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Mr. Keall



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MORBID AFFECTION
OF
INFANCY.



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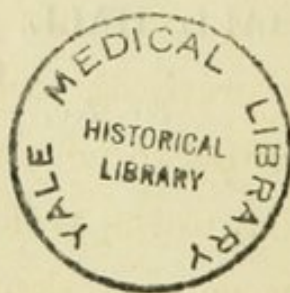
ARISING FROM CIRCUMSTANCES OF EXHAUSTION, BUT
RESEMBLING HYDRENCEPHALUS ;

BY MARSHALL HALL, M.D. F.R.S.E.

&c. &c.

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* * * *The present Essay is intended to be published as an Appendix to a work which will shortly appear, entitled, "Researches on the Morbid and Curative Effects of Loss of Blood."*



ON A

MORBID AFFECTION

OF

INFANCY.

I HAVE watched, with peculiar care, many cases of a morbid affection incident to infancy, which generally arises from circumstances of exhaustion, but resembles, in many of its symptoms, the earlier and especially the later stages of hydrancephalus. As this affection has not been noticed by practical writers as it deserves, I think the following brief account of it cannot prove uninteresting to the profession.

I first gave a cursory sketch of this morbid affection in a little volume of "Medical Essays" published in 1825, but now out of print. It has since been briefly noticed by Dr. Abercrombie in his valuable "Researches on Diseases of the

Brain and Spinal Chord," published in 1828. The present essay was read to the Medico-Chirurgical Society, on the ninth of December, 1828, but afterwards withdrawn. Lastly, Dr. Gooch has treated of this affection in his excellent "Account of some Diseases peculiar to Women," just published. These are all the notices I have hitherto seen of this singular and interesting disorder.

The diseases of children best understood, are those which arise from irritation, and principally irritation in the stomach and bowels and the irritation of teething, and inflammation. But there is another source of disorder in infancy, less frequent perhaps in its operation, but not less important in its consequences, and far less understood by medical men, in exhaustion. This exhaustion has its origin in early infancy, chiefly in diarrhœa or catharsis; in the later periods of infancy, in the loss of blood, with or without the relaxed or evacuated condition of the bowels.

The state of diarrhœa has generally depended upon improper food. It has very frequently succeeded to weaning, or to other changes in the

diet. The catharsis has followed the administration of an aperient medicine, which, at such a moment of disorder of the stomach and bowels, is apt to act excessively. The exhaustion from loss of blood generally follows the inappropriate or undue application of leeches or use of the lancet.

I may observe, indeed, in this place, that of the whole number of fatal cases of disease in infancy, a great proportion occur from this inappropriate or undue application of exhausting remedies. This observation may have a salutary effect in checking the ardour of many young practitioners, who are apt to think that if they have only bled, and purged, and given calomel enough, they have done their duty; when, in fact, in subduing a former, they have excited a new disease, which they have not understood, and which has led to the fatal result.

This question, and that of the effects of exhaustion in infants and children, open a new field for investigation. Almost all our works on infantile diseases are silent on the subject; and yet without an accurate knowledge of it, I regard it as totally impossible that we

should be prepared to watch and treat the morbid affections of this young and tender age. The subject must be taken up and investigated anew. All the affections which may arise from exhaustion, must be accurately observed, distinguished from similar affections arising from other causes, and traced back to their origin, and forward in relation to their remedies. In this manner some hydrencephaloid, convulsive, and even croupy affections will be viewed in a new aspect; and we shall be preserved from some painful dilemmas into which we should assuredly fall without this knowledge of the effects of exhaustion.

But in this essay I purpose to confine my observations to one of the forms of disorder which arise from this cause,—the hydrencephaloid. It may be divided into two stages, the first that of irritability, the second that of torpor; in the former there appears to be a feeble attempt at re-action, in the latter the nervous powers appear to be more prostrate. These two stages resemble, in many of their symptoms, the first and second stages of hydrencephalus respectively.

This morbid affection has, as I have stated, usually been first induced by some change in

the diet, by which the stomach has been loaded or disordered, and the bowels perhaps affected with diarrhœa ; and this latter state has frequently been exasperated by the untimely administration of an aperient medicine. The infant becomes irritable, restless, and feverish ; the face flushed, the surface hot, and the pulse frequent ; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on being touched, or from any sudden noise ; there are sighing, moaning during the sleep, and screaming ; the bowels are flatulent and loose, and the evacuations are mucous and disordered.

If, through an erroneous notion as to the nature of this affection, nourishment and cordials be not given ; or if the diarrhœa continue, either spontaneously, or from the administration of medicine, the exhaustion which ensues is apt to lead to a very different train of symptoms. The countenance becomes pale, and the cheeks cool or cold ; the eye-lids are half closed, the eyes are unfixed, and unattracted by any object placed before them, the pupils unmoved on the approach of light ; the breathing, from being quick, becomes irregular and affected by sighs ;

the voice becomes husky, and there is sometimes a husky teasing cough; and, eventually, if the strength of the little patient continue to decline, there is crepitus or rattling in the breathing; the evacuations are usually green; the feet are apt to be cold.

A similar train of symptoms occurs in other cases, in which the strength of the little patient has been subdued, and the vascular system exhausted by the abstraction of blood. In both cases, leeches are sometimes again applied to subdue this new form of disease, under the erroneous notion of a primary cerebral affection. This measure infallibly plunges the little patient into imminent, if not irretrievable danger.

Sometimes the sinking state goes on in spite of every appropriate remedy.

Stimuli, if efficacious, reduce the frequency of the pulse, and restore the wonted warmth, colour, expression, and smiles to the countenance.

The condition of the cheeks, in regard to colour and warmth, may be considered as the pulse of very young infants, indicating the degree of remaining power, or of exhaustion. In the present case especially, there is no symptom so

important, so distinctive. It is from the condition of the cheeks, in conjunction with a due consideration of the history, that the diagnosis of this morbid state, and the indication of the appropriate remedies are chiefly to be deduced. The general surface, and especially the hands and feet, also afford important sources of information as to the condition of the nervous or vital powers. Next to these, the degree of frequency of the pulse, and the character of the breathing, are points of the greatest importance ;—during the stage of irritability the breathing is quick ; during that of torpor, it is slower, irregular, suspirious, and finally crepitous ; the pulse changes in its beat, from being full becoming smaller, but retaining, perhaps, its former frequency.

We should be especially upon our guard not to mistake the stupor or coma, into which the state of irritability is apt to subside, for the natural sleep, and for an indication of returning health. The pallor and coldness of the cheeks, the half-closed eye-lid, and the irregular breathing, will sufficiently distinguish the two cases. It is equally important to distinguish this state from a hydrecephaloid affection arising from derange-

ment of the alimentary canal, and from the coma of hydrencephalus itself. This is to be done chiefly by observing the condition of the countenance and by tracing the history and causes of the affection. There is an absence of the heat and occasional restlessness and irritability of the former of these affections, and of the contracted brow, and of the expression of pain on moving the head, observed in the latter.

The following remarks are copied from my "Medical Essays :"

"The state of exhaustion is very apt to be induced in early infancy, and as the reaction is feeble at this period of life, the case soon assumes the character of sinking. I have frequently been consulted when the original disease has been subdued, perhaps, and the chief complaint of the little sufferers was a state of exhaustion which a truce from remedies and medicines, and a proper supply of nourishment and perhaps stimulus have removed.

"This state of things is often mistaken for inflammation of the brain, or hydrencephalus. And it may be difficult to state the grounds for a just diagnosis between the two affections. It

will, however, be of great assistance to be fully aware of the nature and character of exhaustion, and to conjoin with this knowledge a due retrospect of the history of the case, and a due consideration of the effects of the various remedies which may have been employed.

“ The state of exhaustion in infants is little marked by the symptoms of reaction. At first there are great restlessness and irritability of temper, whilst the countenance is pale and expressive of great anxiety, and there is great frequency of the pulse ; afterwards the temper and restlessness appear subdued, there are some dozing and other false and deceptive appearances of amendment, but the pulse is still more frequent, the face pale and sunk, and the cheeks and extremities are cold : the voice is apt to be husky, and attended with a husky, hacking, and distressing cough.”

“ When a child has been rather long ill, when active remedies have been employed, when the form of the disease has perhaps changed in some degree, and paleness of the cheeks is attended with irritability and restlessness, we should carefully consider whether the symptoms may not

be those of exhaustion. I am persuaded that by relinquishing all lowering remedies, and adopting a cordial and soothing plan of treatment, I have seen some children recover who would soon have sunk under the continuance of remedies calculated to subdue a supposed state of inflammation. In these cases, the idea that the original disease, and the remedies, had worne out the little patient, and led to a state of exhaustion, had apparently never occurred to the practitioner. It is impossible to do justice to this subject in a short section of a short essay ; but I am satisfied that the hints here offered, will, if carefully considered and cautiously acted upon, be of great assistance to the young physician in his treatment of some of the diseases of infants.” *

Dr. Abercrombie observes,—“ in the last stage of diseases of exhaustion, patients frequently fall into a state resembling coma, a considerable time before death, and while the pulse can still be felt distinctly ; I have many times seen children lie for a day or two in this kind of stupor, and recover under the use of wine and nourishment. It is often scarcely to be distinguished from the

* Pp. 72—76.

coma which accompanies diseases of the brain. It attacks them after some continuance of exhausting diseases, such as tedious or neglected diarrhœa; and the patients lie in a state of insensibility, the pupils dilated, the eyes open and insensible, the face pale, and the pulse feeble. It may continue for a day or two and terminate favourably, or it may prove fatal. This affection seems to correspond with the *apoplexia ex inanitione* of the older writers. It differs from syncope in coming on gradually, and in continuing a considerable time, perhaps a day or two; and it is not, like syncope, induced by sudden and temporary causes, but by causes of gradual exhaustion going on for a considerable time. It differs from mere exhaustion, in the complete abolition of sense and motion, while the pulse can be felt distinctly, and is, in some cases, of tolerable strength. I have seen in adults the same affection, though it is perhaps more uncommon than in children.* In a letter which I had the honour to receive from Dr. Abercrombie, that gentleman observes, “the state of infants which I have referred to, is a state of pure

* *Researches, &c.* pp. 310, 311.

coma, scarcely distinguishable, at first sight, from the perfect stupor of the very last stage of hydrocephalus, the child lying with the eyes open, or half open, the pupils dilated, the face pale. It is difficult to describe distinctly the appearance, but it is one which conveys the expression of coma, rather than of sinking; and I remember the first time I met with the affection, the circumstance which arrested my attention, and led me to suppose the disease was not hydrocephalus, and the state somewhat different from coma, was finding on further inquiry, that it came on after diarrhœa and not with any symptoms indicating an affection of the head. The child recovered under the use of wine and nourishment.” *

Dr. Gooch observes,—“ I am anxious to call the attention of medical men to a disorder of children which I find invariably attributed to, and treated as, congestion or inflammation of the brain, but which I am convinced often depends on, or is connected with, the opposite state

* Effects somewhat similar are apt to follow operations on very young children. The reader may consult Mr. Travers' late interesting work upon “ Constitutional Irritation,” pp. 139—141, published in 1826.

of circulation. It is chiefly indicated by heaviness of head and drowsiness: the age of the little patients whom I have seen in this state has been from a few months to two or three years; they have been rather small of their age, and of delicate health, or they have been exposed to debilitating causes. The physician finds the child lying on its nurse's lap, unable or unwilling to raise its head, half asleep, one moment opening its eyes, and the next closing them again with a remarkable expression of languor. The tongue is slightly white, the skin is not hot, at times the nurse remarks that it is colder than natural; in some cases there is at times a slight and transient flush: the bowels I have always seen already disturbed by purgatives, so that I can scarcely say what they are when left to themselves; thus the state which I am describing is marked by heaviness of the head and drowsiness, without any signs of pain, great languor, and a total absence of all active febrile symptoms. The cases which I have seen have been invariably attributed to congestion of the brain, and the remedies employed have been leeches and cold lotions to the head, and purgatives, especially

calomel. Under this treatment they have gradually become worse, the languor has increased, the deficiency of heat has become greater and more permanent, the pulse quicker and weaker, and at the end of a few days, or a week, or sometimes longer, the little patients have died with symptoms apparently of exhaustion. In two cases, however, I have seen, during the last few hours, symptoms of oppressed brain, as coma, stertorus breathing, and dilated and motionless pupil." *

But although this morbid affection is scarcely described by former writers, it is, I find, sufficiently familiar to many observing practitioners, on recalling to their minds the circumstances of the singular and interesting state of things attending it, and I am indebted to several friends for notices of cases of this kind.

The remedies for this morbid affection, are such as will check the diarrhœa, and afterwards regulate the bowels, and restore and sustain the strength of the little patient. With the first objects it may be necessary to give the tinctura opii, and chalk, and afterwards the pilula hydrargyri, rhubarb, and magnesia; with the second,

* Account &c., pp. 357, 358.

sal volatile, but especially brandy, and proper nourishment are to be given according to circumstances. But, in this, as in so many cases of infantile disorders, the young milk of a young and healthy nurse, is the remedy of most importance,—in the absence of which, ass's milk may be tried, but certainly not with the same confident hope of benefit.

Five or ten drops of the sal volatile may be given every three or four hours; and twice or thrice in the interval, five or ten drops of brandy may be given in arrow-root done in water. As the diarrhœa and the appearances of exhaustion subside, these remedies are to be subtracted; the bowels are to be watched and regulated, and the strength is to be continually sustained by the nurse's or ass's milk. The brandy has sometimes appeared to induce pain; sal volatile is then to be substituted for it; a dose of magnesia has also appeared to do good.

For the state of irritability, the warm bath is a remedy of great efficacy. For the coma a small blister or sinapism should be applied to the nape of the neck. A state of exhaustion of the general system, as I have

observed elsewhere,* by no means precludes the possibility of real congestion of the brain. It rather implies it. In extreme cases these are not only the symptoms of cerebral congestion during life, but effusion of serum into the ventricles of the brain is found on examination after death.

In every case the extremities are to be kept warm by flannel, and the circulation should be promoted in them by assiduous frictions. It is of the utmost importance carefully to avoid putting the little patient into the erect posture. A free current of air is also a restorative of the greatest efficacy.

I proceed to exemplify this description and the appropriate treatment, by adducing several cases. The first I give from the "Medical Essays:"

CASE I.—"A little girl aged four months was seized with a bowel complaint; the usual medical attendant prescribed an aperient which acted too freely. When I saw it on the second or third day of the disorder, the countenance was pale and sunk, and the cheeks cool; it started on being touched; there was a peculiar huskiness

* Commentaries on Diseases of Females, *passim*.

of the voice, and the pulse beat from 144 to 150. By giving brandy, the pulse was found on the succeeding day reduced to 120, and there was some apparent amendment, although a degree of rattling in the breathing or on coughing, was now added to the huskiness of the voice. By continuing the brandy the cheeks became warm, and at length somewhat flushed, and the pulse rose to 140. The quantity of brandy was diminished and cautiously regulated, and the pulse very gradually fell to the natural standard.

“ In this case the pallidness and coldness of the cheeks, and the state of the voice and breathing, indicated almost a fatal degree of exhaustion ; the frequency of the pulse arising from this cause, was reduced by the brandy ; but it was afterwards again increased as the effect, not of the exhaustion, but of the stimulus, and the cheeks recovered their warmth, and sometimes even became flushed. In another case precisely similar, the state of sinking continued in spite of every remedy, and the little infant lingered and then expired. I have known such a state of lingering to be continued for several days.”

CASE II.—On Saturday the 21st of March, I

was called to an infant three months old, under the following circumstances. It had been weaned a fortnight; during this period it had been fed with milk and barley-water, and once a day with the addition of bread. It remained well until the Thursday before my visit, when it became affected with fever, restlessness, crying, and moaning in its sleep, and with diarrhœa, passing several undigested and mucous stools. A dose of calomel was given, which induced sickness. A second dose was then administered which in the course of that and the succeeding day, Friday, was followed by sixteen evacuations.

During Friday night, there were much heat, interrupted sleep, and griping pains, followed by offensive evacuations. On the following morning, there was some degree of dozing or coma, the eyes were imperfectly closed, the tunica albuginea alone being visible, and the mouth was open. This inanimate state, attended by coldness of the cheeks, hands, and feet, would continue for ten minutes, and then there would be some degree of reaction.

This state of things continued during the whole of Saturday, the dozing assuming the

character of more settled coma. I saw the little patient late in the evening. The cheeks were then pale and cold; the eyes were half open, and unfixed, and unexcited by any external object however brilliant, and the pupils were moderately dilated, and unmoved on the approach of light; the pulse was 132; the breathing irregular and sighing; the general surface pale, and the hands and feet cold.

There were thus the usual symptoms of the comatose stage of hydrencephalus. The condition of the countenance, general surface, and extremities, and the history of the case, however, led me to view it as one of exhaustion, and not of inflammation and effusion within the head. I therefore prescribed five drops of brandy, and three of sal volatile, to be given alternately every hour; and I directed the little patient to be put once in the interval of the two hours, to the breast of a young and healthy nurse.

Under this discipline there was a gradual but not unchequered amendment. The stupor began to alternate with restlessness, and there were frequent startings; more than once the restlessness was so great as to require the use of a warm

bath, by which it was greatly relieved, and quiet and sleep induced. The countenance gradually assumed a more natural and animated appearance and expression, with an occasional smile. The bowels were moved four times on the succeeding day, the evacuations being green.

On Monday morning, a little magnesia and rhubarb were given, the other remedies having been and being still continued. The little patient started much less on this day, and slept quietly, and there was no return of restlessness to require the warm bath.

On the succeeding days there was an obvious and progressive amendment. The brandy and sal volatile were gradually abstracted, the breast being continued.

CASE III.—I was called a short time ago, to see a little girl, aged two years and three quarters, who had laboured under an attack of influenza. The affection of the chest had been severe and protracted, and sixteen leeches had been applied, besides the administration of other depletory measures, before it had subsided.

The symptoms of affection of the chest were, however, subdued at last; but the little patient

was left extremely exhausted, and in this state a new train of symptoms supervened, not less alarming, and more puzzling, than the first. The child fell into a dozing state, and lay with its eye-lids but half closed; it moaned when any attempt was made to rouse it; the eyes were unfixed on any external object, the pupils were dilated, yet partially contractile on the influx of light; the pulse was 140.

On withdrawing into an adjoining room, the medical gentleman whom I had the pleasure of meeting, observed, "hydrencephalus has now supervened, and we must administer calomel." I replied that I took a different view of the case,—that it resembled hydrencephalus indeed, but arose from exhaustion, and that brandy, not calomel, could alone save the little patient's life. I referred to the history of the case for sufficient sources of exhaustion; and to the facts detailed in the preceding part of this paper, for the actual occurrence of such cases in practice.

We administered brandy, directing thirty drops to be given every two hours, with barley-water in the intervals, and a quarter of a pint of ass's milk twice in the twenty-four hours.

The bowels were relieved by magnesia and the warm water injection.

This plan of treatment lowered the number of the pulse, and gradually diminished the severity of the other symytoms. Still the eyes were not to be fixed by presenting any bright object before them ; the pupils remained dilated ; the tunicæ conjunctivæ became inflamed from exposure, between the partially closed eye-lids ; and once or twice the fæces were passed involuntarily in bed.

The brandy having occasioned pain in the bowels, an effect which I have several times observed, it was given alternately with the spiritus ammoniæ aromaticus. The rest of the plan was pursued with unexampled assiduity by a most tender mother, who did not once undress or leave her little patient, until she saw it out of all danger. This task was the severer, because, although the symptoms which had been detailed subsided gradually and favourably, they were succeeded by an equally severe and sadly protracted apthous affection.

The first symptom of amendment was a diminished frequency of the pulse ; the next a restored

susceptibility of the pupils to light ; then the eyes became attracted and fixed by external objects, and a smile began to play upon the little patient's countenance ; the eye-lids closed more and more perfectly during sleep, and the conjunctivæ lost their inflamed, injected appearance ; the knees were drawn up, and the posture on the side began to be assumed spontaneously.

I have notes of two other cases of this kind, but they are so precisely similar to those which I have given, that it appears needless to add to the length of this little paper, by relating them in detail. I shall rather adduce the further evidence contained in the following paragraph of a letter written to me by my friend, Mr. Heming, Surgeon, of Kentish Town, than whom I know not a more intelligent and observing practitioner :

“ The two little children of whom I spoke to you became affected with bowel complaint, and the usual medical attendant gave them some aperient medicine. As they continued to get worse, Dr. Blegborough was consulted. I saw them on December the 10th. 1826. The youngest, an infant aged nine months, was suffering with aphthous diarrhœa, was very pale,

and much emaciated, and appeared to be dying. It lingered for two or three days with the symptoms of sinking which you have described, and then expired. The eldest child, a girl aged three years, the principal subject of the short account which I am enabled to give you, had had leeches applied to the temples, and had taken calomel and jalap, and its mother was at the time I saw it, applying a cold spirituous lotion to the head. Dr. Blegborough had given it as his opinion, that the case was hydrencephalus, and of course hopeless, and in truth I thought he was right, for the child was completely insensible to sound or light, the eyes were half closed, and affected with strabismus, and the pupil dilated; its head fell from side to side, and the fæces were passed involuntarily; the skin was blanched, and there was great emaciation. I recommended sinapisms to be applied to the feet; and, if the child should become capable of swallowing, which I did not expect, to give it ass's milk, and to omit all medicine.

“ When I called on the 12th, I was greatly and agreeably surprised to find this little patient much better. The asses' milk had been taken

and seemed to agree. As the bowels were still moved frequently and involuntarily, and as I did not now think the symptoms depended upon effusion into the brain, though I confess I was much puzzled to know to what cause they were to be assigned, I recommended small doses of laudanum to be given until the diarrhœa should be checked. On the 14th, the motions were less frequent, and the little patient was better in every respect. On the 18th, although very pale, the child was still further improved. It was sent into the country, and a few months afterwards it was perfectly well."

For the following case I am indebted to my intelligent friend Dr. Tweedie :

"In September last, I was requested by a respectable medical practitioner to visit an infant which he suspected to be dying from effusion into the brain. On reaching the house, I found a fine robust infant about four months old, lying in a state of complete coma, from which it could not be roused. On raising the eyelids, the pupils were found natural though the eye was dull. The pulse was rapid and feeble, the breathing frequent, and occasionally interrupted

and suspirious, and the bowels were loose, the evacuations consisting chiefly of mucus.

“ On enquiring into the previous history, I was informed that the mother having accepted the situation of wet nurse in a family, had placed this child, which was then in perfect health, under the care of another nurse who had just weaned her own child at the age of nine months ; that very soon afterwards it began to be sick, and the bowels became relaxed, and as it did not get better, it was removed to the house of a relation, who attempted to rear it by spoon diet. It was soon observed to rally under this change ; but the diarrhœa continued in spite of remedies administered with the view of checking it. Ten days afterwards it became again fretful and uneasy, the bowels being still purged ; then coma gradually supervened, and it died nine days afterwards, within twelve hours of my visit.

“ Permission could not be obtained to examine the body.”

It is since this paper was read to the Medico-Chirurgical Society, that I have had the satisfaction of seeing the recent publication of Dr. Gooch, in which that acute physician has given cases

similar to those just detailed. I cannot but be sensible of the flattering manner in which he has alluded to my observations.

As the cases and remarks of Dr. Gooch contain the only additional information upon the present subject which I have found in medical writings, I think it important to add some of them to those which I have already deduced from my own observation, and that of the gentlemen already quoted :

“ A little girl, about two years old, small of her age, and very delicate, was taken ill with the symptoms which I have above described. She lay dozing, languid, with a cold skin, and a pulse rather weak, but not much quicker than natural. She had no disposition to take nourishment. Her sister having died only a week before of an illness which began exactly in the same way, and which was treated by leeches and purgatives ; and some doubts having been entertained by the medical attendant of the propriety of the treatment, leeches were withheld, but the child not being better at the end of two days, the parents, naturally anxious about their only surviving child, consulted another practitioner.

The case was immediately decided to be one of cerebral congestion, and three leeches were ordered to be applied to the head. As the nurse was going to apply them, and during the absence of the medical attendants, a friend called in who had been educated for physic, but had never practised it, and who had great influence with the family: he saw the child, said that the doctors were not sufficiently active, and advised the number of leeches to be doubled. Six, therefore, were applied; they bled copiously; but when the medical attendants assembled in the evening, they found the aspect of the case totally altered, and that for the worse: the child was deadly pale, it had scarcely any pulse, its skin was cold, the pupils were dilated and motionless when light was allowed to fall on them, and when a watch was held to its eyes it seemed not to see; there was no squinting. Did this state of vision depend on the pressure of a fluid effused into the brain since the bleeding, and during this exhausted and feeble state of circulation, or did it depend on the circulation of the brain being too languid to support the sensibility of the retina? It is

well known that large losses of blood enfeeble vision. I saw a striking instance of this in a lady who flooded to death. When I entered the chamber she had no pulse, and she was tossing about in that restless state which is so fatal a sign in these terrific cases. She could still speak, asked whether I was come, (she knew I had been sent for,) and said, "Am I in any danger?—How dark the room is!—I can't see." The shutters were open, the blind up, and the light from the window facing the bed fell strong on her face. I had the curiosity to lift the lid, and observe the state of the eye; the pupil was completely dilated, and perfectly motionless, though the light fell strong on it. Who can doubt that here the insensibility of the retina depended on the deficiency of its circulation? But to return to the little patient. The next day she had vomited her food several times; it was therefore directed that she should take no other nutriment than a desert spoonful of ass's milk every hour, and this was strictly obeyed, and continued for several days. The child wasted, her features grew sharp, and every now and then she

looked fretful, and uttered a faint squeaking cry ; the eyeballs became sunk in the socket, like those of a corpse that had been dead a month ; the skin continued cool, and often cold, and the pulse weak, tremulous, and sometimes scarcely to be felt. Under this regimen, and in this way, she continued to go on for several days. At times she revived a little, so as to induce those who prescribed this treatment to believe confidently that she would recover, and she clearly regained her sight, for if a watch was held up to her she would follow it with her eyes. She lived longer than I expected ; a full week, and then died with the symptoms of exhaustion, not with those of oppressed brain. The head was opened by a surgeon accustomed to anatomical examinations, and nothing was found but a little more serum than is usual in the ventricles.

“ If the reader has perused the foregoing case attentively, and has reflected on it, he will of course draw his own inferences. I can draw no others than these, that the heaviness of head and drowsiness, which were attributed

to congestion in the brain, really depended on a deficiency of nervous energy ; that the bleeding and scanty diet aggravated this state, and insured the death of the child ; also, that the state of the eye which so speedily followed the loss of blood, and which resembled that occasioned by effusion, did in reality depend on a deficiency in the circulation of the brain, a fact of considerable curiosity and importance.

“ I will now relate a case similar in the symptoms, but very different in the treatment and result. I was going out of town one afternoon, last summer, when a gentleman drove up to my door in a coach, and entreated me to go and see his child, which he said had something the matter with its head, and that the medical gentleman of the family was in the house, just going to apply leeches. I went with him immediately, and when I entered the nursery I found a child, ten months old, lying on its nurse's lap, exactly in the state which I have already described ; the same unwillingness to hold its head up, the same drowsiness, languor, absence of heat and all

symptoms of fever. The child was not small of its age, and had not been weak, but it had been weaned about two months, since which it had never thriven. The leeches had not been put on. I took the medical gentleman into another room, related to him the foregoing case, and several similar to it, which had been treated in the same way, and had died in the same way. Then I related to him a similar case, which I had seen in the neighbouring square, which had been treated with ammonia in decoction of bark, and good diet, which had recovered ; not slowly, so as to make it doubtful whether the treatment was the cause of the recovery, but so speedily that at the third visit I took my leave. He consented to postpone the leeches, and to pursue the plan which I recommended. We directed the gruel diet to be left off, and no other to be given than ass's milk, of which the child was to take, at least a pint and a half, and at most a quart in the twenty-four hours. Its medicine was ten minims of the aromatic spirit of ammonia in a small draught every four hours. When we met the next day, the appearance

of the child proved that our measures had been right ; the nurse was walking about the nursery with it upright in her arms. It looked happy and laughing : the same plan was continued another day ; the next day it was so well that I took my leave, merely directing the ammonia to be given at longer intervals, and thus gradually withdrawn, the ass's milk to be continued, which kept the bowels sufficiently open, without aperient medicine.

“ So inveterate is the disposition to attribute drowsiness in children to congestion of the brain, and to treat it so, that I have seen an infant, four months old, half dead from the diarrhœa produced by artificial food, and capable of being saved only by cordials, aromatics, and a breast of milk ; but because it lay dozing on its nurse's lap, two leeches had been put on the temples, and this by a practitioner of more than average sense and knowledge. I took off the leeches, stopped the bleeding of the bites, and attempted nothing but to restrain the diarrhœa, and get in plenty of nature's nutriment, and as I succeeded in this, the drowsiness went off, and the child revived. If it could have reasoned and spoken

it would have told this practitioner how wrong he was ; any one, who from long defect in the organs of nutrition, is reduced so that he has neither flesh on his body, nor blood in his veins, well knows what it is to lay down his head and doze away half the day without any congestion or inflammation of his brain. This error, although I have specified it only in a particular complaint of children, may be observed in our notions and treatment of other diseases, and at other periods of life. If a woman has a profuse hæmorrhage after delivery, she will probably have a distressing head-ache, with throbbing in the head, noises in the ears, a colourless complexion, and a quick, weak, often-thrilling pulse, all which symptoms are greatly increased by any exertion. I have seen this state treated in various ways, by small opiates, gentle aperients, and unstimulating nourishment, with no relief. I have seen blood taken away from the head, and it has afforded relief for a few hours, but then the head-ache, throbbing, and noises, have returned worse than ever ; the truth is, that this is the acute state of what in a minor degree, and in a more chronic form occurs in chlorosis, by which I

mean pale-faced amenorrhœa, whether at puberty or in after-life. It may be called *acute chlorosis*, and like that disease is best cured by steel, given at first in small doses, gradually increased, merely obviating constipation by aloetic aperients.

“ I shall not encumber this paper with a multiplicity of cases, but state that the above are only specimens of a class of which I have seen enough to convince me that they deserve the attention of the profession. If I had any doubt about this, this doubt would be removed by the fact that Dr. Marshall Hall has already recognized them, and described them in a paper which has been read at the Medico-Chirurgical Society. He has therefore anticipated me in announcing them.” “ The only difference between our experience seems to be this—that he attributes the state which I have been describing to the diarrhœa produced by weaning, or to the application of leeches for some previous complaint. In most of the cases I have seen, however, the child has had no previous illness, and the leeches have been applied subsequent to the drowsiness, and as a remedy for it.” *

* Pp. 358—367.

In regard to the difference in the experience of Dr. Gooch and myself, I would observe that that of Dr. Abercrombie plainly concurs with mine, and that, in all the cases seen by Dr. Gooch himself, the bowels had already been disturbed by purgatives, so that a source of exhaustion had existed in them. All the cases which I have seen, or heard of, and those of Mr. Heming and of Dr. Tweedie, alike involved a state of exhaustion.

The first stage of the affection which has been described, or that of irritability, may, indeed, depend on a previous disordered condition of the stomach and bowels ; but the state of torpor is obviously the result of exhaustion.

The rest of Dr. Gooch's observations are highly interesting.

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