

Boerhaave has said, that the strength is not easily reduced by evacuations, in the commencement of febrile disorders; and if this observation be more particularly applied to those procured by purgatives, it must be allowed to be most correct; the debility caused by their repeated operation being far less than might have been previously supposed, and trifling when compared to the general good which they produce. The world is greatly indebted to Dr. James Hamilton, senior, for having so firmly established the usefulness of aperient medicines, which, notwithstanding the testimonies of some ancient and modern physicians in their favour, were either thought pernicious, or not generally admitted in contagious fevers, before the publication of his work,* than which none perhaps of greater value has appeared in the medical republic, since the days of Hippocrates. For by it the author has not only fixed the treatment of many important diseases on incontrovertible principles, but overthrown some pernicious theories, opened new views for future inquirers, and, like Bacon, pointed out the way by which they may be most successfully explored. But as no human performance was ever yet perfect, so the defect of Dr. Hamilton's work, in regard to febrile diseases, is that he has not marked with sufficient minuteness the stages and conditions in which purgative medicines ought, and also those in which they ought not be employed; for however appropriate *purgatives* may generally be to the stage of excitement, yet when that of collapse approaches, they may often be followed by a fatal exhaustion, and those milder medicines called *laxatives* are then mostly preferable, as shall afterwards be made evident.

Seldom less than four or five alvine evacuations should be daily procured, during the stage of excitement in tolerably robust subjects; and as the bowels, for the most part, are then preternaturally torpid, pretty full doses of medicines should be exhibited, that no time may be lost in the repetition of small and ineffectual ones. In the commencement and whole

* Observations on the Utility and Administration of Purgative Medicines in Several Diseases.

course of typhus, it sometimes happens, that the bowels are in an apparently lax state: but if the evacuations be carefully inspected, they will almost always be found very fetid and mud-coloured, or slimy, chopped, and scybalous; and therefore aperients are indispensably requisite, to remove the abdominal irritation, of the existence of which such stools afford the strongest presumption (13).

Purgatives seem beneficial, by unloading the intestines of feces and excrementitious matters, which, when retained, excite and keep up much general irritation. But is it not exceedingly probable, that they have another and far more salutary effect, in restoring healthy secretion, and in removing irregular distributions of blood from the head, liver, and other vital parts? The full operation of aperients sometimes reduces the morbid heat of the skin, and the morbid force of the pulse, almost as effectually as the affusion of cold water or venesection;—consequences which surely indicate, that their action extends further than the mere removal of fecal matter from the intestinal canal. In truth, a simple *laxative* will be found to effect little in the first stages of fever, when a brisk *purgative* produces the most unequivocal advantage; a demonstrative proof, in my opinion, that the benefit resulting is not altogether from the mechanical dislodgement of the feces, as the excellent author of the above work on purgative medicines seems inclined to suppose. Yet I believe that purgative medicines are also beneficial by preventing, through their operation, the absorption of the morbid secretions and excrementitious matter of the intestines: for when these have been allowed to be retained in typhus, I have generally observed a considerable increase of irritation, with an offensive odour from the lungs and from the skin; and on the contrary, when

(13) This excellent observation, and the rule drawn from it will be confirmed by the experience of every physician who has seen much of typhus fever. The test of its correct application will be found to be the improved appearance of the stools after the use of purgatives. This exemplifies the remark made by Dr. Armstrong in the ensuing paragraph, that purgatives, besides unloading the intestines, have the salutary effect of restoring their healthy secretion.

the morbid secretions and excrementitious matter have been regularly evacuated there has mostly been a diminution of irritation, with an absence of this peculiar odour.

My observations on the qualities of febrile urine have not led to any practical results of consequence. Having, however, often remarked an alarming increase of the pyrexial symptoms from a retention of urine, I cannot refrain from suggesting, that practitioners should make a point of ascertaining whether the patient passes it every day in sufficient quantity; and they should not allow themselves to be deceived, when it constantly dribbles away, for while that is the case, the catheter in general is absolutely necessary,—not to mention the great attention which is then requisite to prevent excoriations of the perinæum or adjacent parts. But if the bowels be kept open from the beginning, a complete or partial retention of urine will hardly ever be witnessed in typhus, or indeed in any other fever. It may be commonly remarked, in febrile complaints, that where a small quantity of urine is secreted, the sediment is proportionably copious; and, on the contrary, where a large quantity is secreted, the sediment is proportionably scanty. A long retention of urine in typhus is commonly an indication of some disorder in the brain or spinal cord.

Perhaps the period is fast approaching, when diffusible stimuli will be universally prohibited in the earlier stages of almost all ardent fevers. It may be laid down as a principle, that they are very detrimental in typhus during the stage of excitement; and upon this point I can speak with much confidence, having not only frequently seen the baneful effects of their exhibition, but the salutary change which has followed their abstraction. It would be quite as rational to give a half intoxicated man a tolerably free allowance of ardent spirit with a view to make him sober again, as to attempt to restore at this time, a typhous patient, by the administration of wine; for he may be said to be in some degree intoxicated by the stimulus of the fever, and he will therefore be more affected by every glass of cordial that is administered. It has been contended, that wine does not stimulate so much in fever

as in health; but so far from this being the case it has always appeared to me to stimulate much more, while the stage of excitement continues. Strange as it may appear, it is still the custom of many practitioners to pour in large quantities of wine indiscriminately, throughout all the stages of the genuine typhus. If, by any chance, the energies of the constitution should finally prevail against both the disease and this injudicious treatment, the recovery is falsely attributed to the wine, and thus a most dangerous error is at once propagated and respected—an error by which an immense number of febrile patients has been destroyed. When strong stimulants are exhibited at the time, and in the manner above noticed, they have a powerful tendency to produce inflammation or congestion in the visceral organs, and thus to render the chance of recovery at the best very doubtful. So far from their being admissible in this stage, the lightest and coolest regimen is imperiously demanded, and even every animal substance, with the exception of a little milk, ought to be strictly prohibited (14).

There is generally some remission of the fever in the simple typhus towards the morning, and the patient will almost always be much less oppressed at that than at any other period of the day; but as the excitement gains ground, the debility increases, and may be observed to be the greatest when the exacerbation is at its highest point in the evening. And surely this fact, which I have repeatedly witnessed, goes far to prove, that the debility in this stage is merely the con-

(14) By keeping in view the distinction between the stages of typhus fever, the contrarieties of authors in relation to the effects of wine and other diffusible stimuli in this disease, may be easily reconciled. In the stage of excitement they are undoubtedly injurious; and, as our author justly observes, they stimulate the system more than in health. In the last stage, however, when collapse supervenes and the debility is real, then the system will bear the most astonishing quantities of wine without the ordinary impressions being produced. For the quantity of wine which may be safely and advantageously given in this stage of fever, the reader may consult Moore's Medical Sketches. We cordially agree with our author in condemning the practice of those who indiscriminately pour in their wine throughout all the stages of typhus, merely because it is typhus!

sequence of the excitement. If, as some have contended, the debility were real at this time, how comes it to pass, that it is invariably increased by diffusible stimuli and animal food, and diminished by purgatives, spare diet, and whatever allays or lessens the excitement? When the doctrines of debility were so prevalent, it was the established practice to give strong wines and broths during the whole period of excitement, and the fatality was extremely great: but now, wherever the antiphlogistic regimen has been adopted, instead of those pernicious means, the disease has been generally found remediable in the beginning.

With respect to diet, I have always endeavoured to make it as simple as possible, being firmly persuaded, that there is no disease in which the stomach should be less pampered than in typhus, and this indeed is pointed out by the loathing of food with which it is attended. Moreover, it will be found impossible to support the strength of the patient by a strong and varied diet, so long as the excitement continues; nay, it will have a directly contrary effect, for by augmenting the febrile irritation, and disordering the digestive and biliary organs still more, it may eventually induce local inflammations, or congestions of a fatal description. Milk largely diluted with water, a little thin arrow root, milk-whey, barley-water, or thin gruel, will answer every purpose of sustaining the powers of the system, without exciting the heart and arteries. There is a strong popular prejudice against the use of milk in fevers; but popular prejudice is sometimes merely another name for popular error, and it is most assuredly so in the point under consideration. Hippocrates simply declares, that milk is bad * in febrile distempers; but Sydenham and Heberden speak of it very favourably, and my own experience has confirmed their recommendations (15). But it is not

* Popular errors, on medical subjects, are mostly the errors of the physicians of former ages. It is, perhaps, not improbable, that the one here mentioned, in respect to milk, originated with Hippocrates, and, having been embraced by others, has thus been transmitted down to our times.

(15) We have administered milk in very bad cases of typhus, and always

the quality only of food that ought to be regarded, for as it is customary in fevers to give very small portions frequently, much too large a quantity is often administered in this way; and the consequence generally is an increase of general irritation, and sometimes even an attack of inflammation, especially of the stomach or intestines. The quantity of food, therefore, in the stage of excitement ought to be exceedingly moderate, as well as its quality mild; and by an attention to these two circumstances the waste from the necessary evacuations may be sufficiently supplied, without the risk of either augmenting the general excitement, or of occasioning any topical irritation.

At all times of the second stage, the admission of fresh cool air, frequent changes of linen, thin bed-coverings, cold sub-acid drinks, quietness, and the abstraction of every extraordinary stimulus, are particularly calculated to allay the universal excitement and irritation, and are in general highly acceptable to the sick; but with respect to ventilation in this stage, currents of air ought always to be avoided, as they may produce some pulmonic or abdominal inflammation, or give rise to an attack of rheumatism or erysipelas.

In the milder cases of the simple typhus, little will be needed in the stage of collapse, the powers of nature in general, assisted by light nutriment, being fully adequate to the recovery. But in the more urgent examples, the treatment in several particulars must be materially different from that laid down in the two former stages. Evacuations, more especially, ought not now to be induced, but with the greatest circumspection, for several cases have come within my knowledge, in which patients thus far advanced in typhus, have sunk very rapidly, from the repeated operation of a strong cathartic. Generally speaking, in this stage one or two moderate dejections will be quite sufficient in twenty-four hours. There are, however, some exceptions to this rule, which it may not be improper to notice here.

with impunity. Combined with lime water, it is highly useful as an antacid.

When the exhibition of purgative medicines has been neglected in the beginning of typhus, an extraordinary accumulation of feces often exists in the last stage, and occasions an alarming oppression of the brain, accompanied with great prostration of the natural powers, flushed face, suffused eye, delirium, or some degree of stupor, high breathing, foul tongue, and quick, uneven pulse. In such cases, the abstraction of the smallest portion of blood would be eminently hazardous; but I have frequently seen the most agreeable change induced by full doses of brisk purgatives, such as calomel with jalap, aided by large enemata, the strength of the patient having been supported during their operation by moderate allowances of good wine. In the advanced stages of typhus, when cerebral oppression is thus secondary of loaded bowels, much sometimes may be affected by the combined employment of purgatives and cordials, care being taken that the former act with tolerable freedom, and that the latter only be given to obviate the debility, without too powerfully exciting the general circulation.

In the last stage of typhus, when the bowels have not been regularly moved in the preceding stages, it is not uncommon for patients to pass frequent, small, loose, fetid stools, which are sometimes mixed with slime and blood. Yet such an occurrence does not prohibit aperients, but rather pressingly indicates the necessity of their exhibitions; since the distressing looseness is the consequence of offensive sordes retained in the bowels, and ceases when they are effectually removed by active purgatives; though it will often be requisite to give a small opiate soon after their operation, and to support the strength with cordials, as in the instance before mentioned.

If the above circumstances fully authorize the liberal employment of purgative medicines in the last stage of typhus, there are others which seem almost entirely to prohibit them. If patients be kept in very close apartments, and even if their bowels be daily attended to during the first and second stage, it may be occasionally observed, that on the approach of the last stage, frequent, copious, black bloody stools are passed without any offensive odour. About the same time,

too, peculiar petechiæ begin to show themselves upon the extremities, which at first are only few in number, and appear as if a drop of very black ink had been allowed to dry here and there upon the skin, and as if they could almost be rubbed off by the fingers; but they soon become numerous, and spread over different parts of the body, and at last are generally accompanied by discharges of blood from the nostrils, mouth, bladder, or bowels. Under these circumstances, I have almost always observed, that aperients increased the effusions of blood, and caused a sudden depression of the vital powers. Indeed, whatever plan may be pursued, there is no calculating upon success; but the free admission of fresh air, the liberal allowance of lemon juice, mixed in a little Madeira wine and water, with very small doses of opium and aromatics, are the means on which most reliance may be placed. After death, in two cases of the above description, with the exception of some trifling congestions, no decidedly morbid appearance was discoverable, nor were there any coagula of blood in the intestinal canal, though much had been previously evacuated. As instances of this kind are almost invariably fatal under the common modes of practice, it is evident that we are still ignorant of their real nature. Repeated reflections upon them have led me to suppose, that the cause of death is some peculiar change which takes place in the blood itself, rendering it unfit for the purposes of vitality. The inhalation of the exhilarating gases has never, I believe, been recurred to in such cases: is it at all probable, that some of them might be beneficially used? Yet, by this query, it is not my design to recommend any of them to actual trial, but merely to suggest the consideration of them to those who may hereafter investigate this subject. The humoral pathology no doubt abounded with absurdities, yet, I am fully satisfied, that there are several diseases, to which it might, in some degree, be justly extended; and therefore believe that its almost entire abandonment has been prejudicial, by leading us from the investigation of various morbid states of the fluids, and of the means best fitted to correct them. The foregoing hemorrhage from the bowels is pecu-

liar, inasmuch as it takes place in the universal collapse, and is dependent on a depraved state of the fluids and a loss of tone in the overloaded capillary system of vessels; but when bloody stools occur in the stage of excitement, they are indications either of preternatural fulness of the liver, or of inflammation of the mucous membrane of the bowels, and therefore such evacuations must not be confounded with the hemorrhage, which has been so specially noticed in conjunction with the inky petechiæ.

Sydenham and some later writers seem to have thought that petechiæ were the effect of increased arterial action, while others again have considered them as the strongest proofs of general relaxation. It has appeared to me, that they sometimes arise from increased action, as in the stage of excitement; at other times from relaxation of the extreme vessels, as in the stage of collapse; and frequently from a dissolved state of the blood, which undoubtedly occurs in the last stage of many fevers. When petechiæ proceed from increased action, they are at first of a bright red colour; when from relaxation, they are generally of a darkish brown; and when from a dissolved state of the vital fluid, they have an inky appearance, and are almost always accompanied with effusions of very dark blood from other parts of the body, as the nose, bladder, or intestines.

Different kinds of purgatives being mostly requisite in the different stages of the simple typhus, some remarks on the effects of those in common use may perhaps serve to show what sort ought to be selected. Calomel has probably a more general influence than any other cathartic; it excites a degree of nausea in the stomach, emulges the biliary ducts, dislodges scybala most effectually, corrects morbid secretions, and with small doses of the antimonial powder,* or of the tartrate of antimony, promotes perspiration as well as purges; and this combination, therefore, is well suited to the stage of excitement. Castor oil, in one respect resembles calomel, for it completely unloads the alimentary canal of its con-

* Oxidum Antimonii cum Phosphate Calcis. Phar. Ed.

tents; besides, it tends to allay tormina or tenesmus, and every species of irritation about the rectum.* Jalap and rhubarb seem chiefly to exert their power on the larger intestines; when conjoined with calomel, they are very certain in their operation, and when given after it, especially rhubarb, have a tendency to remove the tenesmus and the mucous discharges, which it frequently produces exhibited alone. The neutral salts, such as the sulphate of magnesia, have a peculiar effect on the inner coat of the bowels, evinced by copious liquid stools; yet they are not to be trusted to singly, because they may, though given day after day, leave a considerable quantity of scybala in the arch of the colon. Magnesia often allays irritability of the stomach, particularly when accompanied with bilious, or sour watery vomitings; it may therefore be advantageously combined in many cases with other aperients, and, when followed by lemon juice, is frequently a certain and powerful purgative. Aloes, and similar drugs have most influence on the lower part of the intestines, particularly when prescribed in the form of pill. From these hints it will be apparent, that calomel, antimony, jalap, and the like, with neutral salts occasionally, are most proper in the first and second stage, and that, with some exceptions already mentioned, the mildest laxatives are most proper in the last stage of the simple typhus; but as castor oil, by varying the dose of the dark or pale-coloured, may be made to answer either as a purgative or a laxative, so it will be found upon the whole one of the most useful aperients.

It is in the stage of collapse, that the principles laid down by the philosophic Dr. Currie may be deceptive, in regard to

* It is very common to give castor oil, made into an emulsion by the yolk of an egg, or a small portion of alkali: but this is a most exceptionable prescription, for I have repeatedly remarked, that it is very liable to occasion vomiting, and is generally uncertain in its operation. One of the best modes of administering castor oil is to mix it in lemon juice and water, or in warm coffee. Under this simple form, it sits most easily upon the stomach, and operates with the greatest certainty. The dark-coloured castor oil, or that called West Indian, is more efficient as a purgative than the pale-coloured, or that called East Indian.