This small volume contains some things which, if not absolute novelties, are at least entitled to the character of giving new views of subjects already familiar. If the practitioner is summoned to a case in which he recognises, or thinks he recognises, symptoms of enteritis, he is not to use the lancet incontinently and precipitately; he is to pause and deliberate with himself whether this measure may be simply useless, or whether it may not prove to be highly prejudicial. The disease may be not intestinal inflammation, but intestinal irritation only. Such a patient may be bled until scarcely a drop remains in his veins, not only without relieving the symptoms, but with the effect of inducing others more serious. He may have severe headach, intolerance of light and sound, throbbing temples, a flushed countenance and general heat; his senses may wander, his intellects may waver; his pulse may be quick, his tongue foul, his thirst great; his hours of sleep may be converted into incessant and exhaustingrestlessness, or into short hurried slumbers, disturbed with frightful dreams, or alternating with hideous waking visions; but the evacuating system would, in such a case, either prolong and aggravate all his sufferings, or plunge him by a precipitate step into the grave. If this untoward event does not snap the chain asunder abruptly, another order of complaints may appear, to which the character of pleuritic or thoracic inflammation is allotted; and in this circle incessant changes will be rung, until the disorder has traversed every region and organ of the human body.

Again, if the advice of the medical attendant is requested to remove various ailments generally referred to the head, which may take place in the course of treatment for any disease, medical or surgical, or in the progress of convalescence, he must by no means, and on no account, treat them on the notion that they arise from inflammation or plethora of the vessels of the brain. After some sensations of chilliness, the patient may have headach, heat of the face and eyes, throbbing of the temples, ge-
neral heat of the skin, and perhaps some wandering pains in the chest, belly, back, or limbs. Yet with a pulse at 100 or more, a vein is not to be rashly and immediately opened; for this, though it might relieve some of the complaints, and render the pulse less strong, if it did not render it less frequent, would not operate on the primary seat of the disease, and consequently would fail in effecting its final removal. The complaints under which the patient is labouring is neither fever, phrenzy, local inflammation, nor rheumatism; and is not to be treated as either of these disorders are. It is merely intestinal irritation.

Further, in disorders truly inflammatory, and which cannot be removed without bloodletting, this remedy may be carried to an undue and injurious extent. Whether it is sufficient to subdue the original disease or not, a sudden and copious evacuation of blood from the veins may be followed by alarming and mortal weakness, or by the supervention of symptoms of disorder of the head, and disturbance of the functions of sense and intellect, so great as not merely to perplex the medical attendant, but threaten the life of the patient.

Lastly, a similar state of extreme weakness and languor may supervene in various diseases, of infancy, of manhood, or of old age; and where it was neither dreaded nor expected, a state of slow but certain failure of all the powers of the system and all the functions connected with them, may terminate gradually in apparent suspension of sensation, from which there is no recovery.

Is this a faithful and true delineation? Are these several forms of disorder, with the causes from which they are alleged to spring, actual existences, and not the creations of fancy? Is their truth established on the strength of facts too well authenticated to be doubted, too numerous to be regarded as anomalies or exceptions, and too simple to be the result of partial and mistaken observation? Are we to suppose that the characteristic distinctions of diseases have been so long unknown, so little understood, or so much overlooked as to be treated with improper or injurious measures; or is it to be imagined that the necessary limits within which the use of these remedies ought to be restricted, were so imperfectly defined, and so erroneously applied as to convert them into causes of disease?

Though these questions are naturally suggested by the first observations which occur in the Tract now before us, it is by no means easy to give them an immediate or satisfactory answer. By different individuals, also, they will be answered in different modes; some being disposed, we doubt not, to deny entirely the views given by Dr Hall; others though willing to admit them, yet
unable to see on what grounds they are to be explained; and some perhaps seeing in them nothing but the ignorance and carelessness of the observer, and the injudicious employment of the means of cure. How far either of these modes of viewing the subjects, to which Dr M. Hall has requested the attention of his professional brethren, may be correct, we know not, and must acknowledge our unwillingness to deliver a decided opinion; but that our readers may form some idea of the grounds on which Dr Hall has formed his conclusions, we shall proceed to give a short view of the three Essays which compose the present publication.

Intestinal irritation, the subject of the first Essay, is represented by Dr Hall as a disease hitherto undescribed in medical writings, and by no means understood in practice, or distinguished from other morbid affections of a very different nature. In many instances it appears with symptoms of the most acute phrenitis; in others, with those of intestinal or peritoneal inflammation; occasionally it assumes the symptoms of pleurisy; and accompanied with palpitation, it may suggest the idea of disease or acute inflammation of the heart. The general symptoms are said to be,—shivering more distinct than in cases of inflammation; afterwards heat of surface, with disorder of the head, chest, or belly, or of all together. There is headache, giddiness, and some morbid impression on the mind; panting and fluttering about the heart, with general hurry, irritability, and restlessness; the tongue is white and furred; the alvine evacuations are dark-coloured, foetid, and scybalous, or yellow like yolk of egg, or of the appearance of yeast; and the urine is said to be turbid, and frequently to deposit a copious sediment.

The more particular assemblage and distribution of symptoms may be stated in the words of the author.

"The affection of the Head consists of the most acute pain, the greatest intolerance of light and sound, and the severest form of vertigo, wakefulness, and distress, and sometimes even delirium, and the pupils of the eyes are often extremely contracted.

"The affection of the Chest is denoted by severe and acute pain of some part, which is apt to vary its situation, passing from one side to the other, or to the back, or occupying a situation higher up or lower down; this pain checks a deep inspiration, and even the ordinary breathing, to which it imparts a character of difficulty and anxiety.

"When the Abdomen is affected, there are acute pain, and great tenderness under pressure, in some part, or more or less generally diffused. The attack and situation of the pain is such, in some in-
stances, that the case is with difficulty distinguished from gall-stones, though it more generally resembles enteritis.

"When the Heart is the seat of this affection, there are violent and terrific attacks of palpitation,—and the course of the carotids, and even of the abdominal aorta, is sometimes the seat of violent pulsation or throbbing."

The foregoing description is however insufficient to establish a well-marked difference between the symptoms which arise from inflammation or congestion in the head, chest or belly, and the effects to which Dr Marshall Hall alleges intestinal irritation may give rise in these several regions of the body; and it is manifest, that it would be extremely difficult to draw the line of distinction in any given case between an attack of phrensy, of pneumonic, pleuritic, or cardiac inflammation, and of peritoneal or enteric inflammation, and this disorder, alleged to be of a very opposite nature, and ascribed by the author to intestinal irritation. With the view of removing this difficulty, Dr Marshall Hall draws a very elaborate diagnosis, the following extracts from which it is absolutely necessary that our readers study with attention.

"The affection of the Head from intestinal irritation comes on suddenly, is formed all at once, and is attended by great restlessness, suffering, and distress. In phrenitis, the disease is usually formed somewhat more gradually; the patient has been subject to pain of the head perhaps for some days or even longer; he complains less; or at least there is less urgent distress,—less distress of a general kind; the pain may be very severe, although it is more frequently rather obscure; the intolerance of light and sound is less urgent; the rigor, and subsequent heat, and the attack in general are less marked; the patient is not so soon relieved by remedies, and the tongue and alvine evacuations are less morbid. In the attack of affection of the head from intestinal irritation, the patient is relieved perhaps completely if the lancet be employed, but the attack soon recurs with equal or greater violence; in phrenitis, the relief is seldom so complete, the interval of ease so long, or the return so marked,—the pain is diminished, perhaps, but gradually resumes its former violence, unless active measures be interposed.

"When the Chest is affected from intestinal irritation, the pain is severe and acute, and increased by a full inspiration. If the inspiration be repeated, however, a second and a third time, the increase of the pain is less and less; the situation of the pain varies; there is no cough,—and no crepitus on making a full expiration. In all these respects the case differs from inflammation. The remarks already made respecting the relief from remedies, the tendency to a sudden recurrence of the pain, &c. in cases of affection of the head, apply equally here.

"I had long remarked that there might be both acute pain and
tenderness under pressure of the abdomen, without inflammation. This state of things is frequently the result of intestinal irritation. It is distinguished from inflammation by the general symptoms of this affection,—the mode of attack,—the effects of remedies. In inflammation, the surface is usually cool, the head unaffected, the patient remarkably quiet. In the case of intestinal irritation, on the contrary, there is generally much heat after rigor, the head is much affected, and the patient is restless and generally distressed, the tongue is loaded and perhaps swollen, the alvine evacuations are extremely morbid, and great relief is obtained by the free operation of medicine."

We know not whether these extracts will enable our readers to form any idea of the views of Dr M. Hall, or to perceive what this physician understands by the disorder to which he applies the name of intestinal irritation. If they do not, we must refer them to the cases adduced by the ingenious author in support of his opinions; and request them to compare these cases with such as have fallen within the range of their own observation.

The first of these cases, which did not occur in the practice of the author, is one in which the medical attendant took the symptoms successively for those of enteritis, inflammation of the brain, abdominal inflammation, and lastly pleurisy, and treated them in each of these forms by the usual depleting remedies,—always with the effect of controlling their violence and effecting their removal. This case, Dr Marshall Hall thinks he has reason to regard as an instance of "intestinal irritation, and of its effects on several organs in succession." But where is the proof of this, it may naturally be asked? Does the case itself suggest any circumstances which must be admitted as unequivocal evidence of the correctness of this opinion? It does not; and the only reason which the ingenious author assigns for his hypothesis of its pathology, for to this name only is the opinion of Dr Hall entitled, is founded on the phenomena and results of the other cases which he records. Upon looking somewhat narrowly into these, we think we have some reason to offer certain observations on them.

The first of them, which is the second in the list, is one which the author himself admits to have presented the appearance of peritoneal inflammation. The symptoms were so severe as apparently to demand the repeated employment of the lancet, and the application of leeches, so that the patient lost about thirty-five or forty ounces of blood; and the bowels were freely moved, when it is said "the stools were very fetid." All the symptoms were removed on the third day, and every thing promised a speedy and secure convalescence. Early on the succeeding day,
however, Dr Hall received an urgent request to see his patient.

"She had been seized with severe pain of the head, especially over the eye-brows, attended by beating and throbbing, and by the most urgent intolerance of light—so that the eyes could not be opened for a moment for examination; the pain was increased on attempting to sit up erect; the countenance was palish and sallow; the pulse full and frequent; there was no faintness or sighing." pp. 9-10.

A draught with thirty drops of laudanum and of the aromatic spirit of hartshorn was prescribed, and in the course of an hour and a half the patient who had enjoyed some comfortable sleep, was able to bear the light, suffering much less pain, and in every respect better. The bowels were then freely emptied, light nourishment was given, and the anodyne aromatic draught was administered, while a cold lotion was applied to the head. Under this management the recovery was progressive and uninterrupted.

Dr Marshall Hall has the candour to acknowledge, that he now thinks this case was at first mistaken for enteritis, and that the treatment by the lancet and local bleeding was unnecessary; and he expresses great astonishment that the symptoms of the second or head attack, simulating phrenitis, were removed without the lancet by the exhibition of an ammoniacal anodyne draught. We, in our turn, must be excused if we express our astonishment that it should have been otherwise; and we see nothing more in this case of peritoneal inflammation, termed by Dr Hall intestinal irritation, than what we have seen in many other inflammatory diseases after copious detraction of blood. It so happens, that we can adduce, besides others, a case so completely in point, that we cannot refrain from mentioning the facts of it very shortly. In June 1822, when peritoneal inflammation was still prevailing in this city, we were requested to see a stout plethoric woman, who had been delivered the day before by a midwife of a healthy child. When we reached the house, the woman was still in the rigor or fit of cold shivering with which she had been attacked, and by the occurrence of which she had been much alarmed. She complained of no local uneasiness, unless what resulted from the sensation of cold. An opiate was given, warmth was applied to the extremities, and to the pit of the stomach, with the apparent effect of alleviating and shortening the shivering fit; and she was ordered to take half an ounce of castor oil as soon as the heat of the system was re-established, which took place about twelve at noon. In the afternoon, she had pain of the belly, most uneasy and severe in the umbilical and hypogastric regions,
aggravated by coughing and pressure, and with a good deal of tension. The skin was hot, the tongue furred, the thirst was intense, the temples throbbed with headach, and the pulse was 122, and sharp. Forty ounces of blood were drawn from the arm quickly, and in a full stream, which induced first paleness, and then very transitory fainting, and a draught was given her with forty drops of laudanum. The pulse had not been rendered much slower. The following day (June 30th, 1822), after sound sleep, and the bowels being freely opened, the pain of the belly was much relieved, but the pulse was still very quick; and in the afternoon of that day, though she had no pain since morning, coughed and bore abdominal pressure in every point without uneasiness, yet the pulse was 120. The only favourable signs were in the skin being cooler, the tongue more moist, the thirst less, and the headach entirely gone. During the night, she was disturbed by some noisy neighbours about eleven; and the effect of this was a violent and complete fit of spectral delirium. She raved, complained of frightful and threatening figures; and, after about an hour or two of incessant restlessness, she fell into a disturbed uneasy sleep, from which she awoke in the morning with a hot skin, flushed face, and a wild look, furred tongue, immoderate thirst, not a little headach, some remains of delirium, and a pulse at 120. As she had no abdominal pain, however, the lancet was never thought of; the quantity of bed-clothes was diminished, cold was applied to the head, a draught containing fifty drops of laudanum was administered, with the effect of rendering her much calmer, and inducing steady and refreshing sleep. At noon, when she awoke, the pulse was down to 104, and in the evening to 96, and no trace either of delirium or any other complaint of the head remained. Her convalescence from this was regular and uninterrupted.

Of cases like this, it is not easy to explain the theory; but they are so common, and so well understood in practice, that we always imagined the treatment to be well established. The copious blood-letting is sufficient to empty the large vessels, probably many of the small ones, and to act on the system at large; but it neither renders the contractions of the heart less frequent and numerous, nor produces that effect upon the secreting and excreting capillaries, which is necessary to the establishment of the healthy state of the circulation. By some it has been said, that this imperfect and partial effect of blood-letting consists in local congestion; and they accordingly ascribe all the alarming sensations which take place in the head, and in the organs of sensation and intellect, to congestion of the venous system of the brain. It is possible, that something of
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this kind may take place; but, as drawing blood from the venous system seems a paradoxical method of producing fullness of that system, there must be some other circumstance or condition of the capillary circulation particularly, of which we are not aware, and which we do not perfectly understand. It would lead into too extensive a field of discussion to enter more largely on this topic; and we must be satisfied with referring our readers to what we have said in another article on the subject of delirium tremens, to which we are disposed to think the condition of the system alluded to by Dr Marshall Hall bears a close resemblance. That condition consists not in intestinal irritation, but in irritation of the capillary system.

In the third case given by our author, that of Mr Oldknow of Nottingham, we see nothing very singular or difficult to explain. The symptoms which this gentleman began to suffer on the sixth day, after the operation which he had undergone, and which are very distinctly and satisfactorily narrated in his own language, are neither more nor less than the constitutional disorder arising from the state of the wound, and its approach to suppuration. They were somewhat tardy, we admit; but there is so much variation in the time at which such symptoms begin to be fully formed, in the shape which they assume, and in the severity which they attain, that their peculiar appearance in the case of Mr Oldknow, ought to be the source neither of wonder nor of difficulty to any one who is moderately conversant with such cases. The treatment throughout was highly proper, not only by the patient himself, or his surgeon, but by Dr M. Hall afterwards; but had they changed situations with each other—had Dr Hall's "nourishment, volatile salt, and copious enema" been administered at the time when the blood-letting and evacuating system was adopted, either the cure would have been more tedious than it was, or such a termination might have occurred, as would have rendered nourishment, volatile salt, and all the pomp and circumstance of prescription unavailing. It was the previous depletion which gave to the remedies of Dr Hall their salutary effects.

Nor does the fourth case merit very particular attention as illustrative of the soundness of the theory of Dr M. Hall. The patient was in the fourth month of pregnancy, and habitually costive; and surely it is almost superfluous to remind any one practically acquainted with the disorders incident to women in this state, of the variable forms which they may assume. The question of the nature of the disorder in the present case lies in a narrow compass. The patient had repeated attacks of head-ach, throbbing of the temples, pain and tightness of the chest, and hurry of breathing, with occasional palpitation and cough.
The state of the pulse is not mentioned. But for these symptoms she lost blood repeatedly, took aperient medicine, the blue pill, had blisters applied, and took tincture of foxglove; all without effect it is said. Ten days after the first accession of her complaints, Dr M. Hall found her with pain, throbbing and heaviness of the head, contracted pupils, and intolerance of noise or any sort of disturbance, palpitation of the heart, and a sense of mortal faintness; tightness of the chest, oppressed breathing, and a peculiar tracheal cough; some pain in the region of the womb, but without vaginal discharge; foul, dark tongue, and pulse at 120, and the alvine discharges procured by medicine scybalous, and dark-coloured, afterwards yeasty and offensive.

"I was forcibly struck by a general but marked resemblance of this case, to those already given, and to others of the same nature, which I had witnessed;—the depleting already fully adopted and repeated had proved ineffectual in affording relief; the purgatives hitherto given, were, I believed, inefficient. The plan I proposed was to give efficient purgatives,—to restrain their operation by draughts with tinctura opii and spiritus ammonie aromaticus,—to support the strength by means of nourishment given every hour or oftener,—to procure sleep by anodyne enemata,—to guard against exertion or fatigue,—noise or disturbance. The recovery was uniformly progressive."

The whole matter then resolves itself into this question. Did the complaints above enumerated arise from the plethoric state incident to pregnancy, or from a disordered condition of the intestinal canal and of the alimentary function, or from both causes taken together? We presume it can require no long deliberation to reply, that this last circumstance was the true origin of the symptoms, which Dr M. Hall here ascribes to intestinal irritation solely and exclusively.

The fifth, sixth, and seventh cases, which complete the list, present nothing peculiarly demanding inquiry or attention; and if the curiosity of our readers be not gratified on this point, we trust they will have patience to peruse the ingenious Essay itself, which is destitute neither of interest nor instruction.

Upon the whole, though we deny not the frequency of disorder of the intestinal canal, and the influence which it exerts in inducing some diseases and modifying the appearance of others, we cannot agree with the opinions of the author of this Essay, in ascribing to it the effects which he alleges to have arisen from this cause in the cases now adduced. We have seen these effects so frequently in many different and well-marked diseases, that we have no hesitation in ascribing them, not to intestinal irritation, but to a peculiar state of the capillary system, arising from great and sudden loss of blood, just before that change has taken place, whatever it may be, which re-establishes the balance.
and equal distribution of the circulation. This state consists not in inflammation; for there is no proof of the existence of this; but in capillary irritation, if it may be so called. We have seen it after copious blood-letting, for the cure of pneumonia, for that of enteritis, and for that of rheumatism; we have seen it in a slight and transitory form after blood-letting, carried to a considerable extent for the removal of dropsy; and it is no long time since we saw a very well-marked example of it, where large and repeated venesection had been rendered indispensable for controlling a severe attack of rose of the head and face. Yet this condition, so alarming, we have almost invariably and uniformly seen disappear under the use of large doses of opium.

The subject of the second Essay, on the effects of loss of blood, is not less important, and is if possible more difficult. Dr Marshall Hall is however mistaken when he asserts that it has escaped in a great measure the attention of physiologists, and of the practical physician. Haller has left a valuable memorial of the attention which it has claimed, in a physiological point of view, in his Essay and his anatomical experiments De Motu Sanguinis. * Frederic Hoffmann, more than a century ago, wrote on the use and abuse of blood-letting; and scarcely a year elapses without some treatise or essay on the pernicious extent to which blood-letting may be carried, as a remedy in the treatment of diseases.

The Essay of Dr M. Hall embraces a pretty wide field of discussion. He first inquires into the immediate effects of loss of blood, as fainting, and the ordinary reaction. Secondly, he considers the remote or cumulative effects of loss of blood, such as exhaustion with or without reaction, exhaustion with defective reaction, and exhaustion with that peculiar state which is termed by medical observers sinking. In the third part of his Essay, he takes a view of the effects of further loss in cases where it has already produced exhaustion. In the fourth place, he inquires into the influence of age, of disease, of temperament, &c. on the effects of loss of blood; and he concludes his Essay with a short sketch of the effects of loss of blood on the internal organs, as the brain, the heart, the lungs, the intestinal canal, &c. Without attempting to follow our author over this wide and extensive field, we shall confine our present observations to one or two topics only.

The first and most important effect resulting from great loss of blood, which we regard it of importance to remark, is that

* Alberti V. Haller, Opera Minora, Tom. I. Lausanna, 1762, Caput V. p. 212.
which is described by Dr. Marshall Hall in the following terms, under the denomination of reaction.

"The phenomena are very different, if, instead of one full bleeding to syncope, or of a profuse hemorrhaghy and even protracted syncope, the person be subjected to repeated blood-lettings or to a continued drain. In this case, within certain limits, the pulse, instead of being slow and feeble, acquires a morbid frequency and a throbbing beat, and there are, in some instances, all the symptoms of excessive reaction of the system, which it is my object now to describe.

"The state of excessive reaction is formed gradually, and consists, at first, in forcible beating of the pulse, of the carotids, and of the heart, accompanied by a sense of throbbing in the head, of palpitation of the heart, and eventually perhaps of beating or throbbing in the scrobiculus cordis and in the course of the aorta. This state of reaction is augmented occasionally by a turbulent dream, mental agitation, or bodily exertion. At other times it is modified by a temporary faintness or syncope.

"In the more exquisite cases of excessive reaction the symptoms are still more strongly marked, and demand a fuller description.

"The beating of the temples is at length accompanied by a throbbing pain of the head, and the energies and sensibilities of the brain are morbidly augmented; sometimes there is intolerance of light, but still more frequently intolerance of noise and of disturbance of any kind, requiring stillness to be strictly enjoined, the knockers to be tied, and straw to be strewed along the pavement; the sleep is agitated and disturbed by fearful dreams, and the patient is liable to awake or be awoke in a state of great hurry of mind, sometimes almost approaching to delirium; sometimes there is slight delirium, and occasionally even continued delirium; more frequently there are great noises in the head as of singing,—of crackers,—of a storm,—or of a cataract; in some instances there are flashes of light; sometimes there is a sense of great pressure or tightness in one part or round the head, as if the skull were pressed by an iron nail, or bound by an iron hoop.

"The action of the heart and arteries is morbidly increased, and there are great palpitation, and visible throbbing of the carotids, and sometimes even of the abdominal aorta,—augmented to a still greater degree, by every cause of hurry of mind or exertion of the body, by sudden noises or hurried dreams or wakings; the patient is often greatly alarmed and impressed with the feeling of approaching dissolution; the state of palpitation and throbbing are apt to be changed, at different times, to a feeling of syncope; the effect of sleep is in some instances very extraordinary—sometimes palpitation, at other times a degree of syncope, or an overwhelming feeling of dissolution; the pulse varies from 100 to 120 or 130, and is attended with a forcible jerk or bounding of the artery.

"The respiration is apt to be frequent and hurried, and attended with alternate panting and sighing; the movement of expiration is
sometimes obviously and singularly blended with a movement communicated by the beat of the heart; the patient requires the smelling bottle, the fan, and fresh air.

"The skin is sometimes hot; and there are frequently general hurry and restlessness.

"In this state of exhaustion, sudden dissolution has sometimes been the immediate consequence of muscular effort on the part of the patient." pp. 42-44.

This description is so accurate, and on the whole so faithful, that few, we believe, have had occasion to practise their profession for a very short time even, without meeting with some examples which could amply confirm the statements of Dr M. Hall. In support of the general accuracy of the description, two very good cases are given, which may be perused by such of our readers as require this confirmation. In short, the existence of this state after extreme loss of blood must be admitted. There is one difficulty, however, attending it, and that is the doubt which naturally suggests itself as to the true cause on which it depends;—viz. whether it is the mere effect of loss of blood, or of some modified form of the disease for which the blood-letting was considered necessary. It is to be remarked, in the first place, that this disordered state of the system and of the functions does not take place invariably after great and repeated evacuations of blood; secondly, that it may take place without bearing any proportion to the quantity of blood taken, or to the frequency with which it has been taken; and, lastly, that in cases in which recovery does not eventually take place, the remains either of the original disease, or of some similar one, is found to have terminated the existence of the patient.

Thus a man is treated for pneumonia, enteritis, or some other acute disease, by copious venesection, repeated perhaps according to circumstances. The immediate and urgent symptoms are relieved, or disappear; but convalescence does not follow. Though there is neither local pain nor very marked disorder of the functions, the pulse continues quick, the skin dry, the appearance pale, the person weak and emaciated; and all the symptoms of a chronic inflammatory disorder are fully established. Some, it may be said, would regard this as hectic fever; it is so; but hectic fever is in all instances, and without exception, symptomatic; and it remains yet to be shown, what is the line of distinction between the incipient stage of the state of the system to which we now allude, and that to which the author before us applies the name of reaction, or exhaustion with reaction.

We regard it therefore as exceedingly doubtful what may
be the true theory of this state of exhaustion with reaction. Dr Hall thinks it plain, that "the state of sinking involves a greatly impaired state of the functions of all the vital organs, from defective stimulus, and especially of the brain;" and he infers that the respective disorders of the several functions all denote an impaired condition of the nervous energy. He further compares it to the state of the functions in apoplexy, and to the effects observed on abstracting the influence of the brain and spinal marrow, by dividing the eighth pair of nerves, or destroying the lower portion of the latter organ.

When we assert that this is not satisfactory, we believe it will not be requisite to prove that it is liable to this objection. Nor will our readers find much difficulty in admitting that the theory which assigns the same state to the brain during apoplexy, and after its vessels have been unduly drained of blood, is not likely to rest on a very solid foundation.

We have already adverted to the resemblance between this condition of the system and that which takes place in certain forms of inflammation, which we conceive to be chronic. This similarity is admitted by Dr Marshall Hall in his remarks on the effects of the further loss of blood in cases of exhaustion; but he contends that the resemblance is apparent only, and falacious; and is liable to lead, if practically acted on, to most fatal errors.

"The symptoms of exhaustion with reaction have, I am persuaded, frequently been mistaken for those of inflammation or other disease of the head or of the heart. Under this impression recourse has frequently been had to the further detraction of blood by the lancet. And the effect of this practice is such as greatly to impose upon the inexperienced,—for all the symptoms are perhaps fully relieved.

"It was some time before I could fully comprehend the nature of this fact. I had satisfied myself that, in certain cases, the symptoms were those of loss of blood; and yet it appeared no less certain that those very symptoms were relieved by the lancet. At length I discovered, by a careful observation, that the symptoms which were relieved were those of reaction; and that the mode of relief was by the substitution of syncope; that the relief endured as long as the state of faintishness continued, but returned as this state gave way to the rallying and reaction of the vital powers.

"Another circumstance equally interesting and curious was, that within certain limits, the remedy which relieved for a time, eventually only added to the severity of the malady, for that this was apt to return after a certain period, in a still more aggravated form. It is natural, indeed, to suppose that, unless there was a tendency to the failure of the vital powers, the reaction of the system and the painful circumstances attending it, would be greater after a third or fourth loss of blood, than after a first or second; indeed there are..."
seldom the symptoms of reaction after one flow of blood, however
great or profuse; it is the repetition or protraction of the cause
which, as I have already observed, is essential to produce this ef-
fact.” pp. 56-58.

The truth of these observations, and of those on the ultimate
effects which may take place if blood continues to be detracted
from the system in such a state, is clearly and forcibly illustrated
by four cases, in the two last of which repeated and irresistible
fits of fainting soon led to the fatal event. It would have been
desirable to know what was the state of the several internal or-
gans after death in these cases; as this would have obviated at
least one source of fallacy. We would not insinuate that the
loss of blood was wholly unconnected with the fatal termina-
tion; but when it is remembered how many circumstances
may concur, to induce the fatal termination in diseases for which
copious blood-letting is requisite, it may safely become a ques-
tion of some consequence, whether this evacuation was so much
to be blamed. In another view of the case, the evil effects
that result from carrying a powerful remedy to an extreme length,
will be no argument against its moderate and judicious employ-
ment. Under all circumstances, though the effects of extreme
discharges of blood cannot be denied to have a tendency in the
mean time to impair the general strength, yet the physiologist
has still to regret the want of a series of accurate and precise
experiments on brute animals, and facts illustrated by dis-
section in the human subject, in order to form any correct
theory of their mode of operation, and to apply such a theory
to explain the phenomena of any given case.

In that part of Dr Hall’s Essay, in which he inquires into the
influence of various circumstances on the effects of loss of blood,
the reader will find some interesting observations, which per-
haps, however, savour a little too much of hypothesis. At
least there is the same tendency, which we have already re-
marked, to draw general conclusions without a suitable collec-
tion of well established facts. It may indeed be answered to this
objection, that the subject does not well admit the application
of very precise measurement; for when an author reasons about
the comparative susceptibility of infancy and of old age, and
of strong and of feeble constitutions, it is not very easy to ex-
press in accurate or well defined terms, the relation which they
mutually bear to each other. This objection, however, will not
apply with equal justice to the nice and delicate distinction
which the author draws between the comparative, or rather op-
posite susceptibility to the phenomena of reaction furnished
respectively by inflammation, and the condition formerly de-
scribed under the name of intestinal irritation. The latter he
represents as particularly apt to lead to the phenomena of reaction;—to the former, he ascribes the power of protecting the system against this unmanageable state of disorder; in a state of intestinal irritation, throbbing is sooner induced unless its accession be prevented by a state approaching to syncope;—during the existence of an inflammatory disease, on the contrary, blood-letting is followed by little reaction, until the local inflammation is subdued, and the system is freely exposed to the uncontrolled influence of the loss of blood; and he contends that the phenomena of reaction assimilate readily with the constitutional effects of intestinal irritation, but are to a certain degree incompatible with those of inflammation.

All this may be very well, so long as we keep a general and distant view only of the supposed consequences of blood-letting, carried to a great extent, for the removal of visceral disease. But when we come to take a close and narrow inspection of the state of matters, we find that the facts supposed to afford the conclusions are few and imperfect, and that it is by no means easy to reconcile the conclusions with the facts which are well established and generally known. In the first place, we can assert, from personal experience, that we have seen all the phenomena of what is here termed morbid reaction take place after the prominent and perhaps the superficial signs of local inflammation had disappeared, but where longer observation showed that a chronic inflammatory action was still left; and if our single testimony be not corroborated by that of many of our readers, we request them to peruse some of the cases of Broussais and of Laennec. In the second place, we can also assert, from personal observation and experience, that we have seen all the phenomena of morbid reaction, in cases where it could not be traced to disorder or irritation of the intestinal canal; and where even Dr Marshall Hall would not say that the purging had been inefficient. Thirdly, and lastly, we have had more frequent occasion to ascribe these phenomena to the blood-letting being practised either too late in the disease, or in too small quantity;—to too early a return to nutritious food;—or to too early and imprudent exposure to the remote causes which had originally induced the disease;—than either to the misapplication of venesection, or to the great extent to which it was carried. The proof that this was correct, was found in the alleviation or disappearance of these symptoms of reaction, on withdrawing the unfavourable change of food, and preventing the operation of the injurious agents.

We will not conclude our remarks on this second Essay without expressing the hope that Dr Marshal Hall will not fail to redeem the pledge given in the close of it, to investigate the
organic effects, and especially the remedies of loss of blood, by a series of experiments.

In the third and last Essay on Exhaustion and Sinking from various Causes, Dr Marshall Hall treats of this subject, in relation, first, to infancy or early life; secondly, to old age; thirdly, to several diseases; and, fourthly, to certain causes of exhaustion.

On the first of these divisions of the subject, the matter is simple enough. Every one knows that even of good things we may have too much, and of none more than medicine. It must be superfluous surely to say, that even useful remedies may be carried to a greater extent than is either expedient or requisite; and that it is not absolutely impossible to die of the doctor. Such a consummation, though most devoutly to be deprecated, there is reason to fear may happen, and perhaps does happen more frequently with infants than with any other of the categorical individuals of the human race. It is at this time of life that many of the actions of the living body are most excitable, most readily deranged, or most easily adjusted. A very slight and trivial cause may beget most potent effects; and the resources of the system are so great, and so various, and so inexhaustible, that some of the worst and most serious of these effects may be counteracted by means, the existence and power of which were equally unknown and unthought of.

Impressed with these circumstances, we are not surprised at the picture which the author before us draws of the state of exhaustion in early infancy, of the state of extreme weakness and irritability consequent on bleeding for croup, or on the unexpected effects of a violent cathartic; nor at the beneficial influence resulting from the exhibition of brandy. But as even the case in which this stimulant was administered, did not recover, and as no light is thrown on the original disease, (bowel complaint), or on the alleged injurious effects of the treatment, by dissection, we are quite as much in the dark as ever about the actual cause of death. The case of scarlet fever, we must be excused from saying, is most improperly placed in this section; for it is manifest that the infant died of the disease and its consequences, not of any treatment pursued, or any remedies administered.

With the subject of exhaustion, or sinking in old age, our readers are already familiar, by means of the Essay of Sir Henry Halford, or the Climacteric disease, in the fourth volume of the Transactions of the College of Physicians;* and from this Dr M. Hall has adopted part of the description. Of this Climacteric disease we know not well what to say; for if we say

*Transactions, vol. iv. pp. 318-320.
what we think, we may, by possibility, offend the learned President of the Royal College, and, through him, the College at large; and if we shape our opinions to our dutifulness, then are we no true men, but time-servers, and worshippers of the fashion of the hour, and offering a sacrifice of truth on the altar of authority. We shall simply ask a question:—Does this Climactic disease never depend on affection of some internal organ? Does it consist of symptoms merely without a cause? At a more convenient season we may speak of this matter.

On the subject of sinking in certain diseases, Dr Marshall Hall has done little more than give the interesting observations of John Hunter on dissolution; * and as this may be perused in the work of that author itself, we hold it no part of our duty to stay further question. We cannot quit the subject, however, without remarking, that we see no ground for the refined distinction which Dr Hall attempts to introduce in talking about the sinking state, or the final and fatal termination as it appears in typhous fever and enteritis, dysentery, cholera, and pneumonia. All diseases, if not opposed by seasonable and powerful checks, natural or artificial, are liable to terminate in death; and though, physiologically speaking, it is a matter of curiosity to know in what manner death takes place in each, yet we do not see how this point is to be settled, by ascribing it, in general and sweeping terms, to the process of sinking, as it has been named.

Upon the whole, these brief Essays contain much curious matter of reflection and inquiry, and should be perused by all professional readers. We must say, however, that they are greatly too hypothetical; and what is more dangerous still, their hypothetical parts have, in our opinion, not a very good tendency. They may give rise to fears about the use of the lancet and the depleting system in general, which, we doubt not, will produce more harm than all the good likely to result from them. This, however, seems to be the fate of medicine as a theory, and as an art. From one extreme we vacillate to another; this year blood-letting to a prodigious and unheard of extent is practised in all diseases indiscriminately; the next it is denounced as a perilous and pernicious mode of practice. It is not enough to quote the old advice, medio tutissimus ibis. It is requisite to remember, that no remedy will prove a remedy, unless when used seasonably and judiciously. The physician who would find the truth, must avoid slavish imitation, and keep his mind unbiassed by the sophistry of partial conclusions from equivocal facts, and unseduced by the impetuous torrent of daily fashion.

* Hunter on Inflammation, pp. 504, 506, 507.