordinary degree; yet only let that inflammatory diathesis be diminished by the lancet or by purgatives, and then the sulphureted hydrogen gas will produce all its beneficial effects. This point it is of great consequence to remember in practice, for as the powers of mercury have often been frustrated through an omission of previous evacuations, so the powers of the sulphureted hydrogen gas may be frustrated by the same circumstance. Yet in the majority of examples, the phlogistic state does not run so high in diseases of chronic inflammation as to resist the efficacy of the daily administration of the gas; but when those diseases are seated in the head, or in the abdomen, the cure will mostly be much accelerated by procuring a purgative as well as a specific operation from the sulphureous waters. Hence it has appeared to me in cephalic and abdominal affections, that the

Harrogate are generally more efficacious than the Dinsdale waters, when simply prescribed as nature has presented them; while on the other hand, the Dinsdale water has appeared to me more efficacious than the Harrogate, in chronic inflammations of the chest, in chronic inflammations of the joints, and in some very obstinate affections of the skin. But the operation of the Dinsdale water may be made to resemble that of the Harrogate, by dissolving in it minute portions of purgative salts; and as it contains more of the sulphureted hydrogen gas, so it will sometimes overcome distempers which had resisted the influence of the Harrogate water. During a series of years I have traced the operation of the sulphureted hydrogen gas from one organ of the body to another, from the skin, joints, and eyes, to the viscera of the head, chest, and belly: and the sum of my observations would authorize me to declare, that it is one of the most powerfully antiphlogistic agents which can be found; for wherever the chronic inflammation be seated, it will, I believe, more frequently remove it, than any other mean, provided the bowels be kept regular during its administration.

In several chronic affections of the head and abdomen, when aided by small bleedings and moderate purging, it has effected a cure where mercury had completely failed; and although the efficacy of mercury is so notorious in chronic affections of the liver, yet upon the whole I am

disposed to think, that it is inferior to that of the sulphureted hydrogen gas. In many hepatic diseases, however, it will be best to combine the operation of these two remedies at the same time; and this plan will often be found of vast advantage, but especially if the Harrogate water be employed so as daily to act as a purgative. Small doses of calomel, or of the blue pill, may be given for a short period every night at bed-time; and a large tumbler-glassful of the Harrogate water may be administered on the following morning before breakfast, and repeated every twenty minutes, until it operate by the bowels. But in such cases, the mercury should not often be given longer than a week or ten days; some mild purgative pill may then be substituted at bed-time, and the sulphureous water continued every morning, until the symptoms entirely disappear. In conjunction with this treatment, it will occasionally be requisite to apply a blister now and then to the right hypochondrium; but in most instances this auxiliary will not be required, though in some obstinate cases it will be found very efficacious, when rapidly repeated. In what are termed stomach complaints, a regular perseverance in the Harrogate water will frequently do more good than all the medicines in the pharmacopœia: but in these, as in hepatic affections, it will sometimes be requisite to assist its purgative operation by an occasional blue pill, or by one of the compound rhubarb or aloetic pills at bed-time; and on certain occasions, a blister may likewise be bene-

ficially applied over the epigastrium, and even repeated so long as the symptoms remain unsubdued. Chronic rheumatism and gout, and almost all cutaneous affections, will yield more rapidly to the continued internal exhibition of the sulphureted hydrogen gas, than to any of the means now commonly employed; but in these, and also in most chronic complaints of the viscera, the recovery will be considerably expedited by the frequent use of tepid baths which contain the sulphureted hydrogen gas. In many parts of this volume I have strongly insisted on the importance of attending to the functions of the skin both in health and disease; and I am fully persuaded, that much of the efficacy of the sulphurated hydrogen gas is to be attributed to its action on the skin, through the innumerable pores of which it operates with remarkable power. At the same time it is to be recollected, that it is not upon one, but upon all the secretory organs, that it exerts a specific influence; but certainly to the skin, as it is so capacious, a large portion of that influence is directed, and next in degree it is generally spent upon the kidneys, both of which circumstances make it so beneficial in cutaneous diseases, and in those of the urinary organs.

A remedy, then, so highly efficacious in chronic inflammations in general, might seem at first sight well fitted for phthisis and similar insidious affections; and though my experience is very incomplete with respect to its powers in confirmed con-

sumption, yet it has seemed to me exceedingly useful in several instances where phthisis was distinctly threatened. But this has been more especially observable, when the pectoral symptoms were complicated with hepatic disorder, as frequently occurs; and indeed in the commencement of most fevers of the hectic type, the sulphureous waters have afforded more relief than any thing else. In a few solitary cases, which bore the characters of genuine and confirmed phthisis, and in which pus was expectorated, a marked change for the better took place from the drinking of the Dinsdale waters; and I recently saw two remarkable examples, which *appeared* to be cured by this mineral spring, though in both the disease was far advanced when it was first tried. All the measures hitherto recommended by authors having proved most fallacious, it becomes a question of the greatest importance to society, to ascertain precisely the powers of the sulphureted hydrogen gas, both in the incipient and confirmed phthisis; and as I have formerly shown, that the closest sympathy exists between the lungs, skin, and kidneys, and as I have also ascertained, that this physical agent acts most powerfully on both these organs, the consideration of it has still stronger claims to our regard. Besides, numerous trials have fully convinced me, that in all chronic inflammations of an ordinary nature, this gas has one common and specific operation; and as it cannot be denied, that phthisis is an inflammatory affection, we might surely expect it to have some

influence. It may however be urged, and justly too, that the inflammation attendant on the tubercular consumption is not of an ordinary, but of a peculiar kind: yet in answer to this objection I can state, that the internal and external use of the sulphureous waters are far more efficacious in scrofula than the common measures; for after all the ordinary treatment had failed, I have seen scrofulous affections cured or lessened by drinking these waters, and using them as a tepid bath. Now if phthisis really be scrofula of the lungs, which is my firm opinion, why may it not also prove serviceable in that affection, as well as in others of a similar character, though of a different seat? Dr. Rollo was the first, so far as I know, who suggested the internal use of the sulphureted hydrogen gas in phthisis, but as he did so, in common with some successors, upon merely speculative grounds, the remedy has been disregarded; and if the few facts and hints, which are here offered, should call the attention of the medical public more particularly to the subject, general inferences for or against the efficacy of this agent in phthisis may at last be established, by more extensive trials than I have yet been enabled to make. But it ought to be mentioned, that in the advanced stages, the Harrogate water is prejudicial in phthisis, by acting on the bowels from the purgative salt which it contains; and though the Dinsdale possess no ingredient of this sort, yet my experience has not enabled me to determine whether it ever produces any thing like a colliquative

diarrhœa. At the same time as no such effect was observable in the cases reported above, I am inclined to think, that it has a decided superiority over the Harrogate water in the advanced stages; indeed this remark is also applicable to examples of apparently incipient or threatened phthisis, except where the liver is affected, and then the Harrogate is perhaps the best.

It is not in phthisis alone, that the sulphureted hydrogen gas has been neglected by practitioners in general; for in the whole class of chronic diseases, to which it is so peculiarly suited, the ordinary routine of palliatives is pursued in private practice, while this remedy is unnoticed or unknown. Nay, I have heard it said, that some professional men of deserved eminence assert, that the sulphureous waters of this country have no decided efficacy in chronic diseases; but I dare nevertheless pledge my word, that, if they be only fairly and fully tried, they will be found amongst the most powerful agents which ever have been brought to the relief of human maladies. Most patients are sent to drink the sulphureous water at Harrogate for cutaneous affections, and as these are in general connected with disorders of the digestive organs, they are often readily cured; since the sulphureted hydrogen gas, assisted by the minute portion of salts in solution, operate at the same time upon the morbid states of the digestive organs, and upon those of the surface. But from a legitimate generalization of the

facts which have fallen under my observation, I am justified in the opinion, that this remedy has a specific action suitable to all diseases where a certain degree of the inflammatory diathesis prevails; and since diseases of chronic congestion in the veins generally require a similar treatment to diseases of chronic inflammation in the arteries, the applicability of the sulphureted hydrogen gas to those shall next be concisely noticed.

For a considerable time the pathology of no diseases embarrassed me more than those which I have denominated congestive: for when of an acute kind, patients were at once overpowered, not only without excitement, but with positive proofs of an oppressed state of the heart and arteries; and when they assumed a chronic character, patients became pale, and apparently feeble, with a similar but less diminution in the tone of the pulse. In both cases, therefore, the symptoms were very different from those which attend inflammation, and it was not until I obtained morbid dissections, that I became fully convinced of their real nature. Inflammation is a disease seated in the arteries, congestion is a disease seated in the veins; and as inflammation may be either acute or chronic, so in like manner may be congestion. Great discoveries in science, whatever light they may throw at the time they are made, sometimes tend afterwards to retard the progress of knowledge; for men, considering that all has been revealed which can be on the subject, often

sit down contented without prosecuting the inquiry any further. Thus it has happened, that the great discovery of our illustrious countryman, Harvey, has had an ultimate tendency in preventing us from exploring the many obscurities which still hang over some parts of the circulation of the blood in health and in disease; and thus it has happened, too, since his time, that almost every medical writer, who contemplates diseases chiefly through the vascular system, has placed them in the arteries, and disregarded the veins. But all those acute and overwhelming affections, which destroy before the appearance of re-action, and most of those chronic and oppressive affections, under which patients crawl about pallid and sunk, are seated in the veins of the viscera; and until we cease to view the majority of them as diseases of real debility, we shall only continue to pace the unprofitable and beaten round of blind, of dangerous empiricism. In a former work I endeavoured to show the superiority of the depletory and the alterative to the purely stimulant plan; and in the foregoing pages have intimated the applicability of a similar but modified plan, to the greater number of those chronic cases which are strictly congestive. But as the strength is only suddenly overpowered by attacks of acute congestion, and as it is slowly sapped by chronic congestion, so in almost all examples, the depletion must be more cautiously made in the last than in the first; for the quantum of depletion which would relieve the system from the load of acute

congestion, would frequently exhaust the remains of the latent energy, which the chronic congestion had concealed under the mask of apparent weakness. On the contrary, very small or very moderate bleedings will often answer an excellent purpose in chronic congestion, when followed up by purgatives, and a few doses of calomel and opium; but where this treatment does not succeed, and where there still appear evidences of venous fulness about some of the vital regions, then the continued use of the sulphureous waters, with the occasional employment of the warm sulphureous bath, will be preferable to any other known expedients.

The sulphureous waters, it has been affirmed, and could be proved by numerous cases, operate specifically on the secretory organs; so that during their administration a system of evacuation is going on from almost all the capillary exhalants. As this evacuation may be continued for days and weeks, and yet induce no debility, it seems peculiarly calculated for cases of chronic congestion; and accordingly I have frequently seen it most serviceable, where other measures had failed to free the system from a superfluity of blood in particular parts. In all chronic diseases of consequence, the functions of the skin undergo great and manifest changes, but this especially happens in those of a congestive kind; for in them the surface is generally blanched, and lax, while the temperature of it is either below the natural standard,

or exceedingly variable. But the sulphureous waters, used internally and externally, rarely fail to improve the condition of the skin, in chronic congestion; and though the state of that organ be in many respects widely different in chronic inflammation, yet even then they also frequently restore its natural functions. Those shrunk and sallow persons who are deemed nervous, bilious, or hypochondriacal, often labour under some chronic congestion of the brain or liver: and in these cases, the greatest benefit will sometimes result from a steady perseverance in the use of the sulphureous waters. But whenever the head or liver is affected, alvine evacuations should in general be daily procured; so that if the Dinsdale waters be used, a little salt must be added to them, and it will only be necessary when the Harrogate waters are taken, to give a mild laxative pill the night previous to their exhibition.

In persons who are deemed to be of the nervous temperament, there is a peculiar irritability of the heart, and its action of course is liable to be disordered by slight as well as by severe causes; but these persons generally suffer most from mental emotions, which always make the heart palpitate, and on some occasions it will seem to flutter almost like a bird in the breast. During these inordinate motions of the heart, there are often what we term determinations of blood to the brain, and sometimes to other organs; but a state of collapse often succeeds such determinations,

and this collapse again may be followed by imperfect excitements of the heart and arteries. It is thus, as it were, vibrating between one extreme and another, that such persons often pass their lives with but few intermissions of ease, when they are placed where the mind is agitated; and most practitioners must well know from experience, that little or no relief is obtained from the usual remedies, tonics and antispasmodics. Nor indeed can much good be effected by any measures, unless the mind can be secured against violent shocks; but at the same time, more benefit will be obtained from the sulphureous waters, which act as purgatives, than most other measures. As for tonics and antispasmodics, they are generally worse than useless; but especially the last, which, being strong diffusible stimuli, often do serious mischief in naturally irritable habits. The nervous temperament may be hereditary, or it may be engendered by circumstances in the progress of life; but wherever it exists, the heart will be found peculiarly susceptible, and accordingly all excitants, whether mental, medicinal, or otherwise, should be studiously avoided. In many families, but especially where the nervous temperament prevails, some one organ is weaker than the rest, a peculiar defect liable to be transmitted from generation to generation; and in such cases, the weakest organ is sure to suffer from the morbid motions of the heart, from whatsoever causes they may proceed. People of the nervous temperament are often almost as much influenced

by vicissitudes of the weather, as by mental affections; and in such instances the skin is generally first disordered, and the heart next. Between the skin and the heart there is a most intimate sympathy, so that the changes induced in the one, often powerfully affect the other; but independent of this nervous sympathy, the abstraction of heat from the surface often powerfully influences the heart, for in that case the blood leaving the superficial retires into the deeper seated veins, and is thus returned superabundantly to the right auricle and ventricle.

It has already been mentioned, that the sulphureous waters will sometimes fail in chronic diseases of disordered action simply: and this probably happens in cases where the blood-vessels have been so long distended, as to have lost in some degree the power of returning to their ordinary state; but nevertheless, in the main run, these waters will answer an admirable purpose in chronic diseases, when deranged structure is not present. At the same time it ought always to be recollected, that they may easily be brought into disrepute from short or imperfect trials of them; and therefore they should, for the most part, be continued daily, in sufficient quantity, until the disease completely gives way, or until their inefficiency has been fairly proved by an unremitted perseverance. In some chronic cases of ophthalmia, of rheumatism, and of cutaneous affections, I have known them to effect a cure in two or three works: while

in other cases, apparently similar in all respects, twice, thrice, or even four times that period has elapsed before the cure has been accomplished; and what is here affirmed of these external affections is still more strongly applicable to internal diseases, which are seldom speedily overcome by these waters, how completely soever they may yield at last. In illustration of this point as to internal diseases, it may be mentioned, that I have seen both chronic inflammations of the liver, and chronic inflammations of the rectum, where no benefit was produced for three or four weeks; and yet a continuance of the waters for six or eight weeks longer, has effaced every vestige of the morbid indications for which they were prescribed. The long use of ordinary medicines almost always tends to injure the general powers of the system; but this is not the case with those waters which contain the sulphureted hydrogen gas largely, for they have an invigorating influence, though taken almost daily for weeks together. Yet whenever the sulphureous waters are prescribed, their operation should be narrowly watched; and they should always be omitted for a time when they produce head-ache, a white tongue, or some degree of febrile irritation. Some of these effects may follow their first exhibition, and especially when prescribed for subjects of a phlogistic diathesis; and similar symptoms also are apt to arise occasionally from their long continued use. Before they be re-administered in such cases, the employment of purgatives is commonly necessary,

the operation of which generally removes the febrile irritation, so that they afterwards mostly act without occasioning any similar inconvenience. But in all affections combined with vascular fulness the bowels should be daily moved during their exhibition; otherwise they may be liable to heat and irritate in a way almost similar to mercury. Nor need we fear, with the exception of complaints of the chest, to purge patients freely every day with the Harrogate water; for under this system of depletion, they generally gain flesh and strength, particularly in gastric, hepatic, and intestinal affections. The tepid bath of sulphureous water, along with its internal use, is mostly very serviceable; but the temperature of the bath should be duly regulated, otherwise it may cause considerable exhaustion. The tepid bath of sulphureous water is most indicated in complaints of the skin, chest, and belly; but it ought always to be had recourse to with caution, when the head is affected, as it may increase the flow of blood towards the brain.

Some elaborate and excellent works have been written on cutaneous diseases, but most practitioners will be ready to confess, that the modes of treatment recommended are often ineffectual: the internal and external use, however, of the Harrogate, or of the Dinsdale sulphureous spring, will rarely fail to cure such affections; and indeed I dare assert in general terms, without the dread of refutation, that these seemingly simple compo-

sitions of nature are of far more efficacy in diseases of the skin, than all the various and complicated formulæ of art. But in the treatment of all the scaly affections of the skin, it will be found a most important point to remove the scales by friction or some similar means, that the waters may be applied to the skin itself. Indeed I am convinced, that many practitioners fail in complaints of the skin, merely from applying their remedies upon the surface of the scales: whereas if they were to remove the scales daily, the use of the sulphur ointment, or of a tepid bath of sulphureous water, would frequently succeed; provided the digestive organs be properly regulated, for they are often concerned in the production and continuance of cutaneous diseases.

The treatises which have been hitherto published on the sulphureous waters above mentioned have not met with that attention which their merits deserved; but as I was led to investigate and to generalize the operation of these waters, without reference to what other writers had previously done, so perhaps I may be allowed to hope, that my unbiassed research respecting them may induce the medical faculty to give them an impartial trial. For my own part, however, I would not be content that the sulphureous springs of this country should be more frequently recommended than they have hitherto been by practitioners, but that attempts should be made to prepare artificial waters of the same constituents;

and though these might perhaps be of less efficacy than the natural springs, still they might prove highly serviceable in the class of chronic diseases, which so often baffle us in private practice. That artificial waters which contain the sulphureted hydrogen gas, may be put correctly and extensively to the test, I should advise them to be used internally as a medicine, and externally as a bath, in some of our large hospitals; where wards could be set apart for those chronic cases to which the sulphureted hydrogen gas appears to be so peculiarly applicable, from its powers of inducing a complete change in the system, through the secretory organs.

The analysis both of the Harrogate and Dinsdale waters shows, that the sulphureted hydrogen gas is the most predominant and active principle in each, and therefore it is natural that we should ascribe the efficacy of these waters to this principle. But both waters contain some carbonic acid gas, and some azotic gas, and that of Harrogate especially, small portions of various neutral salts, while that of Dinsdale holds some sulphur suspended; so that the first is in reality a purgative, and the last a very mild laxative at best, when taken to the amount of a pint or more in the day. It is on account of the small portion of the neural salts dissolved in the Harrogate sulphureous water, that it chiefly operates on the bowels: and even in the prescription of purgatives for chronic diseases, we would do well to

imitate nature in this particular; for repeated observation has convinced me, that we give far too large doses of purgative salts in chronic diseases, the effect of which generally is to irritate the system first, and to exhaust it afterwards. Eight or ten grains of the sulphate of magnesia, with forty or fifty of the common salt, will generally purge mildly and effectually, when dissolved in about a pint of water; and these doses may be frequently repeated without producing exhaustion; whereas if we often prescribe an ounce or an ounce and a half of the sulphate of magnesia, or of a similar salt in chronic diseases, we should in the end usually find, that considerable debility had been induced from their repeated exhibition and operation. Every grain of salt which we prescribe is probably taken up by the absorbents, and mingled with the mass of blood, before it acts, through the exhalants, as a purgative to the intestines; and if this be the fact, we may readily comprehend, why so much irritation should often follow large doses of salts in chronic affections. In acute diseases, every moment is precious, and therefore the agents which we employ should be given in powerful doses, that they may operate with the least possible loss of time; but in chronic diseases, where there is no occasion to produce an immediate effect in this way, it is surely much better to trust to milder measures, the operation of which cannot do harm, if they should do no good. Indeed it appears to me that the whole plan of prescription

in chronic diseases stands in need of amendment; for the large doses of purgatives and other medicines, which we so generally give, frequently tend rather to increase than to relieve the symptoms, from the irritation and exhaustion which they produce.

In the preparation of artificial waters, impregnated strongly with sulphureted hydrogen, it will become a question whether the other ingredients should be added, which are found in the natural springs; but a little experience will soon enable us to decide this question, since if the sulphureted hydrogen alone should be found ineffectual, it would follow, that the rest are also required for the reduction of chronic inflammation or congestion. From the trials which I have made of the sulphureous waters in chronic inflammation and congestion, it has forcibly struck me, that they might be also serviceable in acute inflammation and congestion, conjointly with other measures of known utility; and it would not at all surprise me to find the sulphureted hydrogen gas hereafter ranked amongst some of our most efficacious agents, as well in acute as in chronic diseases. Measured by cubic inches, the Harrogate water contains about a twelfth part of sulphureted hydrogen gas, but considerably more than that proportion is in the Dinsdale; and in the common water impregnated with this principle, we might easily so regulate the quantities, as to make its operation vary according to the circumstances of

particular cases. Yet perhaps we are too much accustomed to suppose, that we can successfully imitate, by artificial means, the effects of mineral waters, because we detect such and such ingredients in them by analysis. It is highly probable, however, that these ingredients, or their elements, exist in certain combinations which we cannot imitate, and which are changed by our very modes of analysis; so that though artificial may approach in the operation to natural mineral waters, yet the latter will always perhaps be found to possess powers which human ingenuity can never communicate to the former. Some part of the efficacy of mineral waters may perhaps depend upon the simple principle of dilution; and to this principle is to be attributed most of the utility of such remedies as the decoction of sarsaparilla, which many so highly value. The effects of the common waters which we daily drink, is a subject deserving of more consideration than it has received. It would probably be found, on inquiry, that many complaints are connected with the substances which they contain. Why, for example, does the stone so much more frequently occur in some counties than in others? The state of the fluids may be affected, and thence of the solids, by our ordinary drinks; and it is not unlikely, that in this way ossification and similar affections of the arteries are sometimes produced.

The sulphureous waters, like many other things, have probably been neglected, because

they are openly presented to our observation, and appear exceedingly simple at first sight; but it seems to me, that the beneficent Author of our being has intended them for the advantage of mankind, how much soever they have hitherto been disregarded. The whole world around us is a spectacle of beauty or sublimity, the impressions of which upon our senses are fitted to promote our happiness in health; and is it at all unreasonable to suppose, that things have also been prepared to restore us from many of the sufferings of sickness? It is my firm opinion, that physic might be greatly advanced by a minute inquiry into the medicinal properties of those substances which are presented and prepared by nature; and as the subject is one of mighty interest to mankind, so it is to be expected, that it will not be overlooked in the prosecution of the chemical combinations of the present times. The consideration of the sulphureous waters alone suggests, that if one gas may be taken into the stomach, absorbed, and carried through the circulation with striking benefit, others also may probably be found which might be useful in various diseases; and as the inhalation of gases has hitherto only ended in disappointment, a different result may perhaps be anticipated from their employment in a different mode. But it is not this circumstance alone which strikes us in reflecting upon these waters, for the small portions of salts dissolved have active and excellent powers; and therefore we are naturally led to suppose, that we

should attend to the minute divisibility of many of the preparations in common use. The mineral springs which contain iron have only a very small portion of that metal suspended in them, and yet they are far more efficacious than the ferruginous preparations which we prescribe; and here we are again led to conclude, that our ordinary mode of administering this metal should be abandoned, and one substituted similar to that which nature has offered to our observation. There is a divisibility in the preparations of nature, which is unpractised in the usual combinations of art; and it would probably be well for mankind, if this divisibility were much more frequently imitated in medical prescriptions.

My principal reason for having thrown together some general remarks on chronic diseases, was to put the medical public in possession of the results of my experience concerning the sulphureous waters; but as, in the existing state of things, these waters cannot be recurred to by a numerous class of patients, I have mentioned the means most useful where such auxiliaries are not procurable. If, in objection to the general doctrine laid down concerning the nature of slow diseases, I should be asked, were they *all* uniformly marked by chronic inflammation or chronic congestion, I would certainly answer, that the most essential parts of those diseases *generally* consist in these two states. Yet it must be acknowledged, in the first place, that a disorder in the functions of some

of the important organs does exist for a considerable time, without unequivocal symptoms either of chronic inflammation or chronic congestion. From what cause, then, do these disorders of function arise? The progress of such affections generally shows, that they must at all events be closely connected with one or other of these morbid states, however latent or obscure; because if the disorder of function be not removed either by nature or by art, chronic inflammation or chronic congestion in time becomes manifest, and a foundation may therefore be laid for derangement of structure. Thus we have an almost evident proof, that even in the minutest of the capillaries, chronic inflammation or chronic congestion may long obscurely exist, and only come slowly into open view at last. What we usually call predisposition to a disease in an organ probably consists in a degree of preternatural accumulation of blood in the capillary vessels of that organ; so that when any constitutional shock comes to disturb the action of the heart materially, the mischief falls upon the part thus pre-disposed, because there the capillary circulation would be most impeded. Since the time of John Hunter, it has become the fashion in this country to explain all morbid phenomena simply by stating that they depend upon some *change of action*; but this word change of action is a general term without any precise signification, and is only calculated to conceal our ignorance from ourselves. If the term change of action be applied to the arteries and veins, its

application must be exceedingly limited, because the action of these vessels themselves is limited. The arteries seem to possess the vis resiliendi, or what might be mechanically termed *re-action*, the power of recoiling from the stroke of the heart, and they likewise seem to possess the property of accommodating themselves to their contents. This last property, which perhaps might be termed their irritability, the veins also possess in common with the arteries; and it is not improbable, that this property may be so impaired in certain states of the system as to allow the blood preternaturally to accumulate in them, and thus pave the way to many acute as well as chronic diseases. But mere change of action in a vessel, as above explained, will not account for all the facts which we daily observe in morbid deviations; and we must take into account the state of the fluids which circulate in, or are secreted from, these vessels, together with the conditions of the nervous system, before we can at all satisfactorily solve what we now call mere change of action.

But there is a state of the circulation, local as well as general, which has been confounded with inflammation both in acute and chronic diseases, and yet this state differs from inflammation. When it occurs locally it is marked by a change in the secretion of the part, as, for example, we may daily see in the investing membrane of the tongue in chronic and in acute complaints; and nevertheless, though we are fully satisfied that the part is

morbidly affected, yet we cannot pronounce that affection to be inflammation. When this state occurs generally, it is always accompanied with an increase in the action of the heart, and an increase in the animal heat, though the blood seems so equably distributed throughout the system, that no one viscus can be said to be more decidedly disordered than the rest; but even in this case there is a change produced in the secretions which alike attends the local as well as the general state of the circulation, though in the local there generally appears to be some topical accumulation of blood, which does not, however, amount to the measure of inflammation. Still, both in acute and chronic diseases, this local and this general state of the circulation may pass into inflammation, and in fact frequently does so, where it is not spontaneously or artificially removed; and hence, in both acute and chronic diseases, inflammation may arise at some period of their progress, though in the first instance they were not complicated with inflammation. At present we have no word in our language to mark this state as essentially distinct from inflammation; but as it occurs in many diseases, perhaps for want of a better, it might be discriminated by the term *simple excitement*.

Where disorder of function alone, as frequently occurs in the stomach and liver, marks the deviations from health, the sulphureous waters are exceedingly serviceable; for by reaching and searching the most minute ramifications of the ca-

pillaries, they remove the morbid condition of these vessels, which are so apt, on mechanical laws, to be the first seats of disease, from their immense number and tenuity. And where chronic congestion of the veins exists in combination with a real exhaustion of the heart, as we sometimes see in the inhabitants of large towns, the use of these waters, but particularly of the Dinsdale, is sometimes attended with the most striking benefit; as they contribute to communicate an energy to the whole muscular fibre, and an exhilaration to the spirits, which are never witnessed from the administration of ordinary means, under similar circumstances. In those long-continued diseases, where manifest proofs of disorganization exist, it is far too much the practice to prescribe long and severe courses of mercury, which in general, so far from doing any good, only hurry patients to the grave. In fact, all that we ought usually to attempt in such cases, is to lessen suffering, and to protract life; and for both of these intentions the sulphureous waters, with pure air, and occasional anodynes, will frequently answer the best purpose. It must be familiar to every person of experience how rapidly sometimes the general powers give way under a continued system of ordinary evacuation, even when chronic inflammation or chronic congestion is uncombined with any actual disorganization; and it is of great importance, that this truth should be constantly before the mind of the practitioner, lest he push his measures so far as to prejudice the patient while

he leaves his disease unsubdued. But the system of evacuation produced by mineral waters, when properly used, has none of these debilitating effects; and therefore it is a desideratum in physic to ascertain their powers more precisely than has hitherto been done, especially in slow diseases, which baffle the ordinary means. Chronic inflammation of the uterus may be ranked amongst the most formidable of those diseases, under some of its modifications; and it would be particularly desirable to ascertain whether the external and internal use of sulphureous waters would be serviceable, since many of the means usually employed hardly deserve the name of palliatives. It has been intimated to me, by one whose judgment I highly respect, that I have shown an attachment to particular remedies, but especially to sulphureous waters. In the history of medicine, nothing is more striking than the undue partiality which writers show towards certain agents which they have been accustomed to use; and it would be presumption in me to suppose, for a moment, that I am so far exempt from bias as to have escaped a common imperfection of human nature. In my future observations, however, I shall endeavour to take a cautious review of the influences of those measures which have been recommended; and if a more extended experience should convince me of any mistake, that mistake shall be acknowledged and corrected without hesitation. Yet so strong is my confidence of the efficacy of sulphureous waters in slow diseases attended with functional

disorder, that I could wish some of the intelligent practitioners who reside at the springs would collect and publish a series of cases in which those waters were employed. The simple recital of such facts would, I believe, teach a most instructive lesson to the medical world; for it would show that whatever yet may have been effected by mercurials and purgatives in chronic complaints, may often be more pleasantly and completely effected by these simpler means.

It will at once strike the accurate observer, that there are some diseases, which though they may be connected with chronic inflammation or chronic congestion, yet have something so peculiar in them, as to deserve the epithet specific; and among such remarkable affections may be mentioned, diabetes and cancer, the characters of which are so distinct, and the nature so obscure. In one, if not in both of these complaints, the fluids undergo changes, which have not yet been sufficiently regarded: and however we have neglected the humoral pathology in modern times, its investigation is really calculated to throw great light on some parts of medical science. Whether the sulphureous waters could be successfully applied to diabetes, cancer, and other diseases, which have hitherto been so unmanageable, must be left for others to determine: but certainly from their known efficacy in numerous diseases which resist ordinary measures, they deserve a fair trial in these peculiar affections; and the more espe-

cially so, since if they should not prove beneficial, they would at least be perfectly harmless.

Pathology and physiology are so intimately related, that the doctrines of the latter frequently extend their influence to the former; and it has appeared to me, that the progress of physic has often been retarded by physiological arrangements founded upon artificial distinctions. Perhaps the most natural order in which the functions of the body could be classed, would be into the vital, the mechanical, and the chemical. The vital functions are chiefly referrible to the brain, nerves, and spinal cord; the mechanical chiefly to the heart, vessels, and muscular powers; and the chemical chiefly to the fluids circulating in or secreted from the vessels. These functions have each their peculiar laws, and yet they are connected with each other. Perhaps in certain diseases, the vital functions are chiefly in fault, in others the mechanical, and in some the chemical. Yet so intimate is the relation between these functions, that in many acute and chronic complaints, they all seem to participate. Thus, for example, contagion primarily affects the vital functions through the nervous system, then the action of the heart and vessels becomes disturbed, and lastly the secretions undergo manifest alterations. Again, an irritation of some part shall be slowly produced, and exist some time without apparently exerting any influence on the general habit; but at length the irritation acts upon the heart, thence upon the ar-

terial system, and the secretions in like manner are finally changed. But the order here mentioned, as to the functions affected, does not always obtain, for the first deviation from health may be in the mechanical or the chemical functions, so that the vital may only be secondarily implicated. Any system of physic which, as such, shall make approaches towards stability, must comprehend each of these functions, with their respective influences, in a state of disease, upon the various tissues of the body; and it has been the error of most medical writers that some bias towards a favourite doctrine has prevented them from taking a comprehensive survey of morbid phenomena. There are yet some relations to be discovered between the nervous and vascular systems, which will materially change the aspect of pathology; and chemistry has also yet to reveal some secrets in the doctrine of the fluids by which we shall be led to important and useful changes in theory and practice.

THE END.

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