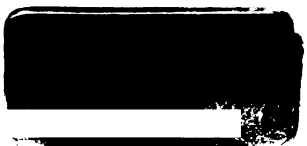

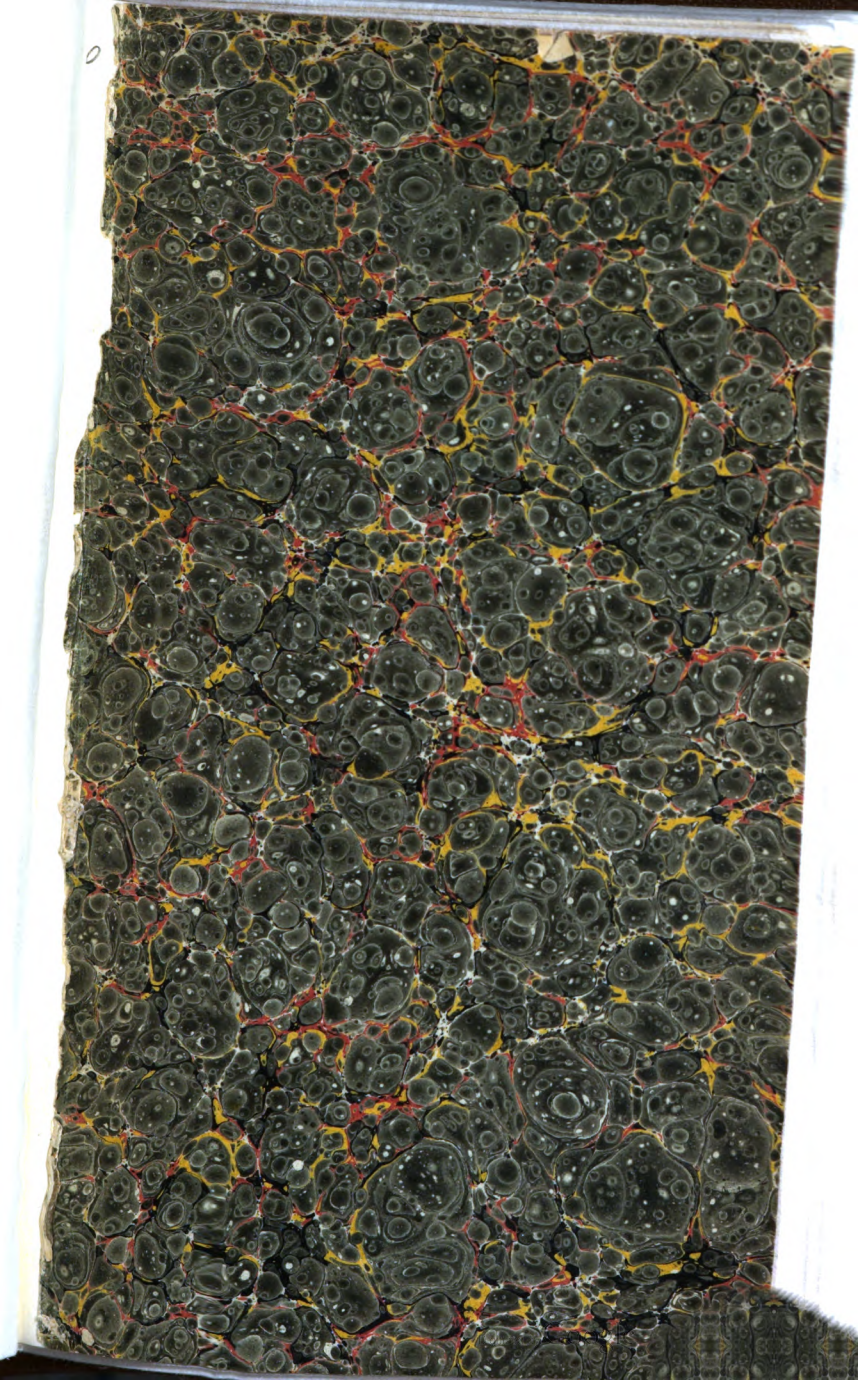

PLAIN INSTRUCTIONS

FOR THE

MANAGEMENT OF INFANTS,

WITH

PRACTICAL OBSERVATIONS ON THE DISORDERS

INCIDENT TO CHILDREN.

TO WHICH IS ADDED, AN ESSAY ON SPINAL AND

CEREBRAL IRRITATION.

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PREFACE.

THE present work is not intended exclusively either for the profession or for nurses, but to a certain degree for both. Whoever has had much experience in the diseases of children must have witnessed errors, arising on the one hand from too great daring, and on the other from too much anxiety. This will naturally happen according to the different temperaments of individuals, nor will it be easy to make the one less rash, or the other less fearful. If, however, it can be done in any way, it must be by communicating such information as may shew the difficulties which beset the practice of medicine, and the different importance which ought to be attached to different symptoms. In endeavouring, therefore, to afford this knowledge to extra professional persons, I have laboured to use plain and intelligible language, such as might not be unfit for professional nor obscure to general readers. The symptoms of the various diseases

are stated simply, together with the concurring circumstances, by which they are modified or rendered doubtful; and it is hoped that both nurses and mothers may by this assistance be spared much distress, that they may be enabled early to recognise the invasion of serious disease, and to obtain immediately the requisite assistance—and that they may be taught to regard the really lighter ailments of children as unimportant and without alarm, as circumstances which must naturally be expected with every infant. At the same time, those common medicines are mentioned which may usually be given with impunity; and with regard to calomel and opium, remedies far too commonly employed in nurseries, I have laid down such cautions as I cannot but hope, will give a check to, if it does not entirely prevent their inconsiderate exhibition.

In thus endeavouring to place medical information before the public, I do not think that I run the hazard of inducing rash and ignorant people to tamper with medicine. It is, indeed, only while they are ignorant that they will tamper; give them knowledge and they will fear, where before they rushed blindly forward. The question, indeed, is not at this period whether

such information shall be communicated or not; but whether we shall suffer the nursery to be overrun by popular prejudices, and perpetually to obstruct the physician in his treatment of disease, rather than substitute for such prejudices the opinions of science. Could this last object be effectually obtained, no greater benefit could be conferred upon the medical profession; in no other way could the interests both of the public and of medical men be better consulted.

It is not, then, either my intention or expectation to teach unprofessional persons to treat disease. I do not pretend to lay before them the whole arcana of physic so plainly, that "he who runs may read," and simply for this reason—that it is impossible; such pretensions never will be made but from fraud or from ignorance. Not, indeed, that there is any particular mystery which men of common intellect and industry may not learn, but because the principles of medicine, more than the principles of any other science, cannot be learnt without industry, and because even when the principles are known, just as in music or drawing, a certain degree of practice is also necessary to form a master. It is utterly impossible that any individual can understand the theory and treatment of disease who

does not understand what are the functions of the body when in health, and how can such functions be known by those who are utterly unacquainted with anatomy and physiology; how shall he know the function of the lungs who knows nothing of their structure?—or take, for instance, in disease, the single symptom of palpitation of the heart. Every one is of course capable of seeing that such a symptom is present, but every one is not capable of discerning upon what it depends. It may depend simply upon some affection of the nervous system, it may be sympathetic with a weakened state of the stomach, or again it may be produced by some alteration in the structure of the heart. Here then it must be manifest that practice alone, the habit of investigating symptoms, can enable men to form an accurate judgment, and we may also see how uncertain must be their success who only look to the evident symptoms. We every day are told of remedies by unprofessional persons which have cured this or that disease, sometimes a disease which, like true consumption, we know to be utterly beyond the power of medicine; and this unquestionably arises from inaccurate observation. Those symptoms only are noticed in which diseases resemble each other, not those in which

they differ. I would, indeed, strongly impress upon all unprofessional persons, and even upon those who, well acquainted with the principles of medicine, are yet unaccustomed to its practice, the following passage from Dr. Beddoes Essays:—" One thing too must carefully be held in mind during the perusal of this and the following tracts. In the present general deficiency of preparatory knowledge no writer in his senses will think of enabling the unprofessional to distinguish diseases with certainty. It is sufficient to make it clearly understood when there is room for apprehension. Practitioners of medicine, as well as judges and juries, must often proceed upon circumstantial evidence."

But if mothers must not expect to attain from books of any kind such an acquaintance with medicine as will enable them to distinguish disease, they may acquire with regard to the management of infants, such assistance, as may prevent the occurrence of illness, and it is to the section on this subject that I would most particularly refer the unprofessional reader.

It must be confessed, indeed, that this section is sufficiently short, for the subject itself consists of numerous and minute details, upon which

whole volumes rather than mere chapters might be written. But to what good purpose would it serve to enter into such details? Children differ so much in natural constitution, in temperament, and in vigour, that no two can be managed exactly in the same way. One child will require more food than another—to one flannel will be absolutely necessary—in another, the irritation it occasions is so intolerable that it must be withdrawn. One not only bears exposure to cold at a very early age, but is invigorated by it, while others shrink from even moderate cold, and suffer from inflammation of various organs if by chance they are exposed to it. They are general principles only therefore that are laid down, and my endeavour has been to compress the subject as much as I could do without rendering it obscure.

There is, however, one part of the management of children into which I have not entered, but which, nevertheless, ought not to be passed entirely over. I mean their moral and intellectual management; but it is only as connected with the health and future well being of the individual that I feel called upon to notice it. Certain dispositions by which the present age is characterized render this almost imperative.

Amidst the dispositions now referred to, none strikes an attentive and humane observer with more pain, than the determination evinced by some parents to make their children, at a very early age, extraordinary proficients in science and literature. To such an extent, indeed, is this carried in many instances, that could we forget the consequences to the wretched victims of this misnamed intellectual system, its absurdity would excite nothing but laughter and ridicule. It must not, however, be so lightly regarded.

It ought to be constantly remembered by those who have the care of children, that the mind acts through corporeal organs—I employ the common language of the day without intending to give any opinion upon the nature of the mind itself—and that upon the perfection of the organs the perfection of every mental operation depends.

The organ peculiarly destined for the intellect and passions is the brain, and like every other part of the animal system, its organization is at first incomplete, it strengthens with the strength of the individual, is most perfect and vigorous in manhood, and decays as old age advances. Every mental exertion is a function of the brain,

every emotion is dependent upon it. If we think, our brain is exercised; if we rejoice, there is some corresponding action in the brain; if we grieve, there is still some change in the mode of its function. We can neither think nor feel without exerting it.

Such then being the case, let us use the analogy of other organs to direct us with regard to this. The young infant takes fluid food, because the stomach is not able to digest it in a solid state, and months must elapse from birth before such food can be given with impunity. If, as is too often the case, injudicious mothers feed their infants improperly, in a longer or shorter time serious disease almost inevitably ensues; often the stomach is so destroyed by over exertion, that the consequences are fatal. It is exactly the same with the brain.

It is no new observation that children, who in early life have exhibited great mental activity, grow up stupid and heavy—that the promise of the boy is not fulfilled by the man. It is also well known that very lively children are far more liable than others to acute inflammation of the brain, and that the attack of this disease is often immediately preceded by a display of more than

usual intellectual brilliancy. How often have I been told, that a child suffering under this frightful malady, had but a few hours before been full of "life, and splendour, and joy,"—how often has the fond parent dwelt with distracting tenderness upon the hope so suddenly broken, which the vivid imagination of his child had but too strongly excited! But either of these terminations are the natural result of over-stimulating the brain, and in various degrees are daily manifested.

The first effect of mental exertion is to induce greater activity in the circulation of the brain, and not improbably a greater flow of blood to the organ. If the exertion be carried on very long, both the circulating and nervous systems become exhausted, and the mind is in that state which is known under the name of fatigue. If carried still farther, actual exhaustion occurs, and the mind is altogether incapable of even the slightest exertion. Fatigue is therefore the signal for rest—the notice by which nature indicates that the brain can be no longer exercised without injury. In the adult this is the regular series; and because the brain is not very excitable it can be borne with impunity. In infants and very young children the case is, however, far different. There is always a great tendency in

their tender system to carry every process to an excess, and hence that flow of blood which merely feeds the brain of the adult, may in the infant excite active inflammation.

In stating, however, the matter in this way, I have stated the extreme case; but much injury may be done to the brain without either exciting attention in the parent, or endangering the life of the child. There may be a less degree of inflammation excited, which shall slowly but surely destroy the intellect. The progress of such a case is this :—The child, from having been quick and active, becomes rather less so, but in no very marked degree, and his vivacity and mental acuteness go on decreasing, till it sometimes terminates in actual idiotcy, or in the most favourable cases, it is a change from considerable brilliancy of intellect to dullness and stupidity. Thus may the too anxious haste in rendering a child learned, destroy its own object.

Again, it is not merely in the mental faculties that this evil result is seen, but upon the body also. Convulsions, epilepsy, and palsy may be excited by it; or farther, such a weakness of the bodily frame may be induced as to render it easily influenced by any circumstance which

may be favourable to the production of disease. The nervous system is not merely the instrument of the mind, it plays an important part in every function of the body; and whatever has a tendency to exhaust it, must leave the body proportionably enfeebled. But the experience of every person of common sense will give abundant instances of the injurious effect of mental exertion upon the corporeal system; there are, perhaps, few individuals who have not, more or less, experienced it. Let it then only be remembered, that this which acts injuriously upon the adult, may have even fatal effects upon the child.

It may reasonably, then, be demanded, at what age should children begin to learn, and in what way should their early instruction be conducted. The first question may, in a very modified manner, be answered at once. Regular habits of learning or task-work should not be commenced before five years of age. I say task-work, because much may and will be learned by children voluntarily, and imperceptibly; and some children will acquire the first rudiments of literature with much less trouble, and much earlier than others. Whatever is done under five years of age should be done voluntarily, and the

inducements offered should rather be to exercise the body than the mind; yet much real knowledge may be communicated in this early period of life, and even the first habits of attention may be formed by merely oral intercourse, and often by reading. In this way the first great truths of religion may be taught, and some of those great revolutions of opinion which mark particular periods of the history of mankind. In doing all this also, the attention must be voluntary; and those who have never, under such a plan, watched the progress of the infant mind, will be surprised at the degree of information which children sometimes will thus acquire.

With the exception, however, of the great truths of christianity, which never can be communicated too early, if the child can be made to comprehend them, it is of much greater importance to educate their observation, and to render them accurate observers of things before them. A little common sense, indeed, would shew us, that there is quite sufficient in the surrounding objects to exercise their early mental powers. Every thing at this age is unknown; information, which appears to be almost innate, and merely to grow with our growth, is in fact obtained by the continued exercise of the senses

and the intellect. We are too apt to despise this knowledge, and to think humbly of it, because we are, for the most part, forgetful of the means by which it has been acquired. Yet let any one reflect upon the amount of those acquisitions which are necessary for the common purposes of life, and he will no longer regard the first five years from birth unemployed, though little or no knowledge should have been obtained of artificial signs; though a child should not be able to spell the hard Hebrew words of the Old Testament, or to point out all the great cities of Europe upon the map, while, like the showman at the tower, he descants with great learning, in language which he does not understand, upon subjects which he cannot comprehend.

I shall only make one additional remark upon this subject. It is imagined by many, that if learning be converted into an amusement, no mischief can ensue; and it is unquestionably true, that the same quantity of exertion being made, that which is voluntary will be less injurious than that which is forced; but this is all—excitement is still excitement, in whatever way it may be produced; and if a child be kept, whether by fear or by enticement, in a continual state of mental excitation, the consequences must be most mischievous.

What has now been said, it must be remembered, is entirely independent of the evil which will result from too early inducing sedentary habits, and taking away from children the desire and the enjoyment of active bodily exercise, without which it is impossible that health can be at any time preserved.

Some part of the observations on the management and diseases of children were published some years ago, in the form of a review, in a Medical Journal. I mention this merely that I might not be supposed to have appropriated, without acknowledgment, what does not belong to me.*

The Essay upon some forms of Spinal and Cerebral Irritation was published in the course of last year in the Midland Medical and Surgical Reporter. The opinions which I there ventured to bring forward, have since received abundant corroboration from many most intelligent members of the profession ;† and the essay itself has been fre-

* Since the above was written I have seen Dr. Marshall Hall's Observations on the Bleeding of Children, and I think it therefore necessary to mention, that what is stated on that subject in this work, is nearly a verbatim copy of remarks published in the Medical Repository for August, 1826.

† Particularly by Mr. Teale, of Leeds, whose work on Neuralgic Diseases is one of the most valuable additions to English medical literature that has been made for some years; by Dr. Palmer in his popular Illustrations of Medicine; and by several writers in the medical periodicals.

quently referred to in terms of approbation, with which I should be ashamed of myself if I did not feel gratified. I had scarcely, indeed, dared to hope that it would have attracted attention.

It is now republished, with such additions and illustrations as more extended experience has enabled me to give. This experience has served more and more to confirm me in the opinions laid down in the paper; and it is most satisfactory to find, that similar conclusions have been arrived at by many other members of the profession, without communication with each other. Such a fact is a strong circumstance in favour of their truth.

Birmingham, March 4, 1830.

ON THE

MANAGEMENT AND DISEASES OF CHILDREN.

CHAP. I.

ON THE MANAGEMENT OF INFANTS.

THE management of infants comprehends three essential objects—their food—clothing, and exercise, and the consideration of these things necessarily commences immediately upon birth.

It must be remembered, that infants, like the young of other animals, are completely in a state of nature—that they have not yet acquired artificial wants inconsistent with their real well being, and that the nearer their treatment approaches that which nature indicates, the more will the health both of the mother and the child be consulted. But to know exactly what nature does indicate requires the most attentive observation—from superficial notice the most erroneous inferences have too often been drawn.

The common custom, upon the birth of the child, is to wash the head with brandy or some other stimulant—to bind the navel tightly round with a roll of flannel—to dress it with long clothes, to fasten the dress with numerous pins, and then to cram it with rue tea; or should the nurse gravely disapprove of this dose, with some other equally rational medicine—the least that is done, is to administer abundance of pap, that the child may be kept quiet till it is supposed to be proper time to put it to the breast.

Now in this procedure some things are innocent, but useless—others are decidedly irrational and injurious. The application of brandy is, of course, of no importance; yet upon what ground it is employed, it seems difficult to decide. The use of pins, however, is exceedingly dangerous, and many most serious accidents have occurred with infants from this practice; and the administration of medicine without any real reason, and cramming the child with pap, are as absurd as they may be mischievous. To consider, however, separately, the three points which are above-mentioned, I shall commence with the diet of the infant.*

* The following circumstances attendant upon the fall of the umbilical chord or navel-string, &c. could not very well be admitted in the text—I have, however, thought it advisable to insert them in a note.

The fall of the navel-string is altogether an action of life;

DIET.

The moment the child is born he instinctively begins to suck; place the finger in its mouth and this is immediately perceived. For the first few hours his attempts are weak, but they gradually become stronger, till he is enabled complete-

and the process by which it is effected never commences in a still-born child, and ceases instantly should the child die before the chord has fallen. The first phenomenon is the desiccation of the chord—and this takes place only in that part which is attached to the infant; the portion attached to the after-birth putrefies, but does not dry.

The first appearance in the chord is its withering, and becoming flaccid. After a short time, varying from a few hours to several days, it becomes dry and hard in its whole length, and is then ready to be thrown off. This desiccation of the naval-string is a strong evidence that the child has lived for some hours at least after birth. Of twenty-five infants examined by Billard, and in whom the chord was quite dry—five were two days old—nine were three days old—five were five days—four were four days—one one day—and one was a day and a half old—three days then is the usual period at which desiccation is complete. The separation of the umbilical chord is not less different. In twenty-one infants examined by Billard where this separation was complete, the time varied from two to fifteen days—and the ordinary period was from four to five days. Billard very properly remarks that this, though the general rule, is very liable to exceptions, and that in cases requiring legal investigation, too much stress must not be laid upon it.

The mode in which the chord separates also varies. With many there is neither inflammation nor suppuration, but the dried portion falls off without any sore remaining. This variation appears to depend upon the volume of the chord. When

ly to exhaust the mother's breast. We may be sure then, that nature has intended its food to be taken by suction, and a little consideration will sufficiently prove the expediency of it.

There is reason to believe that the function of digestion commences by the admixture of the saliva of the mouth with the food, and that this

it is large, some inflammation and suppuration generally ensue; when it is small, the mere desiccation of the chord ensures its separation. Billard has entered much into the physiological causes of this difference, but it is unnecessary to follow him in this point, especially as his explanation is entirely hypothetical.

It is advisable to notice here, that the bowel often protrudes in young infants at the navel, from the opening through which the chord passes being insufficiently closed. Whenever this happens, the bandage usually employed should be slightly padded over the navel, and if properly applied, a very short time will be sufficient to overcome the defect. The bandage, however, should not be tight, but merely sufficiently firm to keep the pad in its place.

Another circumstance which takes place in infants, but which has been little noticed, is the exfoliation or separation of the scurf skin—like the separation of the navel-string, the period at which it occurs greatly varies. It is thrown off either in small furfuraceous scales or in large flakes. According to Billard, it is usually most manifest from the third to the fifth day from birth.

In some cases this exfoliation is scarcely observable—the skin separates in small powder, and neither in flakes nor scales. Its duration is very different, and in some cases Billard has seen it as late as two months after birth. In children who suffer from marasmus, it is even longer.

is a very important process. The infant has no teeth, and consequently no power of mastication—he receives his nourishment in a liquid state from the mother, and he receives it by suction, the only manner in which, in the absence of mastication, the admixture of the saliva with the food could be effected. We may see then the irrationality of giving food by any other means than suction, and it only remains to enquire if it be necessary to give any thing before it be applied to the breast of the mother, more especially as sometimes thirty-six, or even forty-eight hours elapse before any milk is secreted. In all ordinary circumstances however we may be still secure that nature is the most judicious guide, and that if milk be not secreted it is not necessary. In extraordinary cases the judgment of the medical attendant must necessarily be exercised.

But the fact is, that very much error has, and still does exist upon this point. In the first place, in most women the breasts contain milk for a month at least before delivery, and in the second place, there is no reason for waiting till the milk is secreted should the breasts contain none. The application of the child to the nipple encourages the secretion, and is to be regulated entirely by the strength of the parent. This greatly varies in different individuals.

In some the exhaustion after labour is very great, and continues for several hours, or even

for a whole day—others recover almost immediately, and even in this country I have known a woman confined one day and walking out the next to a considerable distance. The child should then be put to the breast as soon as the mother has recovered from the immediate exhaustion of labour. In this way the breast, tender probably, and easily excoriated, gradually becomes able to bear the increasing strength of the child. At first its suckling is little felt, its efforts being feeble, and scarcely sufficient to draw in any nutriment; gradually the milk is more plentiful—the exertions of the infant are more vigorous, but at the same time the breast is become more capable of enduring them. No other food whatever ought to be given.

For the first two or three months the child, if in health, sleeps almost incessantly, waking only at those times when it requires food. So long as it is confined entirely to what it receives from the mother no material mischief perhaps ensues from permitting it for the first month to suckle as frequently as it may seem inclined, more particularly as whatever is taken beyond what is necessary, is usually rejected by vomiting. Hence the fact of vomiting is esteemed salutary by the generality of nurses. This, however, is not really the case; vomiting under any circumstances proceeds from an inverted, and consequently an unnatural action of the stomach,

and while it removes a pressing evil can hardly fail to induce some weakness in the digestive powers. Whenever then a child is observed to vomit, care should be taken to give the breast less frequently, till the point is attained at which no food is rejected. As a general rule, it is quite enough to apply the child to the nipple once in two hours for the first two months, and gradually to prolong the interval as it grows older. While the mother can suckle the child as often as this, no other food should be given until the first teeth appear, nor is the age of the child to be regarded alone, independently of the period of dentition. This occurs in some children much earlier than in others, but it is the only sure sign that the stomach can digest solid food.

The diet of the child then previous to the period of dentition is very simple; it ought to consist of the mother's milk alone, and this taken by suction. But it sometimes happens that the mother is unable to nurse, either from the want of secretion in the breasts, or from an irremediable tenderness of the nipples, and sometimes, though much more rarely than may be supposed, from real debility. It then becomes an important object to consider what is the best substitute for the breast.

And first, we should imitate nature as nearly as possible in our mode of giving food—it should be liquid—easily digested, approaching as nearly

as possible to the nature of the maternal milk, and it should be taken by suction.

A bottle is now commonly used, to which a piece of leather or parchment may be attached to imitate the shape of the nipple. In arranging this part of the apparatus care should be taken to fix it firmly, and that the fluid given may not pass too rapidly. If it does, one great object in employing such a mode of giving food to the infant is done away with. A piece of sponge is sometimes inserted to answer this purpose, within the leather or parchment: nor is there any objection to it, provided it be well secured.

With respect to the food employed under such circumstances, much must depend upon the constitution and health of the infant, and the diet must in many cases be repeatedly changed, till that particular form is discovered which will best agree with the child.

Asses' milk has been recommended as the best substitute for the maternal breast, when it can be procured; and from the little curd it contains, in which respect it nearly approaches the human milk, it probably does hold the first place. There are, however, few situations in which it can be obtained in any quantity, and other substance must then be employed.

Should the child's bowels be costive, a thin oatmeal gruel, mixed with a very small quantity of milk, may be given; or veal or mutton broth slightly

thickened with oatmeal, and deprived of fat, may be used. If this does not agree with the child—if it appear to produce flatulence, pain in the bowels, or sickness, a preparation of wheat, sold under the name of farinaceous powder, may be substituted. This should be made into a thin gruel, and sweetened with sugar.

Another kind of food may be made with the biscuit powder, commonly sold in the shops, or with arrow root, provided the arrow root be genuine; but genuine arrow root is a very difficult thing to procure, most of what is sold under that name being mixed with common wheat or potatoe flour. If the child's bowels are relaxed with these kinds of food, benefit is often derived from employing rice, either in water alone or in milk and water. The rice should be boiled for several hours, till it becomes a simple pulp, and till much of it is dissolved in the fluid. This may then be strained off and given to the child through the bottle. The rice itself should never be taken till the infant is at least four months' old, and then for some time very sparingly. In all these preparations sugar may be added to make them palatable. Another kind of food may be prepared for very young infants, by separating the curd from the cow's milk, and giving the whey alone, or thickened with some one of the substances above-mentioned.

Whenever a proper diet is discovered it should

be constantly adhered to, nor should variety be ever sought after. The rule which nature points out should be constantly followed. When the child is nursed no variety can be afforded; it receives, day after day, the same food from the maternal breast. When dry nursed, the same plan may be observed, and thus no artificial inducement will be given to the child to take more than is necessary.

Sometimes, however, every effort to bring up a child by the hand fails. Whatever may be the diet employed, the infant becomes weaker and weaker, is more emaciated, suffers from pains in the bowels, purging, sickness, &c. and the only remedy is the employment of a wet nurse.

In the choice of a proper woman for this purpose, her health ought to be the first object, and afterwards the quantity of milk she can afford, and the period of her confinement. Upon this last point very much depends, for with the age of the child the milk of the mother materially changes. That which may be well fitted for a child of six or seven months old, is improper for an infant of one month, as it contains more nutriment than an infant of their age could well bear.*

The same rule should be observed as to the intervals of feeding a child, which have been laid

* Much has been said by Dr. Underwood and others upon the management of wet nurses, and respecting their diet. But in

down for sucking, excepting that when a child is dry nursed, the intervals may be somewhat

this, as in almost every other case in medicine, absolute rules cannot be laid down. In the choice of a wet nurse, her health, as stated in the text, must be first considered; and in determining this point, her complexion, her strength, the state of her tongue, her teeth, and her past history, must all be enquired into. With regard to her management, she should take exercise in sufficient quantity to preserve her activity, yet, at the same time, she should not be permitted to give the child the breast when overheated, nor, indeed, should this be allowed to happen, if it can possibly be prevented. That the milk is liable to some change injurious to the child from this cause, is a matter of common belief, nor is there any thing in the supposition contrary to the present physiological opinions. I have not seldom seen children suffering from sickness and indigestion, where the parent attributed the disorder to her having given the breast when overheated, and when there was no other apparent source of the disturbance.

The diet of the nurse is another circumstance that has been much insisted upon; and from an anxiety on this point, Dr. Merriman remarks, that many persons have carried their restrictions too far. The fact is, that most women require more food while suckling than at other times—and the quantity must materially differ with individuals. If, however, plain food be given, and at very regular intervals, viz. three, or at the most four meals a day, nurses may be generally left to themselves—they will not take more than may be necessary; but their food should always be plain, nor should their appetite be tempted by various or high-seasoned viands. The bowels should certainly be open once a day; and in this point I completely agree with Dr. Merriman against Dr. Underwood, that it is not advisable that the bowels of a wet nurse should be rather costive than otherwise. The secretion of milk cannot be healthy unless digestion be well performed and this will scarcely be with a constipated state of the bowels.

longer, as the food it takes is not so easily digestible.

WEANING.

These general rules for feeding an infant being observed, we have next to consider the time and the mode of weaning.

The rule at present observed in this country is equally wrong and absurd. Few children among the wealthier classes are continued at the breast more than six months, and many of them are weaned much earlier; that is to say, they are weaned for the most part before they have teeth, and before the stomach has attained sufficient strength to digest common food.

Weaning ought to be a very gradual process, and should never be commenced till the first teeth have appeared. The food first employed may be such as has been recommended in dry nursing; and it should not at first be given more than twice a day, and then only in small quantities. The breast must of course be withdrawn in proportion; and never should the plan be pursued (which is so often done among the poor) of suckling as frequently after as before artificial food has been given. In a short time the breast may be entirely withdrawn in the day time, that is, provided the teeth continue to protrude, and

in ordinary cases a little solid food may be given when the child is twelve months old. Throughout, however, we must be guided by the appearance of the teeth, and till the first grinders appear, animal food should not be given. Even after animal food is allowable it should be sparingly afforded, and only every other day, and till the child has learnt to masticate, it should be exceedingly well minced. The plan I have often observed to answer well with weakly children has been to give meat one day, and the next a pudding made simply of egg and milk without any flour, at dinner, and at other times milk thickened with rice or farinaceous powder. Four times a day is sufficiently often to feed a child after it is one year old, and has began to take animal food.

In all circumstances it is of great importance not to overfeed a child, for without question this is one of the most fruitful sources of infantile diseases, even of those which, like rickets, appear to be the effect of deficient nutriment. It is, however, one of the most difficult things possible to persuade either nurses or mothers that food can do a child who seems weak and feeble any mischief. They want strength, and therefore you must give them nourishment. Their reasoning is indeed correct—their mistake lies in the mode they pursue of obtaining their object.

When much food is given, it frequently happens that the child really receives very little nou-

rishment, for the stomach is actually weakened by its own efforts. The plan, therefore, is to afford nourishment in such proportions as will best favour the powers of digestion, and this will be in small quantities, and at rather distant intervals. Let us consider the stomach simply as an animal that must not be overworked, and that rest is equally necessary in both cases to recruit the strength. Most people can recal to their mind many thin men who are great eaters, while, on the other hand, cooks who usually take food in very small quantities, are frequently very fat. Carry these facts to the diet of infants, and we shall be convinced of the irrationality of endeavouring to prevent emaciation by continual cramming. There is, however, one circumstance which frequently interferes with proper care on this head, which is the fretfulness of infants. They cry and are restless; the nurse, instead of carrying them about and amusing them, crams them with food till they are fully gorged, and till they are quiet, because they have no power to be otherwise. It is in this way that the foundation of many of the most serious diseases of infancy is laid, and the nurse increases rather than diminishes her trouble, if the whole management of the child is taken together. In truth, no reason or excuse ought to be admitted for giving food more frequently than it has been above laid down; and a very little care on

the part of the nurse will soon render the child far better tempered, and more easily managed without, than with giving food. Children over fed are always irritable.

The time at which a child should be finally taken from the breast may vary from fifteen to twenty, or even twenty-four months, according to its size and strength. Generally speaking, the longer infants are suckled the more easily are they weaned, and the more are the intervals prolonged between the pregnancies of the mother. The poor are well acquainted with this latter fact, and hence many of them nurse their children for more than two years. The Irish in this country often extend it to three years, or even more. It is certainly comparatively rare for a woman to become pregnant while she is suckling, though occasionally this does occur, and accordingly the actual performance of a duty becomes in this way the means of preserving both the health and strength of females. The intervals between each confinement are much prolonged. There is only one other observation to be made connected with the diet of children, and that is, that stimulants of every kind should be most carefully avoided. Most of the diseases of children are inflammatory, and the impropriety of stimulating individuals with this tendency is manifest. Even in debilitating diseases the utmost caution is requisite in giving wine to infants.

CLOTHING.

The next point to be considered is the clothing of young children.

At every period of life health in great measure depends upon the equal diffusion of heat over the whole body, and more especially upon the extremities, both hands and feet being kept warm. When these are cold we may be certain, either that there is a general failure in the vital powers, or that the circulation is less perfectly carried on than it ought to be; consequently, that while the circulation in the feet and hands is diminished, some internal organ, as the brain, the lungs or the bowels are overloaded. In after life this equable circulation is more easily preserved than in infancy, both by the greater vigour of the system and the ability of taking abundant exercise. In infancy, however, and in proportion to the age of the child from birth, this equal circulation and warmth must be preserved by clothing, by especially keeping the feet covered, because these are most disposed to become cold, and by watching also the state of the hands and arms. A child, therefore, ought always to wear a flannel dress, which should be sufficiently long to fall at least eight or nine inches below the feet, for the first four or five months.

When from the ability of the child to exercise

itself, it should be deemed useful to shorten the clothes so that the limbs may be exercised more freely, woollen socks should be worn; and if the legs seem to be chilled, stockings may be added. As soon as the infant becomes capable of exertion, it should be encouraged to preserve a due temperature by exercise, and then gradually the warmer clothing of infancy may be diminished.

Much, for many years past, has been spoken of hardening infants, and the most absurd recommendations are given in domestic life. It is high time to explain how this may be best done, and perhaps to state also what have really been the effects of that hardening which maintains among the poor, because this is perpetually referred to as a proof of the propriety of submitting children to great degrees of cold. There can be, however, no question but that a much greater number of the children of the poor die under seven years of age, than those of the rich; nor can there be less a question that cold, and the effects of cold, are the principal sources of this mortality. I have very often seen from ten to twenty women in a morning, who have had from ten to fifteen children each, but of whom not more than one-fifth have arrived to the age of manhood. It must, however, be acknowledged that there are other sources of the mortality of children among the poor besides cold; perhaps

the management of this class is in every respect calculated to diminish health. It is then safer to state in what way we can best succeed in increasing the natural strength and vigour of children. In searching for this, we may with great benefit consider the course pursued with some of our domestic animals, or rather the instincts which nature itself points out.

Take, for instance, the chick or the young duck; their first covering is soft warm down, of a much closer texture, and suffering the waste of heat in a much less degree than the feathers, with which they are afterwards clothed. The foal or the colt are equally well furnished—the hair of both is softer and warmer (in the foal of the ass almost approaching to wool) than the hair which envelopes the full grown animal; so far, therefore, we have a clear indication from the course of nature herself. But man has also learnt, that if he wish to rear a strong and valuable horse, he must forego all advantage from working him when young. Work a horse regularly under four years old, perhaps I might say under five, and to a certainty his growth will be stunted. But if, when he has attained his full growth, he is worked regularly, it is found that his strength increases with his work under certain limits; and if he be not regularly exercised, he becomes sluggish, feeble, and more and more incapable of labour.

The same kind of reasoning, doubtless, applies to man in every point, but it may be particularly applied to the subject of clothing in early infancy. While the child cannot protect himself you must protect him; and in proportion as his own powers are developed those of the mother may be withdrawn; but neither motives of economy nor fear of trouble, ought ever for a single moment to be permitted to influence.

These then being the principles upon which we are to proceed, we shall find no difficulty in deciding between the two extremes to which children have been sacrificed—the desire of some on the one hand to harden their children—the fear of others, on the contrary, to suffer a breath of air to blow over them. As nature strengthens them we must second her efforts—expose them to the cold, as they become more able to resist it; but by no means expect that a child, weak and feeble by nature, may be at once hardened and invigorated by a pitiless exposure to every weather.

Under every circumstance sudden changes of temperature should be guarded against, and the best means of doing this is the use of flannel. By employing always a flannel dress the additional advantage is gained of being able to expose the child to fresh air without the risk of cold, and air and exercise are as essential to health as food and clothing. But of these last I shall speak more particularly hereafter.

Next to the material of which an infant's clothing should be composed, it is important that the limbs should be free from all bandages and ligatures. The clothes should be loose and wide, so that all the movements of the child may be without restraint; and lastly, the dress should be tied, and never pinned. Cases are on record where death has actually occurred from a pin employed in fastening the clothes having penetrated into the brain.

Some remarks may still be useful respecting those parts of the body which should be most carefully guarded against the effects of cold. Custom has actually reversed nature. We clothe the head and expose the chest; and the feet, parts most easily affected by temperature, are left without any covering. Now no mischief can well arise from keeping the head cool, it diminishes the chance of inflammation of the brain by keeping the circulation within moderate limits. The effects of the sun in hot summers is matter of common notoriety; and effects of the same kind, though in a less degree, are produced by overclothing the head. In young children also, there is a perpetal tendency to an inflammatory affections of the heart. There is much bone to be found in the skull, for which purpose a large quantity of blood is required; and the process of teething greatly excites the circulation upwards. While this is the case we cannot be surprised at the frequency of water in the brain in infants;

and no question can exist, but that the habit of covering the head with flannel increases the number of such attacks.

The chest and the bowels, on the other hand, should be kept warm, that a free perspiration may be preserved upon the skin, and that the blood may not be driven in undue proportions upon any internal organ.

With regard to the feet, little attention perhaps need be paid, when a child is active and can take plenty of exercise, for the proper temperature may be thus preserved; but it should still be remembered that by some means or other this must be done.

EXERCISE.

The last points to be considered are air and exercise. The latter may be very shortly described. Every encouragement should be given to the voluntary exertions of an infant, but no force should be employed to make it walk. It should by permitted to roll on the floor, and its voluntary efforts to walk should be assisted, but encouragement should be carried no further than this. Children are excellent judges of their own strength, and will only refuse to exert their limbs when they feel themselves unable. The foolish pride which some nurses have of making an infant bear itself early on its feet is both useless

and misplaced. The effect of this, should the bones be inclined to yield, is to produce irremediable deformity. Of equal, or perhaps even of more importance for the health of infancy, is the enjoyment of pure air, and the want of it is, without doubt, one cause that the mortality of towns is greater than that of the country. Here, however, as in the case of diet, we have to combat errors, arising from prejudice, idleness, and sometimes a silly love of order and discipline.

Children are often confined for weeks together in one room, with the exception of those intervals during which they are taken out by their nurses for a formal walk. Now that a play room should, if possible, be provided, is certain, but that a child should be completely confined to a single room cannot be otherwise than injurious. Wherever this arrangement is made the nurse is of course constantly with the children, but her own comfort and feelings, not their welfare, is always first consulted. From the confinement she naturally becomes very susceptible of the changes of temperature, and takes every care to guard herself against it. Hence the door and windows are kept closely shut, and a nursery when merely a nursery, is nine times out of ten a perfect oven. The consequence to the children is an increased liability to be affected by cold, and a general feebleness of the bodily system. Their spirits also suffer at the same time, and,

though there may be occasional bursts of merriment, we seek in vain for the sustained buoyancy of healthy childhood.

When then, from circumstances, as most often happen in large towns, children are confined for the greater part of the day to the house, they should have, if possible, the range of several rooms, into which the air should be freely admitted at all times; and in the next place care should be taken that they may be carried or walk out on every favourable opportunity.

Notwithstanding, however, every care being taken in the different points above-mentioned, the child will sometimes remain feeble and unhealthy, suffering repeatedly from the attacks upon the bowels, the chest, or the head. It will then be advisable to remove him at once into the country, and to give him the liberty of constant exercise in the open air. This is indeed frequently the only recourse of medicine, but it is at the same time most beneficial. Often will it happen that after medical aid shall have entirely failed, the pure air of the country will completely remove every ailment. Children bear also a much freer diet when they can have exercise in the open air, their digestion improves, and many articles of food, and in larger quantity may be taken, not only with impunity, but with benefit, which, under other circumstances would be highly injurious.

These then are the general directions for the management of infants from birth till they are three or four years of age—they must, of course, be modified according to the strength of the individuals, but the general indications must be constantly retained in sight.

CHAP. II.

DEFORMITIES.

CLUB FEET.

GREAT uneasiness is sometimes caused by deformities in infants, and by marks of various kinds. Where there is actual deficiency of a part, as when an arm or leg is wanting, of course no remedy can be had. This, however, is not always the case, and deformity sometimes arises, not from the deficiency of parts, but from their wrong direction. It happens most frequently with club feet, and in the majority of instances, this species of deformity may, by care in early infancy, be completely removed. There are, however, other cases of club feet, in which the different bones are so little developed that nothing can be done for them.

Instruments are scarcely ever serviceable in the cure of club feet, and in very early childhood are worse than useless. Their treatment is to be attempted by rolling, and sometimes by the addition of slight splints, according to the direction of the deformity. If the rolling be properly done, the foot quickly takes its proper

form, though the heel will still remain pulled upwards, and the toes will be directed more downwards than they ought to be. To remedy this, the nurse should be directed to work the ancle frequently, and by perseverance the child will at length be enabled to place the foot perfectly flat on the ground. Even when no rollers have been employed, rubbing the ancles and feet, and twisting them gently into their proper form, has a considerable tendency to remedy the defect. The rolling must, of course, be managed by a surgeon, and by one well acquainted with anatomy, as the success of the treatment depends entirely upon the judgment with which it is conducted.

I have seen many cases where this plan has been carefully followed, in which, after a few years, scarcely any defect has been manifest. The best proof that the foot is assuming its proper direction, is the increased nourishment of the leg. Wherever a club foot exists the leg of that side is smaller than the other, but it gradually becomes larger as the cure proceeds. One caution should be particularly attended to in the rolling, viz. that it is not fastened too tightly, as in this case the foot cannot receive a proper degree of nourishment.

CONTUSIONS.

Infants sometimes suffer considerably from contusions during labour, and puffy swellings of various sizes occupy the scalp. They are, however, of no consequence, and generally disappear spontaneously in the course of a week or two. It is scarcely ever necessary to open them. Their disappearance seems occasionally to be accelerated by a lotion composed of the liquor Ammoniæ Acetatus of the London Pharmacopœia mixed with equal quantities of water and spirits of Rosemary or Rose-water. The latter are chiefly useful in correcting the unpleasant scent of the liquor Ammoniæ Acetatus. The parts are to be bathed frequently with this, but not so as to induce any general chilliness in the infant.

MARKS OF THE MOTHER.

These, which have been pretended at various times to resemble cherries, strawberries, or any other object, according to the fancy of the mother or nurse, are composed of an irregular network of bloodvessels, which sometimes become very large, and even give rise to severe hæmorrhages. They appear upon different parts of the body, and I am not aware of their being more frequent upon one part than another. Se-

veral plans have been proposed for their cure, and in particular cases all these plans have been successful. The only certain cure, however, is their removal by the knife, and the sooner this is done after the first month from birth the better—the less mark will be left afterwards, and the less danger will arise from hæmorrhage. A frequent situation is on the lower eyelid, and if in this case the operation be performed while the spot is small, scarcely any mark will be perceptible in after life.

Vaccination has in some instances been successful in removing these tumours, but it cannot be entirely depended upon.

HARE LIP.

No remedy evidently exists for this, excepting an operation. The time of performing it must be left however to the discretion of the surgeon. Generally speaking, the sooner the operation is performed after teething is completed the better, but the experience of Sir Astley Cooper, and most other surgeons of eminence, are adverse to its earlier performance. Sir Astley Cooper states, that if a hare lip be operated upon before the first teeth are completely developed, not only is there difficulty in keeping the lips of the wound together, but frequently much danger

has been incurred. In not a few cases even death has been the consequence.

Occasionally the palate is wanting in children with hare lips, but for this nothing can be done in early life. Later an artificial palate may be worn, which serves, though only in a slight degree, to diminish the inconvenience resulting from it.

These appear to be the principal congenital deformities which it is necessary to notice, as they are the only kinds which are more or less under the control of art.

CHAP. III.

RULES FOR APPLYING MEDICAL REMEDIES IN EARLY LIFE.

SO far as emetics, purgatives, and most other medicines are concerned, it will be sufficient to state that the doses should be much smaller than what are given in maturer age. As in the course of the work, the quantity adapted for different diseases and different ages will be mentioned, this is all that need be remarked in this place. There are, however, remedies which cannot be considered in this way, and which frequently require such modifications as cannot be reduced merely to diminished quantity. Such are blood-letting, the external application of irritants and blisters, and calomel and opium, two of the most useful, at the same time that they are two of the most dangerous remedies which medicine possesses. Upon each of these I shall therefore remark more particularly.

BLOOD-LETTING.

With respect to blood-letting, the same general rule must govern us in infancy as in maturer age; our only sure guide is the effect produced.

If, for instance, our object is to overcome an inflammation in any part, blood must be drawn till this is attained, or at least, till the pulse is reduced. Experience, however, proves to us that fainting from loss of blood is much less easily borne in childhood than in adult age, and that it is more dangerous in proportion as the patient is younger. Even in adults, where there is much general weakness, convulsions frequently ensue—nor are these unattended with danger; and infants are even more likely to suffer from depletion than adults. But independently of the evil that may arise from convulsions, infants do not readily recover from simple fainting. The author of the article "Enfant," in the Dictionaire de Medicine, states, that he had seen young children die from fainting produced by the application of a few leeches, and others very difficultly roused by the employment of the most powerful external stimulants. My own experience has unfortunately amply confirmed this statement. In several instances in which leeches had been employed, and in which the nurse had been directed to let them bleed for some time afterwards, I have known the most fearful debility ensue; and in one case, where only two leeches were employed, the result was fatal. It is dangerous to leave any discretionary power with a nurse; and it is better therefore to order a larger number of leeches at once, and that the bleeding

should be restrained as soon as the leeches have fallen, than to incur the hazard of a subsequent bleeding.

The considerations, then, that we should keep in view respecting blood-letting in children, are the readiness with which they sink from exhaustion, and the difficulty of restoring them. But while the judicious physician will be especially careful never to lose sight of the circumstances, he will not, on the other hand, suffer himself to become an inert and inefficient practitioner. Some purposes are to be fulfilled by art, and some must be effected by nature.

Accordingly, if circumstances demand blood-letting; if, for instance, high inflammatory action be present, he will bleed in the first instance boldly and decidedly; and afterwards his attention will be paid to ascertain the strength of his patient. It may be, that the vessels having been unloaded, nature may be able alone to restore the equality of the circulation; or, at least, we may assure ourselves that farther depletion would so debilitate, that all the vital powers would sink at once. In the one case depletion, at the best, will be useless, in the other it will be injurious. It may, on the other hand, happen that the patient's strength may bear, and that the disease may demand a repetition of the blood-letting; but the decision between these two cases ought not to be made carelessly; unquestionably, to

ascertain it is often difficult, and sometimes experience only can direct us. It is not enough that in inflammation in the lungs the difficulty of breathing shall remain, to justify us in bleeding again, for the oppression of the breath may have some other cause than simple inflammation. There may be an accumulation of mucus in the bronchial tubes, or even in the air cells of the lungs, which an infant cannot remove by expectoration; or there may be congestion in the weakened vessels of the lungs, not precisely of an inflammatory nature. Either of these states will be best removed by attending to the patient's strength, exciting his excretions, particularly the urine, and by extreme caution in the use of stimulants. If an infant can bear a slight stimulus, it is often highly useful; but it must be remembered, that should inflammation be a second time excited, the weakened state of the system will prohibit any active measures, and the chance of subduing it must consequently be lessened.

The pulse is scarcely to be depended upon as a criterion of the propriety of bleeding—at least, it requires much more acquaintance with the phenomena it exhibits than most medical men possess, to take it as a guide. It has been stated that the violent beating of the large arteries, especially the carotids, is always a sure indication of the necessity of bleeding, but it is certainly not the case. In some constitutions large

bleedings produce powerful and irregular action of the heart, and consequently a full and violent pulse; but so far is this from indicating the necessity of repeating depletion, that the very contrary is true; and opiates are more efficient than any other means in allaying the over excitement.*

Great attention ought also to be paid to the state of the extremities. When the hands and

* Upon this point a few observations may not be misplaced, for the mistake is too general, that a large full pulse decidedly indicates the propriety of depletion. It would be easy on this subject to propose a theory which should prove the contrary; it is better, however, to repose on facts, for at present we have not materials to establish a theory.

A gentleman, twenty-two years of age, was attacked with fever; he had within a few days of the attack lost a sister by the same disease. He was bled early, but without much relief. Towards the tenth day he was seized with violent delirium, for which he was bled again: the violence was abated (probably by the exhaustion produced) but without diminution of the delirium. Within twelve hours of the last bleeding I saw him. He had previously had ʒi. of laudanum, which had procured him two hours' sleep, and he was refreshed; but in a short time became very restless, and twenty drops more were given him. It was at this moment that I visited him. His pulse was large, full, and irregular; but there was a tenseness in it which to one unaccustomed to the examination of the pulse, would have been highly deceptive. He was still slightly delirious, but could be made, by a little excitement, to attend to the matters around him. The opiate was repeated without reference to the dose, but with the purpose of procuring sleep, which, after he had taken another drachm of laudanum, was obtained. I ought to mention, that his pulse was 121 in the minute. He slept for

feet are cold it may be dangerous to bleed; and even when bleeding may be proper (which however it rarely can be under such circumstances) the heat of the extremities should be first restored.

four hours; his pulse, when he awoke, was reduced in number, being about 112; but it had lost the peculiar jerk which it previously exhibited, and was perfectly regular. From this time his recovery was progressive, but without depletion.

I have repeatedly seen the large bounding pulse sink rapidly, and the patient die, after a second bleeding. The older physicians were well acquainted with the difficulty of judging of the pulse, and thought and wrote accordingly. Nothing but the greatest experience and attention can enable a physician to form any accurate opinion, and even with all he will be sometimes mistaken.

Since the above was written, some experiments in blood-letting, by Dr. Seeds, which, on their former publication, had escaped my observation, have been republished. They are so important that I gladly insert some of them here.

"1*st Experiment.*—The left crural artery of a healthy dog was divided. The struggles were incessant, and greatly accelerated the pulse, but he scarcely seemed to suffer pain, except on the first division of the integuments. In little more than half an hour from the commencement, the artery of the right leg was divided; the vessel first opened at this time beat very languidly, and in a short time ceased to pour blood, whilst the other continued active to the last. The heart beat very strongly, and its motions were distinctly perceptible over the whole thorax and abdomen. When the limbs had become cold, and no sign of life was present, the heart still palpitated, the respiration was still laborious. In an hour life ceased. On dissecting the body, we found the spinal marrow pale, except at the top and bottom, where it was slightly red; on the contrary, the nerves on the points were whitest, and reddish in the middle. The sinus venosi were bloodless. The dura mater

In many instances, indeed, this object being attained, the symptoms will vanish for which bleeding had seemed to be demanded. Bleeding can only be effected in very young children

cerebri was slightly red, and one rather large blue vessel was seen on the corona. The substance of the brain was very white, as were all the nerves, except the optics and first pair, whose base was slightly red. The ventricles were so full of water, that till we had witnessed a similar result in other experiments, we were doubtful of its having been all effused during the experiment. The right side of the heart was very soft, and contained some black clotted blood; the left was very hard and thick. The viscera were generally pale. Some of the mesenteric glands were full of a dark coloured liquid. The palpitation of the heart, the most conspicuous symptom in this case, was very great; it plainly shows in what state of the body such are likely to happen, and it likewise warns us not to judge of the vigour of the blood from a partial examination, for not unfrequently, when death is just at hand, the heart beats as though it would burst the thorax; at other times, when the smaller vessels are collapsed and deprived of vitality, the larger trunks are powerfully contracting. On dissecting the body we found that every part was bloodless, especially the different parts of the nervous system.

4th Experiment.—The carotid artery of a very small dog was opened in the middle of the neck; the blood rushed impetuously to the distance of several feet. In two minutes the strength of the animal sunk, nor did it ever recover vigour. The motions of the heart, though feeble, were regular; the breathing was hurried, and somewhat irregular. For a considerable time before death the body was alternately bent and contracted, in a manner resembling shivering; shortly before death the breathing became hoarse and laborious. The cries of the dog were at first shrill, but gradually became feeble; and at last a feeble howl only was uttered: the face and limbs

by means of leeches; but as soon as they grow old enough, that is, as soon as their vessels are sufficiently large, there is not the slightest objection to opening a vein. In the application of leeches,

speedily became cold; in ten minutes life ceased. The limbs at this time were flaccid and flexile. The viscera of the abdomen appeared plentifully supplied with both red and blue vessels. The small intestines were somewhat contracted, and contained three or four lumbrici. The urinary bladder was rugous, and empty. The vena cava was pretty full; and some small dark clots were found in the aorta. The lungs, when inflated, were white, but when collapsed they appeared reddish. A small quantity of blood was found in most of the large veins. The dura mater of the brain was colourless and transparent, except at the falx, where there was a red spot, and some slight adhesions. The lateral ventricles contained a great quantity of water. The plexus choroides was pale; a few red vessels were seen amongst the convolutions, and one blue one distended on the corpus callosum. The nerves were colourless, except the optics, round whose origins a few red vessels were seen. The sinuses were quite bloodless. As for the spinal marrow, its tunics were rather red at the top and bottom. No venous blood was to be seen in any part of the vertebral column.

5th Experiment.—All the larger veins of the legs were opened in a small dog. At first the pulse was accelerated; soon after it became slow and languid. The heart's motions, though feeble, were never irregular; and, indeed, long before death, they could neither be seen nor felt. Borborygmi were early heard, and lasted a long time. The breathing at first was hurried; soon it became slow and laborious, at last convulsive. The pupils were frequently examined; they became gradually less and less obedient to the influence of light, and at length ceased to contract altogether. Slight spasmodic contractions took place, first in the femoral and abdominal muscles, then the head, neck, and fore legs, were likewise powerfully affected

the great rule is to apply enough at once, that the patient may not be fatigued and teased by their repetition.

with spasms. At this time a deep sleep seized the animal; he breathed slowly and with difficulty, and for a little time before death, respiration, at intervals, was suspended altogether. Whenever the breathing was strong and quick, the pupils recovered their tone, and the blood was more strongly propelled. In an hour death closed the scene. Some degree of stiffness was apparent in the legs, especially the fore ones. The dissection of the head was first begun. The membranes of the brain were *loaded with turgid vessels*, the larger of which were of a very dark colour. A bright red spot was observed near the cornua, where some degree of sanguineous effusion had taken place. The sinuses were full of blood. In all the ventricles there was more or less water effused; the base of the brain, and the eighth and ninth pairs of nerves, were inundated with water; a net-work of red vessels was spread round their origins, and the optics were in the same state. In the servical and lumbar regions of the spinal marrow there was a considerable degree of redness. The right side of the heart was full of blood; the left auricle contained a little; some blood was found in the large veins, and a few clots in the thoracic aorta. The stomach and all the intestines were tumid with flatus. The veins of the mesentery were turgid.—The larger veins of both legs being opened, although life was not speedily destroyed, yet it quickly brought on the greatest degree of debility; the slow weak motion of the heart, the languid countenance, the disturbance of all the functions, the apoplectic stupor under which he laboured, all conspire in proving this. The turgid state of the veins of the head was very remarkable; indeed, throughout the whole body the veins were tumid. Flatulent distensions of the stomach and bowels frequently distress the enfeebled; and it is well known that they result from excessive evacuations; all aged persons, those labouring under con-

Mustard poultices and blisters are the chief application of this kind which are employed,

stipation or too great laxness of the bowels, or a hæmorrhage of any kind, are subject to this distressing affection.

6th Experiment.—A healthy young dog was the subject of this experiment. On laying bare the internal jugular veins, we remarked that they swelled much during expiration, and vice versa. On freely opening these vessels, the blood burst forth with impetuosity, and the animal's strength sunk almost immediately. They had scarcely been opened, when the heart beat strongly and sharply, and a severe panting came on. The head, neck, and back were affected with powerful spasms. After two minutes the pupils ceased to contract; and the eyes were twisted towards the nose. In about ten minutes he died. The lungs were white with different coloured spots; a large black spot was also observed in the diaphragm. All the veins of the head, neck, and chest, were tumid; moreover, the aorta and its larger branches were slightly stained with blood. In several of the viscera of the abdomen there were black patches, particularly in the liver and spleen; and in these places they were very weak, and easily torn. The whole of the intestinal tube, as well as the stomach, was full of flatus. A little blood was found in the mesentery and omentum. The appearance of the brain was very similar to what it was observed to be in the last experiment; a greater number of distended veins were seen, and every thing was overwhelmed with water. Round the root of the fourth pair was spread a plexus of vessels, and in a less degree round the eighth and ninth pairs. In every sinus there were clots of dark blood. The tunics of the spinal cord were very red, especially the dura mater. On almost all the spinal nerves there were some degree of rubescence. The sinus venosi contained some clotted blood. The contents of the cranium and spinal canal were so gorged with blood that it

and both require particular caution, when used for infants.

The skin of young children is peculiarly irritable, and the commonest affections are very liable to be accompanied with severe inflammation. But it is not unusual for mortification to follow the employment of blisters in such subjects, and

might at first have been imagined that blood-letting would have saved the animal. It does not seem out of place to remark here, that in every animal destroyed by blood-letting, and examined by us, we always found more or less of serous effusion in the brain, cerebellum, spinal marrow, and at the origin of the nerves; thus we clearly see why those examining the contents of the cranium have so frequently observed very turgid vessels and water effused, and likewise why venæsection has, in apoplexies, so frequently disappointed the expectations formed of it."

These experiments clearly prove that effusion of water on the brain may be the consequence of over bleeding—that the brain may even be gorged with blood when the system generally cannot bear depletion—that stertor, drowsiness and spasm may result also from bleeding, especially from opening the veins. The observation respecting flatulent distentions of the stomach and bowels is also particularly worthy of attention. Within the last few days I have seen a childof eleven years of age, who was bled largely three months ago, for what the medical attendant called brain fever. She had on forty-seven leeches, and was twice bled in the arm in three days. Her countenance now is utterly bloodless, and her stomach has never recovered its tone. The moment she takes food her abdomen becomes hard and distended, and she has continued rumbling in the bowels; in addition to which she is weak and hysterical. It must be remembered, however, that these observations entirely refer to the abuse of blood-letting, not to its use.

in some cases even death has been the consequence. Under these circumstances it is highly important to guard against such occurrences, and, fortunately, there are means by which this may be done.

Whenever, from the nature of the disease, it is necessary to employ blisters, and in infants this frequently happens, a piece of very fine thin muslin should be interposed between the skin and the blister. If this is done properly, the blister rises well, and has all the beneficial consequences which are desired, but there will be no difficulty in healing it afterwards. Another object also is gained by this mode of application, viz. the difficulty which is often produced by blisters in making water, will be completely avoided. Great care, however, should be taken, that the little patient does not meddle with the blisters, for if by this or any other means the blistering cerate should be forced through the meshes of the muslin, the same evil result may ensue as if no muslin were used.

In some, and in perhaps the majority of cases, blisters may be applied for a short time only, just sufficient to redden the skin and make it tender, but not to raise the cuticle. Two or three hours will generally be enough for this, and the blister may for this purpose be used without any intervening substance. The surface, however, must be carefully washed after the re-

moval of the plaster, lest any cerate should remain, and produce the worst consequsnces of blistering.

Mustard poultices are usually applied to the feet and ancles in cases of inflammation of the brain, the lungs, or of the contents of the abdomen. They should be removed in a short time after they appear to excite pain. Like blisters, if continued too long on very tender skins, inflammation and gangrene may ensue.

An ointment, into which the tartar emetic enters, has been sometimes employed in children of two or three years of age, and apparently without any bad effect. It produces a copious crop of pustules, exactly resembling small-pox, and as it dies away becomes as black as a coal. This remedy is principally calculated for chronic disorders, and requires a long continuance to effect any real good. It should never be used over a blistered surface, for the pain it excites in such cases is quite intolerable.

CALOMEL.

Few remedies are more extensively employed, and none with less care and precaution, than calomel. The ease with which it can be administered to children, from its want of taste, the unequivocal benefit that sometimes follows its

exhibition, and the rare occurrence of salivation in very early life, all serve to render it a medicine of common but thoughtless use, both among medical men and nurses. But though it is very certain that the peculiar effects seldom do take place—so seldom, that the late Dr. Clarke had observed salivation but in three instances under three years of age, it is to be remembered, that when produced, it is in children frequently attended with fatal effects. I have seen one instance of mortification of the cheek from the injudicious use of calomel, which terminated fatally, in a practice far less extensive than that of the physician alluded to. The danger of salivation is neither the only nor the principal evil to be apprehended from the too common employment of calomel; in very many cases the foundation is thus laid of some of the most unmanageable diseases of infancy.

When under the influence of mercury, the system is much more easily affected by cold than at other times, and hence, whatever diseases are excited by cold will be more likely to ensue. Accordingly, in its remote consequences, that is, by rendering the constitution tender and irritable, mercury, carelessly exhibited, becomes a cause of inflammation of the lungs, of inflammation of the membranes which line and cover the bowels, of enlargement of the mesenteric glands, or of any other disease which is easily produced by cold.

But it has likewise direct and immediate consequences evil in themselves. It excites nausea; debilitates (though when seldom given, only temporarily) more than any other medicine; and while it lessens the appetite, enfeebles also the digestion. Nor will calomel or any other preparation of mercury alone ever correct the secretions. The evacuations produced by calomel are always greenish, slimy, and either perfectly inodorous or emit a particularly unpleasant odour; and it must be manifest, that health cannot be consistent with such secretions from the alimentary canal.

It is impossible to lay down rules for the use of calomel in every case, and I shall refer therefore to the particular sections in which thosediseases are treated of which require its employment. It must, however, never be given as a simple purgative. As a medicine of this kind, senna or rhubarb may be given with advantage, and, unless very extravagant quantities are exhibited, with impunity. Calomel is only proper when some other effect is required than simple purging, when the secretions of the liver and of the glands of the bowels demand excitement, or when we wish to reduce the strength of the circulation with or without the evacuation of blood.

OPIUM.

Opium is the last medicine upon which I think it necessary to make any observation. To use the words of Mr. Brande, "opium, if ever administered to children, requires to be given with more than ordinary caution—it should never be resorted to in any form except upon emergencies, and all opiates, especially syrup of poppies, and some nostrums containing opium, which are but too frequently used to quiet children, should be most imperiously excluded from the list of nursery medicines."

Opium enters into the composition of all the quack cordials, such as Dalby's Carminative, Godfrey's Cordial, &c. and very many fatal accidents have happened from their use. Upon no subject indeed in medicine are professional men more completely agreed than respecting the danger of giving opiates to children, and upon none consequently can they more properly expect, that the public should defer to their opinions.

CHAP. IV.

CUTANEOUS DISEASES.

CHILDREN are more liable than adults to eruptions, from the greater irritability of their skin; and, without doubt, in many instances they are really beneficial. The season of teething is that in which they are principally developed, and from the great irritation experienced by many children at this period, it is probable that they prevent the attack of some more important structure. They appear in the form of rashes, pimples, scales, vesicles (of which the cow-pox is an instance), pustules (of which the small-pox eruption consists), blisters, and tubercles, such as warts, &c. These are the principal forms which are seen in children. Under rashes are comprehended measles, scarlet fever, nettle rash, the Rose and Erythema, which is a mere redness of the skin, attended with some constitutional disturbances.

MEASLES.

The appearance of this eruption is well known, and in its severer form it can scarcely be mis-

taken; but in the milder kind it is not always easy to decide. The following is Dr. Bateman's description, and it is so accurate that I rather adopt it than any fresh account of my own:—

"It first shews itself in distinct red, and nearly circular spots, somewhat less than the ordinary areolæ of flea bites. As these increase in numbers, they coalesce, forming small patches of an irregular figure, but approaching nearest to that of semicircular or crescents. These patches are intermixed with the single circular dots, and with interstices of the natural colour of the skin. On the face they are slightly raised, so as to give the sensation of inequality of surface to the finger, passed over the cuticle. The whole face, indeed, is often sensibly swelled at the height of the eruption, and occasionally the tumefaction of the eyelids is so great as to close the eyes for a day or two, as in small-pox, but on the other part of the body they are not much elevated. In many persons, as Dr. Willan has remarked, miliary vesicles appear, during the height of the efflorescence, on the neck, breast, and arms; and papulæ often occur on the wrists, hands, and fingers."

The measles come on exactly like a common cold, with sneezing and discharge from the nose. From the first, however, the eyes are redder than is usual with catarrh, and the eyelids are often slightly swelled. Towards the third or fourth

day the eruption begins to appear on the face. Dr. Bateman says, " on the forehead and chin," often, however, on the eyelids first; it quickly spreads over the the trunk and extremities. It is generally most vivid in the face upon the fifth day. On the sixth it begins to fade—the eruption on the trunk is throughout a day later than on the face. As soon as the eruption has disappeared, the cuticle begins to scale off from the whole body, and continues to do so till an entire new cuticle has formed. The time required for this desquamation is by many old practitioners regarded as the period of infection; that is to say, that till the scarf skin has quite peeled away, the individual is capable of communicating the disease.

No disease varies so much in severity and the the degree of danger attached to it, as measles. In some years it passes away with scarcely any fatal cases, while at other times the mortality is so great as to make the disorder an actual pestilence. In the opinion, therefore, to be given, it is highly important to regard what Sydenham has termed the constitution of the air, i. e. the general character which the disease assumes, whether severe or otherwise.

The treatment is very simple. When inflammatory symptoms are present, bleeding, either local or general, must be practised; the bowels should be kept open, and the room in which the

patient is confined should be kept cool. All stimulants should be most carefully avoided.

Frequently towards the disappearance of the eruption, diarrhœa comes on, with considerable fever and debility. Generally speaking, mild diluents are all that are requisite for the removal of the complaint; but should there be much tenderness in the bowels, or should the purging be excessive, it may be useful to apply a few leeches to the abdomen. It should never be stopped suddenly.

The consequences of measles are, however, much more to be dreaded than the disease itself, and it is only by the greatest watchfulness that they can in many instances be avoided. When the fever subsides, the appetite to a certain degree returns, and the patient is often considered as gradually recovering. It is, however, soon found that the amendment is checked, and consumption, marasmus, or some other disease, is rapidly developed; and this, in great measure, as the diet is more generous. The principal attention should therefore be paid to this point, and neither animal food nor stimulating liquors should be allowed till a week or ten days have elapsed from the disappearance of the eruption. The occurrence of fever at different times should also be carefully watched, and the moment any unusual symptoms appear they must be met by the appropriate remedies. In no case is time of

so much importance as in this. Should any of the diseases referred to be once fully established, recovery is scarcely ever to be expected.

SCARLATINA.

The scarlet fever, like measles, differs very much as to the degree of danger attending it. In its simplest form it is unattended with danger, and requires scarcely any medical treatment. To keep the bowels open, the room cool, and to avoid all stimulating food so long as any fever is present, are all the directions that need be given.

Scarlatina, however, is too frequently complicated with severe inflammation of the throat, which readily passes into the state of gangrene. The management of this form is extremely difficult, and often, notwithstanding every care, it will end fatally.

Should the disease be noticed early, and before the throat has put on that dark livid appearance that precedes gangrene, a number of leeches should be applied immediately under the jaws, which should be repeated in twelve hours should the livid redness be still manifest that characterise this kind of sore throat, and a blister should be placed under the chin. I have re-

peatedly seen this treatment successful in arresting the progress of the sore throat.

Leeches, however, may be applied when ulceration has already ensued, if the surrounding parts are still in a state of active inflammation; indeed, they ought to be applied. In a case which occurred within a few days of the time at which I write, a man applied to me with the symptoms of common catarrh, accompanied with, at first, only slight sore throat. He was of a full and vigorous habit, and was bled from the arm. The next day his throat was still worse, and on inspection the fauces were intensely red over a large extent, and large sloughs were already formed. Pressure internally, under the angle of the jaw, directed towards the situation of the tonsils gave great pain. Twenty leeches were immediately applied externally. The next day the redness was nearly gone, the sloughs were separating rapidly, and in two days after the man returned to his employment. I have known the same case under other treatment continue for several weeks, the ulceration of the throat has passed into a chronic state, and for a long time obstinately resisted every remedy.

With respect to the general treatment it must be modified by the symptoms. The heat of the skin may be reduced by cold effusion, or by sponging with cold water. This remedy, however, ought only to be used when the skin is dry

and hot; should perspiration have commenced, more especially should it be fully established, the employment of cold water would be highly dangerous. The bowels must be opened, but much purging should be avoided; and, indeed, great care must be taken not to reduce the strength. The mineral acids are often very useful in the sore throat accompanying scarlatina, and are sometimes advantageously combined with decoction of bark.

Diaphoretic medicines are generally advised in scarlatina, but neither in this nor any other kind of fever, have I ever seen good result from their employment. Voluntary perspiration is frequently critical, but that which is procured by art is seldom beneficial. Emetics are now generally rejected by medical men in the treatment of this disease.

If gangrene should completely occur, recourse must be had to wine and other stimulants, and to all the various remedies which are employed in similar cases.

As, in the case of measles, the consequences of scarlet fever are in the mild kind more to be dreaded than the disease itself. Recovery is checked exactly as in that disorder, and the most frequent malady that ensues is dropsy. This is generally of an inflammatory nature, and speedily yields to bleeding and antiphlogistic remedies; but if it should be improperly treated

in the first instance, it speedily becomes incurable. Wine and stimulating food should be forbidden during convalescence, if the slightest degree of fever is present.

ERYSYPELAS

Erysypelas gangrenorum, or gangrenous erysypelas, sometimes attacks children a few days after birth; it has, indeed, been observed upon a child at birth. It is a disease, however, chiefly confined to hospitals, and rarely occurs in a severe form in private practice. A milder form is indeed common, which readily yields to fomentations and gentle aperients. The best account of the erysypelas gangrenorum has been given by Dr. Garthshore in the second volume of the Medical Communications, and from that paper the following account is principally taken.

It comes on, as above stated, a few days after birth, generally beginning about the navel or genitals, and extending afterwards in every direction. The skin becomes hard and painful, assumes a dark red colour, gradually changing into a livid hue, and vesications form of various sizes; sometimes it attacks the extremities, and should the child ultimately recover, it will probably be with the loss of his fingers or toes, whic mortify and fall off.

Dr. Garthshore remarks, that though not apparently infectious, it was more frequent at one season than another, but he never saw more than three or four cases in the same season. It has been suggested, that it is frequently owing to the mother's drinking spirituous liquors; but though it often occurs where this habit had not been indulged in, "it has chiefly attacked the delicate children of weakly mothers."

Billard states, that in all the cases he examined after death, he found the lungs crepitating and gorged with blood, and the right cavities and the whole venous system very full. On this account he recommends the application of leeches in the first instance, and before the grangrene is decided. When gangrene is present, he agrees with Dr. Garthshore in recommending bark in large quantities.

In a case reported by Dr. Bromfield, a child a day old took four ounces of decoction of bark daily by the month, more commonly the medicine has been given per annum. With respect to local treatment it must vary with circumstances. In general, mild poultices will be sufficient, for it is the constitution not the local treatment upon which success depends.

URTICARIA, OR NETTLE RASH.

Urticaria, or nettle rash, seldom appears in a severe form upon infants. Whenever it does the itching may be allayed by tepid bathing; and a slight aperient will often suffice for its cure. The eruption so much resembles the sting of a nettle, that it cannot be mistaken.

I have occasionally seen a purple spot in the intervals of the wheals, and the wheals themselves sometimes become purple, as if the child had been severely bruised. The only cases I have seen have happened in poor children that had been badly nourished, and have always terminated well. A better diet was given them, and the bowels were kept open with mild aperients.

Besides these which, with small-pox, may be regarded as the principal febrile diseases of the skin to which infants are liable, there are often rashes which appear for a short time, and then cease without any disturbance of the general health. They are for the most part dependent upon disorders of the alimentary canal, and are easily removed by gentle aperients.

CHAP. IV.

AFFECTIONS OF THE SKIN.

(Continued.)

VACCINATION

THE success of vaccination depends upon several things—upon the lymph which is employed being genuine—upon the child vaccinated being old enough to receive it, and free from all eruptions—upon the vesicle going properly through every stage, and upon one vesicle, at least, remaining whole and unbroken.

The genuineness of the lymph, of course, depends upon its being taken from a genuine vesicle, which shall have gone through all its various stages in proper order. What these are will be explained below. But even when this is obtained, it is necessary that the child to be vaccinated should be of a proper age, and free from eruptions.

Experience has proved as a general fact, that children are not so easily affected by contagion and infection as adults. We see instances continually, in which infants at the breast escape

hooping cough and measles, while others in the same house are suffering severely from these diseases. It is true, that some individuals are attacked at a very early period of life, but these are rather exceptions to the general rule. With respect to small-pox, it has been found by actual experiment that an infant under three weeks or a month old cannot be successfully inoculated; and if this, which is a malignant and virulent disease, cannot be easily communicated, we may rationally expect that cow-pox will be more difficultly communicated at an early age. Unless, indeed, the presence of small-pox in the neighbourhood demands it, it will be better to defer vaccination till the infant shall have reached six months from its birth, but as soon as this age has been attained, it should be performed immediately.

Next to the age of the child, its freedom from all eruptions is important. Whenever two diseased actions go on in the system together, they do for the most modify each other. Now an eruption of any kind would be a symptom of one mode of diseased action being present, and the vaccine vesicle would be another, and each would be modified, but most certainly the latter, and consequently its protection against the invasion of small-pox would be lessened. Care then must be taken to vaccinate the child when free from eruptions. In stating this, it is by no means meant that every little pimple upon the skin must

be regarded, for in this case an infant will scarcely ever be vaccinated, but merely, that when there is an extensive eruption, any inflammatory action on the surface of the body, any fever present, the inoculation for the cow-pox should be suspended.

The following account of its progress, taken from Dr. Bateman's work on cutaneous diseases, is sufficient for this occasion. It must, however, be remembered, that nothing but long experience will enable men to detect irregularities: and a description like the one below, though unquestionably as good as can be given, will never enable an inexperienced eye to judge accurately.

"The characteristic of this eruption is a semi-transparent pearl coloured vesicle, with a circular or somewhat oval base, its upper surface, until the end of the eighth day, being more elevated at the margin than at the centre, and the margin itself being turgid, shining, and rounded, so as often to extend a little over the line of the base. This vesicle is filled with clear lymph, contained in numerous little cells, that communicate with each other. After the eighth or ninth day from the insertion of the virus, it is surrounded by a bright red, circumscribed areola, which varies in in its diameter, in different cases, from a quarter of an inch to two inches, and is usually attended with a considerable tumour and hardness of the

adjoining cellular membrane. This areola declines on the eleventh and twelfth day; the surface of the vesicle then becomes brown in the centre, and the fluid in the cells gradually concretes into a hard rounded scab of a reddish brown colour, which at length becomes black, contracted, and dry, but is not detached till after the twentieth day from the inoculation. It leaves a permanent circular cicatrix, about five lines in diameter, and a little depressed, the surface being marked with very minute pits or indentations, denoting the number of cells of which the vesicles had been composed."

To the description here given it may be added, that at least one vesicle ought to remain untouched, and if only one form, lymph ought not to be taken from it.

With respect to the security afforded by vaccination, there is no reason to doubt its general efficacy. Cases of failure have indeed occurred, but so have secondary cases of small-pox; the proportion of fatal cases of the latter even exceed those of ths former. But even where vaccination fails in preventing small-pox entirely, it makes it materially milder, reducing in most cases the virulent and loathsome small-pox into the mild and comparatively innocent chicken-pox. There is indeed much reason to think that the two disorders are merely different forms of one and the same disease.

RED GUM, OR TOOTH RASH.

The red gum is an eruption of red spots which arise on the face and other parts of the body from birth, till after the period of the first dentition. These spots vary much in degree and in severity, in many instances scarcely deserving notice, in others spreading over the whole body, exciting great irritation, and not unfrequently exhibiting pustules full of matter, amidst the smaller red pimples. They usually appear first on the face, and in most cases are confined to this spot, but in others they attack the trunk and the extremities. The feet and ancles suffer most—sometimes the thighs are covered with the eruptions, and the wrists and arms are generally less affected than the lower extremities. From the variety of its appearance the red gum has been divided into several species, but rather to the confusion than to the elucidation of the disease. The fact is, that in every case it is the same disease, dependent upon the same causes. The difference in its extent and severity is dependent upon the irritability of the skin, which varies considerably in different individuals, and in the same individuals at different times.

It has been suggested, that one source of this eruption is exposing the infant too closely to the fire, and, in very irritable skins, the wearing of

flannel, It is not improbable that both these circumstances may operate, but we may certainly attribute more to the former than the latter. The eruption in almost every case appears first on the face, and its extension to the trunk is secondary, which would hardly be, were much irritation produced by flannel. Unquestionably there are individual cases which cannot bear woollen clothing applied to the skin, and in these, leather or some other substitute must be found. Wash leather, next to flannel, is the best kind of clothing, and calico next to wash leather.

It is important to keep in mind that the eruptions on the skin cannot be suddenly repelled without danger, and that cold is very likely to have this effect.

To confine a child, however, to the house, that the danger of cold may be avoided, is by no means to be recommended. Cold may indeed be thus guarded against, but the health will assuredly be injured, and that weakened state of the system increased by which eruptions are caused and maintained. Exercise in the open air is an essential part of the treatment, and the only care requisite, is to clothe the child thoroughly. When this is done no anxiety need be felt respecting exposure to the open air.

Nor is attention to diet less necessary than attention to the clothing, for one of the most fre-

quent sources of the eruptive diseases of children is too full diet.

With respect to medical treatment, it is impossible to give other than very general directions. It must be varied according to the strength of the child, the presence or absence of febrile symptoms, and the severity of the eruption itself.

In common cases it will suffice to give a dose of senna tea twice or three times a week; each dose should be sufficient to empty the bowels completely, but not to produce violent purging or straining. Should the latter effect be produced, it is not indeed improbable that in many cases the eruption will rapidly disappear, but it will be at the expence of the general health, and the moment the strength is slightly recovered, the eruption will re-appear with much greater severity. This is the ordinary consequence, but it is not without exception, for in large fat plethoric children, not only is purging useful but absolutely necessary; great attention, however, being paid that it does not reduce the strength. Where purging is advisable, two grains of calomel should be given at bed-time twice or three times a week, and a dose of senna tea to carry it off the next morning.

After the purging has effected all that can be expected from it, and a week or ten days will be fully sufficient for this purpose, some of our native

vegetables may be employed as alteratives. Of these, the Leontodon Taracacum, the common Dandelion, holds the highest place; and the most efficient part of the plant is the root. It should be gathered soon after flowering, and dried gently either in the sun or at a considerable distance from the fire. A high heat acts injuriously upon this as upon all other vegetables. Half an ounce of the root may be boiled in two pints of water down to one pint, and to this three drachms of the supertar trate of potash, more commonly known as cream of tartar, should be added. Of this an ounce may be taken three times a day, Should the cream of tartar appear to act too much upon the bowels, a drachm of the subcarbonate of potash may be substituted. To do any good this must be continued for several weeks. Chamomile tea is in some cases a better medicine than the dandelion, especially when the child is weak, and its digestion is imperfect. Sometimes both medicines may be advantageously combined. Among the poor various vegetables are used for these diseases, and probably they are many of them useful as alteratives. Of these, the common goose grass, Galium Aperinum, and the lesser centaury, Erythræa Centaurea, are most commonly employed. The leaves and stems are dried, and a strong tea made. In many cases they seem to be quite as useful as the far-famed and expensive diet drink.

SCALD HEAD.

This is a common expression for eruptions of different kinds which attack the scalp. Those, however, which more particularly require attention, have been termed porrigo larvalis and porrigo furfuracea. The first exhibits an assemblage of pustules which terminate in large scabs, and the latter consists of minute bran-like scales, which may be washed off, but are instantly renewed. The porrigo furfuracea occurs in infants at the breast, and at every other age, and is, under the common treatment, a very obstinate disease.

Every disorder of the skin is evidently dependent upon some irritation of the organ, which, under favourable circumstances, more manifestly assumes an inflammatory character. It is hence we may conclude that cutaneous diseases are so often prophylactic, that is, prevent the attack of some internal and more dangerous complaint—the irritation is spent upon the skin, instead of being transferred to the brain, the lungs, or any other important organ. In therefore attempting to cure a cutaneous disease, the medicines employed should be such as will allay irritation, not such as are calculated to increase the action of the past. Plain as this indication is, Dr. Bateman has recommended the scurf to be continually washed off with soap and water and stimulating ointments

to be used, and this practice is commonly adopted. As might be expected, under such treatment it becomes very obstinate; and I have seen cases of three or four years' standing, which have only disappeared upon the suspension of remedies. The plan I have pursued for the last three or four years has been to have the scalp well cleaned with a sponge and warm water only, four or five times a day, and after each washing the scalp has been well rubbed with oil of almonds. The principal use of the latter is to encourage friction. By this means the great severity of the disease has usually disappeared in two or three weeks, and whereas at first, the scurf rapidly accumulated between each washing; at the end of this time once a day has been quite sufficient to keep it clean. There may be cases in which this plan will fail, but I have never yet seen any, where proper attention has been paid, and the head has really been cleaned.

The porrigo larvalis, or that species which consists of small pustules, is scarcely ever present without some disorder of the general health, and medicine will therefore be required to correct it. Sometimes an occasional aperient will suffice for this purpose, but when it does not, the same plan must be pursued which has been recommended in tooth rash, and with the same reference to the strength, constitution, and other circumstances of the patient.

Not unfrequently this species of scald head extends over the whole face, and clothes it with a thick dry crust, under which matter is continually formed and exudes. At the same time, the surrounding skin is red, tumid, and tender, and exhibits signs of acute inflammation. When this is the case, and there are few instances of the disease in which it does not more or less happen, the repeated application of leeches is necessary, and frequent fomentation with warm water. The leeches are not only useful in overcoming the inflammation, but they prevent, in great measure, the formation of fresh pustules, and thus afford time for the cure of those which already exist.

Where the eruption appears to proceed from the irritation of teething, as in many cases it does, the application of leeches is frequently very necessary, and this merely as a measure of relief. The developement of each tooth is followed by a fresh crop of pustules, and these are attended with high inflammation. The local abstraction of blood is essential to prevent these running into ulceration, and thus permanently disfiguring the face. Nothing, indeed, can be more striking than the difference between two cases, one of which has been bled, and the other left to itself, or treated only with lotions and ointments. In the former case, the pustules become dry and gradually peel off—there is very little if any exudation of matter—and even

in the worst cases the face can be kept tolerably clean. In the latter, the skin is red, the pustules ulcerate, and the forehead and cheeks, and often the lips, are covered with a bloody scab, nor can the child move its mouth without exciting considerable pain.

INTERTRIGO. CHAFINGS.

This is not unfrequently a very troublesome affection, but it is commonly made worse by improper applications. Cleanliness, however, is the best and the only effectual remedy. Should there be much inflammation in the armpits or the other parts, where chafings occur, they should be frequently washed with cold water, and an ointment composed of an ounce of spermaceti ointment and half a drachm of sulphate of zinc, well mixed together, may be used with advantage. The zinc should be in an impalpable powder, so that the ointment may be free from any gritty substance, and perfectly smooth. The principal remedy, I however again repeat, is cleanliness.

CHAP. V.

AFFECTIONS OF THE DIGESTIVE ORGANS.

RETENTION OF MECONIUM.

THE first evacuations which an infant has from the intestines, consists of a dark coloured glair of slime, which, if suffered to remain, will, in a few days, excite very considerable disturbance in the bowels. When children are properly applied to the breast, without having had any other food in the first instance, this matter is generally purged off by the maternal milk, which both in the human race and in the lower animals, is possessed of an aperient property. If this, however, should not be done thoroughly, and if the alvine evacuations should not assume a healthy appearance, a tea-spoonful of castor oil may be given, and it should be repeated every three or four hours, till the slimy matter shall have completely disappeared. Castor oil, however, will not operate upon every child, and under this circumstance a small quantity of rhubarb and magnesia may be given. The proportions may be two grains of rhubarb with three of

magnesia, and it will be better to repeat this at short intervals than to give a much larger dose at one time. Some writers have recommended that the meconium should not be suffered to remain more than a very few hours, without the exhibition of medicine for its expulsion; but in this, as in other cases, medicine should never be recurred to till nature absolutely requires its assistance. In the present instance this cannot be ascertained till the child has been applied to the breast several times, as it is the failure of the maternal milk to operate, that renders aperient medicine necessary.

JAUNDICE.

It is not unusual to find infants very yellow at birth, but for the most part this yellowness disappears after the meconium has been expelled. In other instances the yellowness of the skin becomes more intense, and the child evidently suffers from indisposition. He draws up the legs as if he experienced pain in the bowels, cries much, whines in his sleep, and is exceedingly restless. The urine stains his linen, and not unfrequently has a strong and very disagreeable odour. The evacuations from the bowels are clay coloured or greenish, or, sometimes, if they should be yellow when first expelled, they quickly

turn green afterwards. In some cases there is slight purging, in others there is considerable straining, without any effectual discharge from the bowels. If this state continues many days, the emaciation is great, and the patient appears to die from thorough exhaustion. The treatment of this complaint is very simple, and consists in the exhibition of rather active purgatives, which must be repeated at intervals till the evacuations assume a healthy appearance. A grain of calomel should be given with a little sugar, in the first instance, and in the course of two or three hours afterwards, three or four grains of jalap should be taken by the child. This last may be repeated every four hours till the bowels appear completely empty. In giving purgative medicines, care should be taken to ascertain their real effect, for on this point no little deception frequently prevails. The quantity of matter evacuated is that by which a judgment must be formed, and not the frequency of the evacuations. If, for example, at once or twice a large mass is expelled, and the bowels seem cleared, the full and necessary effect of the medicine will have been attained; but if, on the other hand, after numerous efforts, scarcely any evacuation shall have taken place, the medicine must be again and again repeated.

HICCUP.

This affection, though unattended with danger, is often exceedingly troublesome in infants at the breast. It may be almost always regarded as symptomatic of disorder of the stomach, and seems to be excited very frequently by too much acid in that organ. It is not easy to stop it in many cases at the moment it occurs, and the attention must therefore be directed to its cause.

If the child can be induced to hold its breath for a few moments longer than usual, it will sometimes suspend the hiccup, and this seems to be the mode in which the nurse's favourite remedy, a lump of sugar, acts. Two or three drops of sal volatile given upon sugar is also occasionally serviceable. Should these fail, and should the affection appear very distressing, great advantage may be derived from rubbing the stomach, either alone or with an opiate liniment. The common soap liniment, which is always kept by the druggists, is a good application of this kind. As a medicine to act more generally and completely upon the system, the mixture which will be mentioned in the next section, is perhaps, under common circumstances, the best that can be employed.

FLATULENCE.

Like hiccup, this is very common and very troublesome. A principal source is overfeeding the child, either from the breast alone, or with spoon meat also. The first object is, of course, to insist upou a natural diet, and to prohibit equally an improper quantity and quality. The bowels should likewise be attended to, but violent purging must be carefully avoided. The following mixture I have frequently found of the greatest use:—

Magnesia, half a scruple,
Rhubarb powdered, a scruple,
Oil of fennel, two drops.

These should be well rubbed together till the oil has completely disappeared, and the whole forms a dry powder, which should be mixed with two ounces of spring water. A tea-spoonful should be administered twice or three times a day. If it should be found to operate too freely upon the bowels, the fluid should be given alone, without shaking up the powder, and in this last form the infant may take it, whenever the flatulence is found particularly troublesome.

VOMITUS—VOMITING.

Vomitting occurs from very different causes, and requires attention according to the disorder which excites it. In many cases it is of no importance, while in others it is an early symptom of a fatal malady.

It is so common in very young infants, that nurses have even pronounced it a salutary process, and often seek to encourage it. This, however, must not be permitted, for though vomiting in very early life takes place without any effort, and consequently without any shock of the system, it is, as I have mentioned formerly, the result of an inverted action of the stomach, and not, therefore, either natural or salutary. This disturbance, however, is almost always at this period of life the result of an overloaded stomach, sometimes accompanied with a constipated state of the bowels. If the latter does not exist, it will be quite sufficient to diminish the supply of food, till the quantity is ascertained which will remain on the stomach, and this must not be exceeded. When infants vomit much, they sometimes reject hard masses of curd after experiencing considerable uneasiness, and the uneasiness disappears as soon as this mass is expelled. On this account many practitioners have recommended emetics, and I have known them to be most unmercifully repeated. Such a practice, however, cannot be recommended. Generally

speaking, children easily vomit when vomiting will be useful to them; and the presence of curd on the stomach is not sufficient reason for exciting it artificially, as more or less it always forms on an healthy stomach. Should the bowels be constipated, a little castor oil should be given, or some senna tea. To a child under four months old, a tea-spoonful of castor oil, or a desert spoonful of senna tea repeated every four hours, till the bowels are opened, will suffice. Occasionally a little magnesia will be sufficient, especially if much acid is present in the stomach. It may, however, be safely maintained, that none of these methods will be necessary if the infant be not overfed. Vomiting occurs also frequently with children after dentition, for at this time the stomach is peculiarly sensitive. As in the other case, however, it is always the consequence of overloading the stomach, and it most frequently takes place during the night. The child has been suffered to eat freely at dinner, and probably at supper, without evincing any inconvenience. He is put to bed, and after he has lain quietly for an hour or two is suddenly disturbed by vomiting, and the food is expelled in a totally undigested state. In many cases, as soon as this has happened, the child appears perfectly well, goes to sleep again, and wakes the next day as well as usual. In other cases, however, the vomiting recurs at

intervals for several hours, and is accompanied with some uneasiness at the stomach. In this last case it will be generally best to give two grains of calomel immediately, and to work it off in six or eight hours with senna tea. Should the vomiting still continue, or should the bowels be constipated and painful at the same time, we may then fear that there is some more permanent cause, and we must proceed to investigate what that cause may be.

The state of the brain must be first regarded. Should the child shew any symptoms of heaviness, complain of his head, shiver, flush in the face, exhibit slight convulsions or twitchings, the approach of hydrocephalus may be suspected, and proper means must be taken immediately to combat it. Should this early stage be permitted to pass without any measures being taken to overcome the disordered state of the brain, all medicine will most probably be useless. For further particulars on this subject however, I refer to the section on hydrocephalus. Only let it be remembered, that vomiting is one of the earliest symptoms of this fatal disease.

Vomiting may arise also from what has been termed intussusception of the bowels, accompanied with those symptoms which attend upon hernia, it is indeed an internal hernia. Nothing here can be done farther than diminishing inflammation by leeches, &c. and endeavouring to open

the bowels. In many cases, notwithstanding every remedy, it proves fatal, while in others, after long threatening a fatal termination, the patient suddenly recovers. The great chance, however, of curing this affection depends upon its being attacked early.

COSTIVENESS.

Costiveness is sometimes very obstinate in infants, and is a source of great uneasiness to the mother It is not, however, always a matter of much importance, nor is it wise on all occasions to tease the bowels with aperient medicine.

In deciding that costiveness requires assistance from medicine, we must be guided rather by the general state of the child, than by the simple fact that the bowels are not daily and easily evacuated. Should no uneasiness be experienced, no feverishness ensue ; should the nights be passed in calm sleep, and the spirits remain good throughout the day ; and lastly, should the evacuations, when they are passed, even though only once in two or three days, exhibit nothing unnatural in their consistence, colour, or odour, aperient medicines can only be injurious. It will, however, occasionally happen, that the bowels of an infant will not be moved for several days together, and that the evacuation will then be

hard, be passed away with much straining, and often coated with bloody mucus. Towards also the third day, the child becomes restless; and though not much varying from his usual state, he is not quite as active and lively as the day after he has evacuated the bowels. When this has been observed to happen two or three times, it will be right to anticipate the period of uneasiness, by stimulating the intestines to empty themselves; and the only consideration which remains is, what is the proper mode to be pursued in such cases.

And first, on this account, calomel ought not to be given. I know that my objection on this head will be sometimes met by what is stated to be experience, that is, that with apparent impunity it has been continued for weeks, and even for years; and that it is also a most convenient form of administering medicine, the bulk being small, and the matter being quite tasteless. Such experience, however, is unquestionably deceptive, inasmuch as one child may escape with impunity from the strength of his constitution, while much more frequently the use of calomel gives rise to the various evils that have been enumerated in the section on the employment of this medicine.

Neither is it always useful to give purgative medicine by the mouth, for the obstruction is for the most part confined to the lower part of the

intestinal canal. And though the first portion that passes away is hard and knotty, the latter, in many cases, is even much relaxed. If medicine is required, the best is a little senna tea or castor oil, but it will rarely be proper to give even this more than once a week, or perhaps three times in the course of a fortnight. A much better substitute for medicine, however, will be found in the use of injections, or a suppository of coarse soap.

The injection may consist of warm water only, or of gruel, or may be mixed if the bowels are very torpid, with a dessert spoonful of common salt. This may be thrown up every second or third day, according to the time at which the child begins to be uneasy. It should not be used oftener than this.

A good remedy for costiveness is also the use of coarse soap, a small portion of which may be inserted within the fundament, and left there. It seldom fails to procure an evacuation in the course of an hour or two, and has the additional advantage of not exciting the bowels too vehemently. If circumstances should seem to demand it, this may be used every day, as its action is entirely confined to the lower part of the tube. Glysters, on the contrary, sometimes act more powerfully than is desirable, and cannot therefore be employed with impunity so frequently.

DENTITION.

Dentition commences at very different ages. In some children the first teeth protrude as early as the fourth, and in others they have been delayed as late as the twentieth month. The most usual period is between the fifth and eighth months.

Soon after birth the future teeth appear visible within the gum, and the division between each tooth can be accurately ascertained. For the first four or five months there is little apparent change in the jaws; they grow, of course, in common with the rest of the body; and the situation of the teeth, or rather of the sockets in which they are contained, becomes more manifest. The first symptom which indicates that the process of teething is actively commencing, is the dribbling of the child; and sometimes this continues for a long time, without any other symptom. At the same time, the child has its fingers continually in the mouth, and eagerly seizes any hard substance to rub the gums with. Generally towards the beginning of the fifth month the gums become broader and red, the mouth is hot, and in a short time after the gums appear to be painful. The child will perhaps be quiet in the day-time, and when nursed; but the moment it is laid down it begins to cry, again becoming quiet when it is raised and moved in the arms. The cry is very peculiar; and whoever has paid

attention to it, will scarcely ever fail to recognise it again. Sometimes it will lie quietly on the lap, and even sleep for a short time together, but the sleep will be disturbed by frequent starting. While in this state many children will take food whenever it is offered, till they become so completely gorged that they can eat no longer, and they then lie dull, heavy, and stupified, moaning and starting at intervals, but never thoroughly rousing up, unless sickness should supervene, and the contents of the stomach should be rejected. Of course, this practice of giving food under the circumstances alluded to, is decidedly to be condemned. If when a child exhibits these symptoms, the gums are well lanced, the restlessness in general disappears instantly, and he will sink into a calm sleep, from which, in a few hours, he will wake refreshed and in health.

The first thing to be attended to, when children are teething, is the state of the bowels. These should never be permitted to be confined, and if they should be a little relaxed, nothing should be done to stop the relaxation, provided, of course, that it be not excessive. Should, however, the bowels be costive, a little senna tea may be given twice or three times a week.

With respect to the gums, the moment they become red and inflamed they should be lanced, nor can any harm result from this practice, if the lancet be clean. Cases do indeed now and

then happen, in which suppuration takes place, and the gums ulcerate after lancing; but in no instance have I seen it occur, where the lancet had been used by a surgeon who was particular, in keeping his instruments clean. I would not, indeed, assert that this inconvenience does never ensue without some fault in the lancing, but the result of my own experience, which on this point has been very extensive, is as I have stated it.

But the benefit of lancing is not confined simply to its effects upon the gum, but it allays the irritation of distant parts. Thus should excessive purging be present as a consequence of teething, remedies will be useless till the inflammation of the gums is allayed, either by lancing or the natural protrusion of the teeth. In like manner also the affections of the head, which sometimes threaten during teething, are most easily prevented, by overcoming the irritation produced by dentition.

An objection has been made, and even by medical men, that should the gums heal over the teeth after they have been lanced, they become harder than they were at first, and consequently, that the teeth will have more difficulty in protruding. Unprofessional persons might be excused for making such a remark and drawing such an inference, but in medical men it is utterly disgraceful. There is no one fact better ascertained, than that parts newly formed are

most easily removed by absorption, the process which is employed by nature whenever any portion of the body wastes away. Hence it frequently happens, that in fevers old ulcers break out again; and bones, which, after fracture, have reunited, again become loose, and the united ends separate. The matter which had held them together is removed by absorption. So far then from the teeth penetrating with greater difficulty after lancing, the very contrary is the case; the healed part will be easily absorbed, and the teeth will more readily protrude.

In short, whenever during the progress of dentition any other diseases arise, it will be vain to administer medicines, until the gums have been lanced. This must precede every other plan.

Convulsions, inflammation of the eyes, and many other diseases, frequently accompany teething. The manner of treating these maladies will be mentioned in their proper place.

The following is the order in which the first teeth usually appear, though to a certain degree it is sometimes broken in upon. The two lower front teeth—the two upper front teeth—the remaining lower front teeth—the same in the upper jaw—the first lower grinders—the first upper grinders—the corner teeth; the second grinders, are generally the last to protrude. Sometimes, however, the corner teeth protrude after all the other teeth have appeared.

APHTHÆ—THE THRUSH.

The thrush consists of small white vesicles, which rise on the tongue and over the whole inside of the mouth; in a short time they ulcerate, and the surface of the tongue and mouth becomes covered with a loose ragged membrane, hanging in numerous patches, and of a dull white colour. In very bad cases the ulcers become of a dull livid hue. The surface of the tongue in the intervals of the ulcers is of a bright red.

The first symptoms of this disease is a difficulty which the child experiences in taking the breast, and consequent fretfulness whenever it is applied. The nipples of the nurse also frequently become excoriated at the same time, apparently from the contact of the infant's mouth. The health suffers in various degrees; in some there is scarcely any indisposition. In others there is much feverishness and irritability. In the former case the disorder is chiefly confined to the mouth; but in the latter, the intestinal canal is disturbed; and it seems not improbable that in some instances vesicles, similar to those seen in the mouth, are formed through the whole canal. At the fundament there is frequent ulceration, extending upwards of an inch in diameter; and the centre of the ulceration is generally much raised above the surrounding surface. The sore of this part appears to commence in the

same manner with that in the mouth; small pustules or vesicles form first; they ulcerate and unite together. It does not follow, that whenever this latter appearance exists, that the internal surface of the bowels throughout is covered with vesicles or ulcers, as the affection round the fundament may proceed merely from the irritation of the evacuations. There can, however, be no doubt of this surface being disordered. In general the thrush is easily removed, and can only, indeed, be considered an important disease when it is the sequel of maladies, which have debilitated the system. In fact, however, in this case it is merely a symptom of other diseases, and not to be regarded in itself.

The treatment of the thrush requires local applications to the mouth, and medicine to correct that state of the body from which it has originated.

If the mouth should be very sore and irritable, it will be best to begin with the mildest applications, such as frequent ablutions with warm water alone, or milk and water. The shreds of membranes should be gently cleaned out by means of a soft sponge safely tied to a small handle, and this should be done every half hour, or at least every hour. After the first day or two, a stimulant lotion may be employed composed of borax and honey mixed with water. The honey should be mixed with an eighth part of borax—

that is, one drachm of borax to an ounce of honey, and this quantity may be added to half a pint of water for a lotion. It may be made double or quadruple this strength, if it does not appear to increase the soreness of the mouth. Alum may sometimes be substituted for borax, but the effect of alum is not often as beneficial as that of borax.

As internal medicines, purgatives must be first recurred to, and to such an extent as to produce a full and complete evacuation of the bowels. After this, should the strength of the child permit, an aperient powder may be given every other or every third morning for a week or ten days. The powder may be composed of two grains of calomel, with three or four of jalap, for a child above four months old, and one grain of calomel under that age. If an aperient of this kind should not operate, which will sometimes happen, some infusion of senna may be given in the dose of a dessert spoonful every hour till the bowels are acted upon.

The diet of the nurse should also be strictly attended to, and should consist of the very mildest and simplest food. Nothing stimulating should be allowed.

The thrush is frequently of long continuance, notwithstanding the treatment above recommended being strictly pursued, and in this case it is necessary to give a course of alterative medicine,

which shall produce a slight but decided effect upon the bowels. For this purpose the preparation of mercury with chalk is admirably calculated. From three to five grains of it should be given every other night, and a tea-spoonful of castor oil, or some other mild purgative, the next morning.

Sometimes, however, all these plans will fail to produce any very decided amendment, and change of air is the only alternative. In all chronic diseases of children, indeed, change of air is an essential part of the treatment, more particularly if their general residence be in a large town. The sea usually acts very favourably upon children; and as those subject to the thrush are generally of a feeble and lax habit, a removal to the coast is very often of great advantage.

It is to be understood, that the rules of diet must be observed which have been laid down in the first chapter.

MUGUET OR MILLET.

This term is adopted, for want of another, from the French, who till lately have confounded the disease to which it is now appropriated, with Aphthæ or Thrush. It is in fact an erysypelatous inflammation of the lining membrane of the

mouth, and often of the whole alimentary canal, and giving rise to an increase in the quantity of the mucous secretion of the part it attacks, this secretion being at the same time much more tenacious than in its healthy state, and in some cases assuming the appearance of a factitious membrane. It is by no means confined to infancy; and I have frequently seen it mistaken for the common ulcerated sore throat in adults. In some cases, indeed, the deception is so complete that the only means of accurate diagnosis is to endeavour to wipe the secretion off with a camel hair pencil. If it is merely the muguet, the mucus will readily be removed, and the surface will appear without ulceration beneath.

In infants it is a frequent disease, but in England it rarely assumes that severe form which seems common in France. The following account is principally taken from Billard, whose opportunities in the Hôpital des Enfans Trouvés, have enabled him to investigate the disease more completely than has been done before. The muguet appears under three distinct forms: first, in the form of very small white points spread over the tongue and upon the inside of the mouth; secondly, in larger or smaller patches; and lastly, in the form of a membrane, which covers the tongue entirely, and sometimes over the whole cavity of the mouth.

The deposition of mucus is preceded two or three days by an erythematous inflammation of the surface of the tongue, or the lining of the mouth, or of both. At the end of this time the papillæ appear to be covered with small white points, adherent to the parts on which they appear. Should the inflammation now stop, the points gradually disappear, and the disease is removed. Often, however, the inflammation continues until it either forms large patches, and the secretion continues, or, as above-mentioned, it forms a covering to the whole lining of the mouth. Billard remarks, however, that the muguet, which appears in small points, generally occupies the tongue and its edges; the muguet, in patches, seizes upon the lining of the lips and cheeks, and that which forms a membrane is chiefly seen upon the posterior part of the tongue and the soft palate. It is clear, however, that this difference is principally owing to a natural difference in the power of the secreting membrane.

M. Billard states, that scarcely any fever accompanies this disease; but he seems principally to found this opinion upon the frequency of the pulse, for he himself says that there is heat and dryness of the skin and urgent thirst. The fact is, that in this, as in every other inflammatory disease, the febrile symptoms are very

variable; in the milder species they are scarcely perceptible, while in the more severe forms they are very evident and important. The cry of the little patient is not distinguished by any peculiarity, unless the secretion approaches the glottis, in which case it is frequently hoarse.

With regard to the treatment, it varies very little from that of the thrush; the bowels must be evacuated, the mouth washed with warm water or a slightly stimulating lotion, according to the extent of the inflammation, and a very mild diet must be insisted upon. Should the inflammation run very high, and the mouth be very red and hot, it may be advisable to apply a few leeches. In this country, however, it is rarely within my experience a severe disease, and I have never seen it fatal; in France, on the contrary, such a result appears to be common.

ŒSOPHAGITIS—INFLAMMATION OF THE GULLET.

Our knowledge of this disease is derived from Billard, and its very existence seems not to have been known until the publication of his work. Many of the symptoms which characterise it, have been described in books on the diseases of infants, though the writers were unacquainted with their exciting cause.

The following account of it is taken from Billard's work. An infant suffering from inflammation of the œsophagus, rejects milk which may have been given him, before the gastric fluid has acted upon it; he refuses the breast—emaciation ensues—and the patient dies without exhibiting any of the symptoms which mark the affections of the stomach and bowels.

The inflammation of the œsophagus may be simple, or erythematous; it may be accompanied with "muguet;" or, finally, it may terminate in gangrene. It almost always succeeds to the inflammation of the mouth, whether this be accompanied with aphthæ or muguet; and when, therefore, the above symptoms are observed to follow the affection of the mouth, œsophagitis may be suspected.

The treatment of œsophagitis will be the same as that of thrush or "muguet." Should the inflammation be very vivid, leeches may be applied, but at present the symptoms are too obscure to enable us to lay down any other rules than those which apply to all other inflammations.

Vomiting appears to be the most characteristic symptom of this disease; and Billard remarks that this has probably been the source, in many cases, of those obstinate vomitings which are described by different authors.

LIENTERIA.

This disease is that to which the name of watery gripes has been assigned, and it is a very frequent and very unmanageable complaint in infants. It may attack infants, whether fed entirely from the breast, or brought up artificially; but it is of comparatively rare occurrence in the former case. Its first symptoms are sometimes overlooked; the infant is observed to have more frequent evacuations than usual, and perhaps to be rather languid; but as such patients are frequently subject to colic pains, it is thought little of. Gradually, however, the evacuations become more and more frequent, exceedingly copious, and the griping pains extremely severe. The dejections come away with a loud report of wind. and the contraction of the abdomen and intestines is sometimes so strong as to expel the evacuated matter to several feet. Before each evacuation a rumbling noise is heard in the abdomen, as if the contents of the intestines were advancing towards the rectum; and every time the infant swallows, however little, a dejection immediately ensues. At first, the child cries loudly, kicks strongly, and draws the legs, as it were, convulsively towards the abdomen; but as the disease continues, it becomes weaker, and unable to evince its distress but by slight moans and general restlessness, and at length, quite exhausted,

lies without any motion. Sometimes, however, before the complaint arrives at this state, convulsions ensue, and the child dies in one of the paroxysms; or, falling into an apparent slumber immediately after, dies without a struggle. In some cases, no alleviation having taken place in the complaint of the bowels, symptoms of hydrocephalus are added. The child cannot bear the light, screams with that peculiar cry so distinctive of affections of the brain, will not bear the head to be in the slightest degree raised, the pupil becomes permanently contracted or dilated, perfect insensibility takes place, and death ensues, rather in consequence of cerebral disturbance than from that of the bowels. Convulsions, though generally slight, frequently occur while the child is perfectly insensible. When the head has become affected, recovery in this disease is exceedingly rare.

To the symptoms above enumerated, there is frequently, also, much fever; and the face is flushed, the skin hot and dry, the tongue red and furred, and great thirst is present.

Dissection does not commonly throw any light upon this complaint. The inner tunic of the intestines is often free from every diseased appearance, even when the symptoms during life have given every reason to believe that inflammation had existed. I am not, however, on this account disposed to deny the previous existence of in-

flammation, but rather that it had been resolved by the immense discharges of fluid matter from the bowels during life. In the acute diarrhœa, of which the watery gripes of infants may be considered as a species, there is perhaps little question of inflammation being one cause, if at least the signs as laid down by authors, are of any value; for we have pain, restlessness, thirst, heat of skin, and the red tongue. The stools, also, are stated to be sometimes bloody; but this I have never seen in the simple diarrhœa of infants.*

With regard to the treatment, very much will depend upon the period at which we are called to the patient, and the extent to which the disorder has already proceeded.

If called very early, and before the patient has become exhausted, our first consideration must regard the state of the bowels with respect to their contents. If there is reason to believe, from the nature of the previous evacuations, from the hardness and swelling of the abdomen, and from the habit of the child having been usually costive, that any offending matter is still retained in the intestines—the first object to be attained is its expulsion; for, until this is effected, every

* There may be a slight tinge of blood occurring in consequence of the infant straining, and partial prolapsus ani ensuing; but when the discharge of blood is copious, there is reason to fear some additional disorder of the bowels.

remedy serves but to exasperate (or, at best, to retard the fatal effects), and not to cure the disease. As, at the same time, the bilious secretions are always disordered, as evinced by the evacuations either being green, or presently becoming so, it will be advisable to combine calomel with some other purgative. I have employed a powder of two grains of calomel, and four or five of rhubarb, to be repeated every four hours, until it has operated, which has generally acted well, and, where the disorder has been recent, has prevented its farther progress. When we are satisfied that the bowels are thoroughly evacuated, our next object must be to change the state of the mucous membrane, to abate the acrimony of its secretions, and to allay the violent action of the muscular coat. To this end, if the pain continue severe, and the strength of the child will permit, a few leeches may be placed either upon the rectum or the abdomen, and fomentations constantly applied. As a medicine, the most effectual is a powder composed of three grains of hydrargyrus cum creta, with one grain of pulv. ipecacuhana compositus, three or four times a day. The child, at the same time, is either to be kept entirely to the breast, or fed very scantily upon broth, without the smallest particle of fat, or any more solid substance. In the very early period of the disease, this plan will be frequently efficient; but when it is once tho-

roughly established, it is far more difficult of management. In addition to the means above recommended, we must often recur to starch clysters, with a small quantity of laudanum in them; a cardiac mixture, also may be given with chalk; catechu, and aromatic spirits of ammonia, in small, but frequent doses; and if the child is not too much exhausted, we may order a warm bath. It has also been recommended to apply a plaster to the abdomen, in which laudanum is combined. In the London Practice of Midwifery, a case is given, where this appears to have been peculiarly beneficial; and in a disease so terrible as this, when it is once thoroughly established, we shall not be justified in neglecting any remedy that promises advantage.* This malady is generally the consequence of errors in diet; and in one instance, in which, from want of milk in the breasts of the mother, the child was dry-nursed, every remedy was useless until a wet-nurse was procured, when the purging almost instantly ceased, and the patient gradually reco-

* The following are the ingredients of the plaster employed in the case referred to:—Emp. opii, ℥iss.; emplast. plumbi ʒij.; pulv. opii ʒj.; olei menth. ʒj.; camphor. ʒj.; well mixed together, and spread upon leather. I may add also my own experience in favour of this plaster. I have employed it very frequently, and always with benefit. The glysters should be repeated every two or three hours, or even oftener, according as the intestinal canal is more or less irritable.

vered its strength. As whenever disorder of the bowels has had place it is very liable to return, it is very important that attention be paid to the nature and number of the evacuations, and that the slightest deviation from health be immediately corrected by appropriate medicines. In the language of Capuron, 'we ought never to forget, that the sensibility peculiar to this period of life requires the greatest prudence to be exercised in its management.' 'On ne devrait jamais oublier que la sensibilité naturelle à cet âge exige les plus grands ménagemens.'

WORMS.

Three kinds of worms principally infest the human intestines; these are commonly known as the small thread worm, the large round worm, and the tape worm. The two former are commonly found in infants and young children, the latter is much more frequent in adults, though, like the other two, it is sometimes met with in very early life.

The Ascarides Vermiculares, or small thread worm, are the most common, and are generally found in the lower part of the bowels near to the fundament. They are always numerous, and are frequently matted together in round balls. They

have been seen, however, in the upper part of the alimentary canal, and even in the stomach, and they are not unfrequently accompanied by the Ascaris Lumbricoides, or large round worm.

The symptoms of worms are in many respects those which are detailed under the section of Marasmus, and they are frequently present in this disease. Dr. Heberden has enumerated a fearful host of ills as the consequence of worms. "The maladies," says this venerable author, "which arise from worms, are head-ache, giddiness, unpleasant dreams, sleep suddenly broken with fright and a loud cry, convulsions, fever, thirst, paleness, disagreeable taste, offensive breath, cough, dyspnœa, itching of the nose, pains in the stomach, nausea, delicacy in the choice of food, morbidly great appetite, emaciation, tenesmus, itching of the anus in the evening, and lastly, the dejection of pellicles and mucus." These parasites never breed in a completely healthy system; and we may be assured, whenever they are present, that the alimentary canal is not in a sound state. Of the symptoms above enumerated, there are some which lead more particularly to the suspicion of worms—such as itching at the nose and fundament—frequent attempts to evacuate the bowels, attended with much straining, sometimes a slight discharge of blood from the bowels; and if the round large worm be present, fre-

quent colic. No symptoms, however, can be regarded as conclusive, nor can any certainty be had that worms infest the bowels, unless they have been seen.

The symptoms arising from different worms, though not very distinct, are yet sufficiently so to deserve attention. The thread worms are usually accompanied by intense itching of the fundament; and there is frequently at the same time, great tenesmus, or ineffectual straining to evacuate the bowels. As, however, neither these nor any other worms are bred in an entirely healthy body, we have at the same time many constitutional symptoms. The appetite varies; there is occasional sickness, pain in the bowels, and peculiar fretfulness, in short, the common symptoms of what has been termed worm fever. Indeed, both these and all other intestinal worms are to be regarded as both cause and effect. They are the effect of a debilitated state of the animal economy; and by their irritation, when once produced, they have a direct tendency to increase the pre-existing weakness.

If the Ascarides Vermiculares, or thread worms, are present, injections are the most efficient means of removing them. The most useful injection for this purpose, is composed of warm water and the tincture of the muriate of iron. Half a pint of the former, to half an ounce of the latter; and the whole of this thrown at once up the rectum.

There are few cases so obstinate, that this will not suffice to overcome. It will be generally useful to clear out the upper portion of the canal at the same time, by an active purgative; and as the secretions of the stomach and bowels are always in these cases much disordered, the powder previously mentioned of calomel and jalap, will be useful. After this has been done, a wine glass full of chamomile tea should be given twice or three times a day to a child of three years old, for a week or ten days. If there are no other symptoms than those which have been caused by the worms, no farther remedies need be employed. This, however, will not often be the case, and the treatment must be then regulated according to the peculiar indications, or in other words, according to the nature of the disorder which prevails.

The Ascaris Lumbricoides, or round large worm, is sometimes accompanied by spitting of blood, which ceases upon the expulsion of the parasite. It is often extremely difficult to destroy this species entirely, and it frequently resists every kind of purgative that can be employed. The only sure mode of expelling it, is to correct the disordered state of the alimentary canal. In doing so, great attention must be paid to the diet of the patient, according to the principles which have been laid down in the first chapter.

The medical treatment in this as in most other infantile cases, should begin with clearing out the intestines, and castor oil, or, (if this cannot be taken) senna tea, are the best purgatives that can be employed. To a child of two years of age, a dessert spoonful of the former may be given every four hours, till the bowels are thoroughly well acted upon. If the senna tea be used, the same quantity should be exhibited every hour, until its full operation is procured. When this has been done, we must recur to such medicines as tend to strengthen the tone of the stomach; and it is often useful to join with them a gentle aperient. The following form has been very useful in my practice, and combines the aperient and tonic properties together, in a very remarkable degree. Take

Infusion of chamomile,
Infusion of rhubarb—of each four ounces,*
Subcarbonate of potash—one drachm.

This medicine must be given in proportion to its effect upon the bowels. To a child two years of age, a dessert spoonful may generally be given

* The infusion of chamomile is made by pouring half a pint of boiling water upon two drachms of flowers. It should stand in a covered vessel for ten minutes, and then be strained off.

The infusion of rhubarb is made by pouring the same quantity of boiling water upon half a drachm of rhubarb sliced, which should stand in a covered vessel two hours, and then be strained off.

twice or three times a day, and this may be increased, at six or seven years of age, to a table spoonful. The object is to obtain two or three healthy evacuations from the bowels daily. Great care should be taken that the purging is not carried so far as to weaken the patient, and the instant that it appears to do this, the dose and frequency of administering the medicine should be reduced, or it should be entirely suspended.

This last species of worms is almost confined to children, and is scarcely even observable in adults. It is occasionally found, however, with them, and I once saw several alive in the stomach of a woman who had died suddenly from hæmorrhage of the lungs.

The tape worm, or Tænia Solium, is not very common in early life, and the symptoms attending it is exceedingly various. Some years ago M. P. Ch. Louis reported ten cases of disease arising from the irritation of this worm; and from this memoir, with the result of my own experience, the following account is taken:—

The principal indications in these cases were colic, varied pains in the abdomen, itching of fundament and nose, more or less derangement of digestion and of the appetite, and pain in the stomach. Head-ache was unfrequent; but, on the other hand, there was great lassitude, and wandering pains in the limbs, frequently compelling the patient to suspend his occupation.

The most frequent symptom was pain in the abdomen, but of an extremely varied character. Sometimes there was simple colic; at others, there was pain in both iliac regions, and, like colic, intermitting and returning at intervals with renewed violence. There was diarrhœa in one case only, and this was in a woman with whom it had been habitual for four years. Though, however, this absence of diarrhœa marked nine out of ten cases related by M. Louis, it is far from being uncommon. Occasionally I have known the diarrhœa attendant upon tænia very profuse, and productive of considerable prostration of strength; more frequently, however, I have observed nothing more than tenesmus.

After the abdominal pains, M. Louis found the itching of the fundament the most frequent symptom. In three cases out of the ten it was wanting; and yet in one of these, great portions of tænia were daily passed, even without evacuation from the bowels.

Itching of the nose was wanting in three-fifths of the cases; and in one case only was it present without itching of the fundament. The appetite was generally much greater than in health: in one instance there was no sensible change; and in some there were frequent alternations of anorexia and immoderate appetite.

Authors have laid down as one symptom of tænia, that the pain of the stomach is relieved by taking food; but in none of the cases I have

treated, and they exceed some hundreds, have I ever observed any alleviation follow; more generally the pain has been aggravated.

Pain at the pit of the stomach, in M. Louis's cases, was felt by the females only. In one case he attributed it to the remedies employed, as it remained after the expulsion of the worm; in the other instances no pain was experienced after the tænia had been removed. Pain in the left side is one of the most frequent symptoms in young girls of this disease, but like the case thus alluded to, it frequently remains for sometime after the worm has passed away.

Vomiting was noticed in only one of these cases, and had been more oppressive before portions of the worms had been perceived in the evacuations than afterwards.

Pains in the extremities, cramp, and lassitude, were very common; and the difficulty of moving themselves prevailed more than any other reason with patients to induce an application for assistance.

Rheumatic pains are, within my experience, a very common attendant upon the presence of tænia. But though there is every reason to believe that they are an exciting cause, the pain is nevertheless affected by every change in the weather. They exhibit, in short, all the characters of rheumatism when it is idiopathic. Both in the cases reported by M. Louis, and in those

which have fallen under my own observation, the pains have entirely ceased upon the expulsion of the worm.

Emaciation is a certain consequence of continued irritation from any cause, and of course must be expected in diseases produced by worms. It varies, however, in extent very considerably; in some proceeding rapidly and extremely, in others, presenting a very slow progress, and unattended, as in the former case, by any very great prostration of strength.

M. P. Ch. Louis states, that in all the ten cases the pupil was in its natural state; and thence very properly infers, that the dilatation of the pupil, if a symptom at all, that tænia are present in the intestines, is not one of the most frequent I do not recollect to have met with this dilatation myself in any case unaccompanied with some cerebral affection. M. H. Cloquet, on the contrary, considers dilatation of the pupil a very principal symptom, and mentions it before any other.

The Tænia Solium, or common tape worm, when present in very young children, must be treated in the same manner as the Ascaris Lumbricoides. The only difference is the addition of injections, in which oil of turpentine is employed. To a child of five years of age, a table spoonful may be administered in half a pint of gruel twice or three times a week. Should the turpentine produce much irritation

and bearing down of the fundament, the quantity must be diminished, or if necessary, must be entirely withdrawn. No hazard should be incurred of the descent of the gut; and in young children this might ensue from employing so powerful a stimulant as turpentine, without care.

In older children, the oil of turpentine may be given by the mouth, in the dose of half an ounce, in a little milk, to a child of twelve years of age; and, unquestionably, no remedy thus given is more certain of success.

MARASMUS.

This term, which, in its original signification, meant nothing more than emaciation, we now understand as a general expression for infantile fever; and it has by different authors been variously subdivided. It is almost always the consequence of improper diet or regimen, or is a sequela of the exanthematous diseases. It is also attendant upon the common eruptive diseases of infancy, which perhaps are in such cases true contra-irritants, and prevent the more rapid progress of the internal disease. Dissection exhibits very different appearances; nor do we always find the principal malady in the mesenteric glands; these are perhaps always affected, but in some instances very inconsiderably. When

this happens, there is frequently evidence of inflammatory action of the bowels having had place; coagulable lymph is copiously effused, and the intestines are closely matted together. When the mesenteric glands are principally affected, they are enlarged generally, and exhibit various degrees of softening and suppuration. Occasionally also, the lungs are involved in this complaint; and I have seen them, in a child of six years old, one entire mass of disease, full of tubercles and scrofulous matter. The glands of the neck are frequently swelled at the same time. Incipient tubercles sometimes occupy the liver; but this organ is not often seriously diseased. In some instances there is effusion in the abdomen; in others, even when it has existed during life, it disappears some time before the fatal termination. A tympanitic state of the bowels is common.

Marasmus is very insidious in its commencement, and has generally endured for many weeks before its attracts particular notice. The earliest symptom, perhaps, certainly one of the earliest, is the deranged state of the bowels; they are moved as often, or oftener probably than in health; but the dejections are exceedingly offensive, and unnatural in their colour. The child flushes frequently in the face, particularly after eating; often it is only one cheek that flushes, and the other remains pale and colourless, the

skin burns, and the hands especially are hot; the nights are rather restless, and sometimes profuse perspirations accompany even the early stage of the complaint. The appetite of the little patient is for the most part at this time insatiable; he is continually requiring food, and as it serves to allay his fretfulness, which is excessive, food is generally given in much greater quantity than when he was in perfect health. He still continues to play about, but is easily fatigued, and withdraws himself at times from his companions to rest himself. During this time, however, emaciation proceeds more or less rapidly, and the abdomen enlarges. Gradually he becomes weaker—hectic fever is established—his appetite becomes variable, and at length totally fails. In some cases, however, this remains good to the very last. The bowels are now painful, they become more and more tympanitic, and effusion ensues. A cough, which may perhaps have escaped notice from its slightness, increases, and is particularly troublesome during the night. The child grinds his teeth much, and his nights are very disturbed. Emaciation proceeds rapidly; the patient becomes daily more feeble, and dies from mere exhaustion. Sometimes, however, another disease is the source of the fatal termination, and pneumonia, hydrocephalus, or even acute peritonitis, may be the immediate cause of death.

This is the common course of the disease if left to itself, with some slight variations in the symptoms, as frequent and painful tenesmus, not rarely mistaken for diarrhœa, griping pains in the bowels, sickness, and vomiting. The child throughout is extremely fretful, and naturally becomes more so as it grows more feeble.

The treatment of this disease, in its very early stage, is simple, and generally successful: but if it has been permitted to make much progress, every remedy appears useless.

The first indication is that of evacuating the bowels. There is much difference of opinion respecting the mode of effecting this, some practitioners preferring the more drastic purgatives, and others almost confining themselves to the mildest aperients. Much, however, must depend upon the state in which the mucous coat of the intestines may be at the time. Should it be very irritable, and should any reason exist for inducing the belief that ulceration is present in this tunic, drastic purgatives must be improper. At the same time nothing is more certain than that the administration of manna and salts is commonly worse than useless; they irritate still more, without relieving the bowels of their contents. In the majority of cases, children of any age will bear well the powder which Mr. Abernethy usually prescribes, consisting of a grain of calomel and five grains of jalap, to be repeated

every four hours, till the intestines have been thoroughly relaxed. It will sometimes happen, however (though not improbably from the adulteration of the jalap) that this powder will exert no operation whatever; or, what is equally inconvenient, the child cannot be made to take it. Some other remedy must be then had recourse to; and I have found that senna and salts are very effectual. Enough cannot, however, be given at once, to operate fully, both because it would be difficult to make a child take a sufficient quantity at a single dose, and because, if taken, it would very likely be instantly rejected. Under these circumstances, we shall attain the purpose by repeating the medicine in small quantities every hour, according to the age of the patient. For a child under seven years of age, a dessert spoonful will be a full dose; above this age, a table spoonful may be given. This medicine will always be advantageously preceded by three or four grains of calomel. In regarding the operation of purgatives, we should take very especial notice of the nature and the quantity of the evacuations. This is a never-failing source of deception to those medical men who depend upon the answers of the nurses, after very superficial inquiry. They are assured that the bowels have been well opened, that the medicines have operated exceedingly well, and that the patient has had ten or twelve evacuations,—when probably *no*

feculent matter has been rejected, nothing but dark coloured mucus, and this of course in small quantity. As this sometimes depends upon hard fæces being impacted in the rectum, it is always advisable to have recourse to clysters. These will often bring away one large hard lump of excrement, and the medicine that has been administered by the mouth will then operate freely and effectually. Other purgatives, of course, may be employed besides those which we have mentioned; and far more depends, perhaps, upon the manner in which the practitioner manages them, than upon the particular drugs that he employs.

As this disease is very much attended with inflammatory action in the abdomen, it is often very serviceable to apply a few leeches round the navel, even though the tenderness upon pressure be not severe.* If tympanitis is present, especially soon after its appearance, leeches are exceedingly useful, and tend more than any thing else to overcome it. It is astonishing also, how much, by their application, the fetid odour of the eva-

* Pain, indeed, is a very insufficient guide as to the existence of inflammation in the abdomen. Within the last few days I have seen the body of a woman examined, who suffered scarcely any pain in the bowels during her illness, and yet, upon dissection, the peritoneum was very red, and there were adhesions in some parts, and purulent secretion in others. Our decision as to the presence of inflammation or not, must not, it is clear, depend upon the presence of pain—every other symptom must be taken into consideration, and *the result of former dissections.*

ations is removed, when purgative and alterative medicines alone have failed. I have often found it necessary to repeat the bleeding several times at the interval of three or four days. This has been more particularly the case when the patient is ten or twelve years of age, and still more so when it attacks girls at the time that menstruation should commence. In the last case, leeches are most serviceable when applied to the vulva.

It is no unusual thing in this disease to meet with worms in the dejections, and generally lumbrici. They are often supposed to be the cause of the whole of the malady; and upon their expulsion all medicine is suspended. No mistake can be more fatal than this. Worms are in no case *the sole cause* of disease, though they may be the cause of great aggravation of symptoms. They *never* form in a healthy body, and ought always to be regarded as one of the phenomena of disease, depending for their evolution upon the same cause with the disease itself. The treament, then, is the same; they must be expelled, and their origin must be removed.

The best method of expelling worms is by purgatives and tonics alternately; so that, while the contents of the bowels are expelled, their strength may be maintained.

As a purgative, the combination of jalap and calomel, above alluded to, is the best that can be

used; and it may be advisable sometimes to employ a glyster, containing some oil of turpentine. For more particular directions, however, I refer to the preceding section.

When the bowels have been thus emptied, a mixture, composed of equal parts of the wine of aloes and chamomile tea may be given. The dose should vary from a tea-spoon to a table-spoonful three times a day, according to the age of the child. Under twelve years of age it will seldom be necessary to increase the last quantity. The object of this medicine is merely to procure regular evacuations; purging for long together is decidedly injurious.

When marasmus is the consequence of measles, and it is a sequela of this, even more, perhaps, than of the other exanthemata, it is always attended with inflammation. Sometimes there is pneumonia only, but far more commonly abdominal inflammation is also present; and we have pain, griping, tenesmus, or diarrhœa, hectic fever, rapid emaciation, and death. Its inflammatory tendency is that which most requires notice. There is always a tendency to it after measles, which will be very often removed at once by a timely purgative; but if this should not succeed, recourse must be had immediately to leeches and an antiphlogistic treatment. Its attack after measles is well known among the poor, though they sadly mistake the proper

treatment. For a day or two after the eruption has subsided, the patient appears to be doing well; but in most cases, about the seventh or eighth day from the commencement of the exanthema, the child droops again, and this is the proper time for giving an opening medicine. If it should be neglected when this symptom has appeared, marasmus may be completely established. Wine should be most strictly prohibited. The after treatment will be the same as in marasmus from any other cause.

CHAP. VI.

DYSURIA, OR DIFFICULTY IN MAKING WATER.

Affections of the bladder are not very common in children, and they are scarcely ever fatal, if remedies are recurred to early. The most frequent disorder of this part is a difficulty in making water, every effort to pas it being attended with much pain. There is usually considerable fever and thirst, and tenderness upon pressing the lower part of the bowels. The child draws its legs much upwards, cries whenever it has an operation from the bowels, and strains at the same time to expel its urine. I have never yet seen the bladder much distended in infants at the breast; but should an attack of this kind continue long without assistance, such a result must necessarily ensue.

It is so rare that this disorder terminates fatally, that little light has been thrown upon its nature by dissection. It is, however, probable that the symptoms are produced by inflamma-

mation of the bladder, more particularly that part which is near the neck. Billard found a vivid inflammation of this part in three children, whose bladders were much distended with urine, but he does not seem to have known the symptoms that had preceded death.

Children are attacked at almost every age, but in my own experience, they are chiefly liable at the time that teething commences—the fifth, sixth, and seventh month of age. The cases above-mentioned of Billard's, were much younger—one was only thirteen days, another was two, and another four months old.

The treatment must commence with opening the bowels, and for this purpose castor oil is the best medicine that can be employed. A teaspoonful should be given every three or four hours to an infant under one year of age, till a full and complete operation has been procured. Should there be tenderness in the vicinity of the bladder, two or three leeches should be applied, and they may be encouraged to bleed sometime afterwards. Great attention should be paid, however, to their effect, and particularly that the child does not become bleached; the moment any approach is made to this state the bleeding should be stopped.

The warm bath may also be employed either before or after the application of leeches. The water should be heated from 90 to 96 degrees of

Fahrenheit, and the child may remain in for five or ten minutes, according to its strength. Like bleeding, however, the warm bath requires watching, for with many children it produces instant faintness.

Diluents, as barley water, veal broth, &c. may may be given, as the patient is willing to take them.

With these remedies the following mixture may be advantageously given :—

Tincture Hyoscyami, 3s.
Liquor Potassæ, 3is.
Misturæ Camphor, ℥iv.

A tea-spoonful of this should be taken every two or three hours.

INCONTINENCE OF URINE.

Incontinence of urine is a very common affection among children, and is more frequent with girls than with boys. In the generality of instances it is in the night only that it prevails, and in the day the individuals are enabled to controul the action of the bladder. In others, however, it is present both day and night—the water constantly dribbling away, and scarcely ever so much accumulating in the bladder at once as be discharged in a full stream.

It appears to depend upon different causes, sometimes being the result of simple debility in the muscular structure of the neck of the bladder, and in others being dependent upon some affection of that part of the spinal chord which furnishes nerves to the bladder. In other cases it has appeared to be the consequence of disorder of the kidneys, the urine being very acrid, and stimulating the bladder to expel it. When it is present in the night only, it is sometimes the effect of indolence, the child disregarding a wet bed rather than be disturbed from his slumber.

The treatment must of course vary according to these different causes. In the case of simple debility, the cold bath, exercise, and careful diet will relieve, and in time remove it. In these instances, indeed, it will generally cease spontaneously as the child grows older and stronger.

When it seems to depend upon some affection of the spinal chord, a blister on the loins has often removed it entirely.

It may, however, be stated positively, that incontinence of urine is scarcely ever present without some other disorder, more particularly that which is termed marasmus. Whenever, therefore, it is observed, we must look to its cause; and to this, and not the mere incontinence, our remedies must be directed.

HYDROCELE—DROPSY OF THE TESTICLE.

Boys are not unfrequently the subjects of hydrocele. It generally disappears spontaneously, but if it should not, the water may be let off by puncturing with a needle. If the part should be hot, a lotion made with half a drachm of the extract of lead, and twelve ounces of distilled water, may be used frequently.

FLUER ALBUS—THE WHITES.

This is also a common affection in young girls. I have seen it occur a few days after birth, and at every other age, to the period of puberty, without any manifest exciting cause. In some instances the discharge is very profuse, the parts are highly inflamed, and the patient experiences much pain every time she attempts to make water. In other cases the discharge is the only inconvenience. The treatment consists in keeping the bowels open and washing frequently with cold water. With this simple management, it seldom fails to disappear in a short time. Two or three weeks, sometimes even more, will occasionally, however, be required for its complete removal.

Whenever a child has this affection she should be wiped upon separate cloths from the rest, and

should lie alone. I once saw three children affected at once, and who had evidently taken it from each other. The oldest was only five years old, the second was three, and the last was an infant at the breast.

AFFECTIONS OF THE NERVOUS SYSTEM.

HYDROCEPHALUS—WATER IN THE BRAIN.

Hydrocephalus is the common term for dropsy of the brain, and is indiscriminately applied to very different affections of that organ, but all of which terminate in effusion. As a general division, it may be considered under the separate heads of acute and chronic. Of each of these I shall speak separately; and first of Acute Hydrocephalus.

The acute hydrocephalus is clearly not in every case the same disease; for though the patient dies in a short time, the symptoms preceding death, and the appearances upon dissection, are very different. And before proceeding further, it will be proper to state what are the differences in the morbid appearances now referred to. They are of two kinds.

In the first, the vessels of the pia mater are very turgid, as are also the great sinuses; between the arachnoid membrane and the pia mater there is an effusion of a pearly coloured serum, and sometimes even of coagulable lymph;

the arachnoid itself is generally in some degree thickened. The substance of the brain exhibits numerous bloody points upon being cut into, and which occasionally are so plentiful as literally to colour the medullary structure. The brain is seldom in any part so firm as in health; often it is much softened, particularly that portion which is in the neighbourhood of the ventricles; to such an extent is this softening carried, that the parts connected with the fornix cannot be distinguished, but all is broken down into a thick creamy matter. Serum is contained in the ventricles, and likewise in the vertebral canal. The quantity is very various, but does not often exceed a few ounces.

The other condition of the brain, in which the disease terminates speedily and with an effusion of fluid, is a complete contrast to the foregoing. There is an equal quantity of water, but there is no turgescence of the blood vessels, no bloody points, no softening of the brain, no appearance of coagulable lymph. If any fluid be formed between the membranes covering the brain, it is a clear serum, scarcely differing in its colour from pure water. The brain itself is entirely free from bloody points; it seems sometimes as if it were blanched. It is not unfrequently firmer than in health. The general appearance of the brain in these cases much resembles what has been observed in women who have died from puerperal mania.

Now these two different states of the brain give rise to different trains of symptoms, and they require almost opposite modes of treatment. The first is the appearance discovered in the common acute hydrocephalus; the latter belongs to that form of the disease which has been so well described by Dr. Gooch and Dr. Marshall Hall.

It must be confessed, however, that these two authorities do not exactly coincide as to the state of the brain to which the symptoms are owing, although in every other respect their agreement is complete. I have had an opportunity of confirming, by actual dissection, the statement made by Dr. Gooch; and under these circumstances I do not hesitate to follow him throughout. But whatever may be actually the state of the brain, no doubt can exist but that there are distinct species of acute hydrocephalus, and that it requires the greatest vigilance to treat them properly. The remedies appropriated to one are fatal when applied to the other. That I may not unnecessarily multiply terms, I shall treat of the first as acute inflammatory hydrocephalus, and of the second as acute asthenic hydrocephalus.*

* In the view here given I am the more confirmed, from the result of the dissections made by Dr. Golis. Thirty-one or thirty-two cases are given, in which examination was made after death, and in all there was turgescence of vessels—in the greater portion the brain was softened.

ACUTE INFLAMMATORY HYDROCEPHALUS.

The earlier symptoms of hydrocephalus have been traced by many authors to those general disorders of the digestive organs which are so common with children; and in doing so they are unquestionably in a majority of instances quite right. The fact is, that all those symptoms which have been stated as attending upon marasmus, may, in susceptible children, lead to an attack of water in the head; but it would be wrong to regard such symptoms as actual indications of this disorder. They evince nothing more than a debility of the animal system, which may terminate in this or any other organic disease. It is not, therefore, my object to enumerate as symptoms of hydrocephalus, the circumstances alluded to, though doubtless it is proper that both medical men and nurses should remember that this may be the result.

The acute inflammatory hydrocephalus is first evinced by dullness and general heaviness—sometimes sickness is the first symptom, and it almost always occurs at a very early period of the complaint. The child is unwilling to raise its head, yet not actually incapable of doing so, and will always endeavour to lay it lower than its body. If able to speak, the head is generally complained of: sometimes the patient cries out "oh, my head," and puts its hands to the place;

at others, it merely answers to the enquiry where the pain is, that it is in the head. The head is at this time rolled much about, and is scarcely a single instant retained in the same position. There is intolerance of light, and the forehead is strongly wrinkled. The temperature of the head is higher than any other part of the body. The pulse is not at first much quickened. The tongue is often quite clean at this early stage, more frequently it is white, and numerous red papillæ are seen much enlarged over the whole surface of the tongue. The skin is hot and dry; the face is flushed, but most frequently on one cheek only. The bowels vary much, and they may be either relaxed, or otherwise, at the first invasion of the disease. As it proceeds, great restlestness and irritability are manifested, uneasiness is experienced over the whole body, and the child frequently screams out upon the slightest touch. Sometimes the pains of the extremities seem even to overcome that of the head, so that the patient refers much of his distress to these parts. The most peculiar symptom, however, is a cry, which, when once heard, can scarcely ever be forgotten, or, when heard again, be otherwise than recognised Any endeavour to describe it would be vain. The best account, perhaps, is the one given by Dr. Clarke: "An attack of screaming (as if the child were cut or torn) lasts very often for an

hour or more, without any intermission; after which it commonly falls asleep, or at least remains quiet for a long time, and then another similar attack of screaming takes place, succeeded by further marks of diminished sensibility; the pulse, frequent during the paroxysm of screaming, so that it cannot be counted, accompanied with flushing of one or both cheeks, becomes more slow, and often very irregular after the termination of it."

This first stage may endure for several days, or even a week before effusion takes place. The symptoms of this last are squinting, stupor, a slow pulse, and convulsions. Yet effusion may take place without any one of these occurring; and on the other hand, patients have recovered when every one have been present.

It is generally said that the pulse becomes again rapid towards the conclusion of the disease; and in general this is true. It is not, however, entirely without exception; and on the other hand, in not a few instances the pulse is quick through the whole course of the complaint, notwithstanding the occurrence of very copious effusion. Towards the latter end of the disorder, the patient lies quite quiet, as it were in a profound sleep; the pupils become permanently fixed, either dilated or contracted, and the patient goes off at last without a struggle. In other cases, and this seems to occur where the

effusion is very copious in the vertebral canal—convulsions, more or less violent, ensue, and continue till the child seems to die from absolute exhaustion. Such are the symptoms of this disease in common cases; but to this regular course there are many exceptions, in which all the sagacity of the medical attendant is required to ascertain the nature of the attack.

In very young children, the acute inflammatory hydrocephalus is not unfrequently the sequel of inflammation of the lungs; and no little discredit has been thrown upon the medical attendant in many cases, from the symptoms of the head remaining undiscovered till a second opinion had been taken. Mr. Porter has referred the symptoms in this case, not to inflammation of the brain, but to a change in the state of the blood which is carried to that organ, from the lungs having imperfectly acted upon the vital fluid. It is not impossible that this may sometimes be the case, but it is not invariably so, nor even in the majority of instances, for the disease yields equally to the same remedies which are applicable when hydrocephalus is the original attack. There is only this remark to be made, viz. that should depletion have been carried far, on account of the affection of the lungs, we must look more to the application of cold and counter-irritants than to evacuants as means of cure. In the same way also the acute inflam-

matory hydrocephalus follows the diarrhœa of infants, becoming, in its progress, the more serious disease of the two. Whenever, therefore, either inflammation of the lungs is present, or the affection of the bowels now mentioned, the medical practitioner should be attentive to the state of the brain, for otherwise the stage at which any thing can be expected from medicine will have passed away before the disease is discovered.

Not only, however, does hydrocephalus come on after these diseases, but its attack is at times so insidious that effusion seems to have ensued before the real nature of the disorder can be ascertained. Amidst general feverishness and restlessness, without any complaint of the head, and without any decided symptom to call our attention to it, the signs of hydrocephalus appear to be suddenly developed. The pulse falls, squinting ensues, stupor follows, and there is neither time nor indication for any of those active remedies, from which, when applied in the early stage, so much benefit has often resulted.*

To this also it is to be stated, that sometimes the attack is altogether sudden—from a state of

* A girl, four years of age, was attacked with slight indisposition, with thirst and heat of skin. She did not complain of her head, but was dull, heavy, and unwilling to stir. The mother not apprehending any danger, gave her some jalap and calomel, and did not apply for any medical assistance. This occurred on the Tuesday. On the Thursday, being in attendance on

apparently high health and the enjoyment of the greatest animal spirits—the head is complained of, and the symptoms follow each other with frightful rapidity, till a fatal termination ensues after a very few days' illness.

But with all the fatality of the disease, there are not a few cases of recovery so extraordinary, that as long as life endures medical remedies

the mother, I called, and even then so little did the mother apprehend danger, that she would not have mentioned the child's illness had I not noticed her. At this time there was great drowsiness, and the child complained of some pain in the head. The symptoms now proceeded rapidly—she became comatose, but without squinting, and within six-and-thirty hours from my first seeing her, was dead. On opening the head there was considerable turgescence of vessels, with copious effusion.

The following case was the subject of an inquest:—Frances Leighton, aged nine. On the Thursday she could not eat her dinner or supper, but otherwise appeared well. About nine o'clock at night she complained of her head, and soon after vomited. She went to bed at half-past ten very poorly, and vomited two or three times, but very little, and like water. She vomited easily, and was not at all light headed. She went to sleep directly after getting to bed, but awoke and vomited again, but threw up very little, with great straining. She went to sleep again till morning. She got up about seven o'clock, and vomited again a little. Her mother placed her in a chair with a pillow, and left her to go to work. She was neither convulsed nor delirious, but complained of her head. At nine o'clock she was seen by one of the neighbours sitting with her head in the pillow, and at half past nine she was found dead. On dissection the brain was found excessively turgid with blood, and the ventricles were distended with water.

ought not to be intermitted. In one instance the child recovered, after squinting and remaining in a state of perfect insensibility for two or three weeks.

From what has been said, it will be easily inferred that the duration of hydrocephalus is very various; it varies, indeed, from a few hours to several weeks. The following table is made from Dr. Golis's book on the disease, and shews the ordinary period of its termination:—

Of six patients (in whom the disease terminated fatally)
One died in twelve,
One .... in thirteen,
One .... in twenty-eight,
Two .... in thirty-six,
One .... in forty-eight hours.
Of twelve—One died in seven days,
One .... in fourteen days,
One .... in fifteen days,
Three ... in seventeen days,
Three ... in eighteen days,
One .... in thirty days,
One .... in thirty-two days,
One .... in forty-eight days.

Sometimes life is preserved, but with the loss of intellect, and the patient remains an idiot for life. Fortunately, however, in general, such indi-

viduals are short-lived. The head in some of these cases becomes enormously distended.

In the treatment of the acute inflammatory hydrocephalus, the first dependence is to be placed upon blood-letting, and it will be found best, when it can be done, to open a vein. In very young children this can seldom be effected, and recourse must therefore be had to leeches or to cupping. The extent to which this evacuation should be carried, must be entirely governed by the strength of the child and the intensity of the symptoms; no absolutely general rule can be laid down. It will, however, be seldom advisable in a child of six months old to apply less than eight leeches at once; and should the patient appear little affected by the immediate loss of blood, the bites may be permitted to bleed for several hours after. Next to blood-letting, the application of cold to the head is unquestionably the most powerful remedy we have during the inflammatory stage, and while the scalp is hot; but to be useful, it must be thoroughly applied. The temporary application of cold is in many cases even injurious. Cold cloths should therefore be kept constantly upon the scalp, and they should be renewed as soon as ever they seem to have acquired any warmth. In the severer stage of the disease this will be almost immediately. When ice can be procured it is most highly beneficial, and it may be enclosed in a

bladder. As long as any ice remains undissolved it will retain its low temperature. But by far the most effectual means of employing cold, is to suffer the water to drop in a small stream upon the scalp, and to continue this until the head no longer recovers its high temperature upon intermitting the stream. I have known this practice successful in cases which have seemed utterly hopeless.

Counter irritants should also be employed, and of these, blisters and mustard cataplasms can alone be used in early life. The latter should be placed to the extremities, and more particularly if these are cold. The former are now usually recommended to be applied to the nape* of the neck, and not as was formerly done, over the scalp. This advice is certainly the safest, though I have, nevertheless, known several instances in which decided benefit was derived from following the latter practice. It is only after blood-letting that blisters should be used; when employed before they have a great tendency to excite the system generally, and of course the diseased part in particular.

* Golis recommends blisters to be applied upon the abdomen, as he says this part has more sympathy with the head than any other. The utility of blisters, when applied in this situation, may depend also upon the manner in which they may affect the liver, for there is no doubt but that this organ sympathises very intimately with disorder of the brain, as the brain also does with the disorder of the liver.

When the disease appears to have passed the acute inflammatory stage, and squinting or stupor, or both are present, it is advisable to continue the blister open, and to encourage as much as possible a copious discharge. There is so much difficulty in rightly estimating the effects of medical treatment, that I may perhaps attach more importance to counter irritants thus used, than they deserve. In all those cases, however, of hydrocephalus, under my own observation, in which recovery has ensued at a late period of the complaint, the blisters had been kept open the whole time, and the improvement was not manifested till some days from their first application, i. e. not till a copious secretion had been established from the blistered surface. Thus much is at least certain, that no mischief can arise from their application, especially if those precautions are observed which are laid down in the section on counter irritants. By many practitioners it has been advised to dress the excoriated surface with mercurial ointment, and it is at least innocent. My own experience will not, however, suffer me to attribute any value to it as a method of cure.

We next have to consider the proper medicines to be given internally; and the first place is unquestionably due to mercurial purgatives. The best preparation consists of two grains of calomel combined with five of jalap, which should be

administered every four hours till the bowels are thoroughly evacuated. The evacuations from the bowels are commonly very offensive, and consist of a green glassy mucus, mixed with feculent matter—the latter varying much in quantity, being sometimes exceedingly copious. We must not, however, expect that we shall succeed in entirely correcting this disordered state of the alvine secretions by mercurial purgatives only, for nothing is more certain than that calomel will produce, where it does not find, green evacuations. Those, however, which are the consequence of calomel, are decidedly different in their appearance from the green evacuations above-mentioned, though the difference is more easily perceived than described. It greatly consists, however, in the evacuations that are the simple result of calomel, exhibiting less of that glassy appearance which by some authors has been almost considered as characteristic of hydrocephalus. When, therefore, the mercurial purgatives have acted freely, and from the nature of the dejections, or from the bowels again becoming constipated, castor oil may be very properly substituted. It simply evacuates the bowels without exciting any morbid secretions. If any difficulty should be experienced in giving castor oil, which however, with children, will very seldom happen, senna tea may be recommended, and it will often be found advisable to

give this in small but frequent doses, as a table spoonful for instance every hour, until the bowels are thoroughly cleared out.

Sometimes, however, instead of the bowels being costive, they are much relaxed, and the diarrhœa is even very severe. Under these circumstances, the principal reliance must be placed upon the application of cold to the head, and to counter irritants. I have repeatedly known the symptoms yield to the former, and even where the case had appeared nearly hopeless. As medicine, the compound ipecacuhana powder, with mercury and chalk, has appeared to me the most useful. The chief indication, however, is to restrain the purging, for if this continues the affection of the head will signify nothing—the case will terminate fatally.

Two other remedies have obtained some reputation in the treatment of this formidable disease; one is mercury, so as to obtain its specific action upon the constitution; the other is digitalis purpurea, the common foxglove.

With respect to mercury, I must confess, that when we are driven to its employment as a dernier resort, I have little hope of success. As a purgative I have found it useful, conjoined with other aperients, but I have never yet seen a patient recover where the symptoms were severe, and the constitutional operation of mercury has alone been sought for. Indeed, Golis, whose au-

thority is very high, advocates the use of calomel merely as an aperient. His directions are :—" In little children of from four to five months old, a quarter of a grain; in larger, of from six months to one or two years, half a grain of calomel given internally every second hour will be sufficient, until it has produced green slimy stools four or six times. In habitually constipated children, it is often necessary to give the dose of calomel every hour, and in a high degree of insensibility of the alimentary canal, a few grains of roasted jalap must be mixed with the quicksilver, in order to produce the wished for effect."—English physicians are, however, accustomed to give it in much larger doses, and without the occurrence of any mischief in the intestines. Golis, however, states that his experience does not in this respect coincide, for that he had seen after the too free use of calomel, the hydrocephalus vanish suddenly, and inflammation of the intestines ensue, which terminated fatally. If calomel be given in these large doses, it should be combined with the Dovers powder, for opium is no more contra-indicated in inflammation of the brain than in other inflammations, and it often serves to allay an irritability which is exhausting the patient. It must, however, unquestionably be employed with considerable caution.

The fox-glove is little to be depended upon alone—it is said to be useful when the circulating

system after proper blood-letting remains very irritable, and also in diminishing the violence of the convulsions in the latter stage. The dose recommended by Golis is the eighth of a grain, with one grain of calomel, every two hours, until the effects above-mentioned is produced.

The cases inserted below are given by Dr. Merriman in his edition of Underwood, and are well deserving of notice.*

ACUTE ASTHENIC HYDROCEPHALUS.

One form of this disease has been described by Dr. Gooch and Dr. Marshall Hall. The rela-

* *First.*—In about twelve cases I have given a grain of calomel, and half a grain of digitalis, every four or six hours. The most marked case in which this did good, was in a child, a relation of the late Mr. Chevalier, with whom I was in attendance. The first symptom of the disease was an attack of convulsions. Ptyalism, and a great flow of urine were excited, and the child recovered. But it was some weeks before she regained the use of her tongue, and she dragged one leg after her for some months; when the symptoms began to yield, a blister to the head appeared to be of great service. This little girl is now in all respects well, and her mind as acute as most at her age. In cases of oppressed brain, bearing less decided resemblance to hydrocephalus, I have frequently seen the combination of calomel and digitalis beneficial.

Secondly.—In several cases, I have given from a thirtieth to a sixteenth part of a grain of oxymuriate of mercury, every four or six hours. In two cases it stopped the progress of the

tion of the former is so accurate, that I rather employ his own words than attempt any fresh description.

"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

disease, and the patients recovered. In these it produced copious olive-green coloured stools, and increased the flow of urine. One of these patients had strabismus, and the pulse was irregular, so as sometimes to intermit. Her attack took place during the process of dentition, when four molares were coming forward. The other case, that of a boy, shewed from the first more distinct symptoms of hydrocephalus, and the parents, as I was informed, had already lost two children from that disease.

Thirdly.—In about twelve cases I have given the tinctura lyttæ, in doses of five to ten minims every four hours; and I think that in three cases the disease was decidedly arrested. In one case there was strabismus, and the child had been several times convulsed. The tincture was continued till it produced most severe strangury, from which moment the cerebral symptoms began to give way, and the child recovered. Mr. Hammerton attended this patient with me. The boy, now seven or eight years old, is still unable to use, freely, one of his hands. He is obliged, in order to grasp any thing, to have the fore arm supported on a table, or other flat surface. In the other two cases, severe strangury was the symptom which seemed to occasion relief to the affection of the head.

head—half a sleep, one moment opening its eyes, and the next closing them 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 I am describing is marked by heaviness in the head and drowsiness, without any signs of pain, great languor, and a total absence of all active febrile symptoms." These cases were invariably treated by depletion, and died with the symptoms of exhaustion. In two cases, however, Dr. Gooch saw symptoms of oppressed brain during the last two hours, as coma, stertorous breathing, and dilated and motionless pupil. The following case is given by Dr. Gooch, and illustrates the proper mode of treating the disease.

"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. * * * We directed the gruel

diet to be left off, and no other to be given than asses' 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 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 recovery was complete.

There is yet another form of acute asthenic hydrocephalus, and which requires a somewhat different treatment.

As in the case related by Dr. Gooch, there is drowsiness and languor at the outset; and if the patient can speak, which in several cases that have fallen under my care, they have been able to do, they have complained of pain in the head; they have even fixed upon some precise spot to which the hand is always carried. But in addition to these symptoms there is uncontrolable restlessness; the patient lies perpetually crying out in a manner which I can only describe by saying that it is something between a moan and a shriek; this goes on almost continually, and so loud at times as to be heard at a considerable distance. At the same time it is quite distinct from the scream that characterises the inflammatory hydrocephalus. There is scarcely

any heat of skin, nor does the pulse vary much. The tongue is very slightly furred; nor is there much thirst. Upon being touched or moved, the little patient screams out; yet the head is not laid lower than the body, nor is there, until the very last, any inability to hold it upright. If depletion be had recouse to, all these symptoms increase, the child becomes weaker and weaker, and either dies exhausted as in the former case, or with the symptoms of effusion; sometimes with convulsions. In all the cases I have seen, the friends have suspected water in the head, and children have generally been very actively depleted. Upon opening the heads of several of these children after death, water was found in the ventricles; but the brain, instead of being turgid and soft, was remarkably pale and firm. Under these circumstances, and finding every case terminate fatally that was treated by depletion, I felt justi fied in trying a different plan. As the irritability was so excessive, to quiet this appeared the principal indication. After employing, therefore, mild aperients, recourse was had to opiates; and to a child four years old, five grains of the Dovers powder were given every three hours, till sleep was procured. The first dose has generally been sufficient for this; but still the irritability has returned again and again. In one instance, the dose above-mentioned was given twice a day for a week, before the irritability completely sub-

sided. With this plan I have seen cases recover so like others which had terminated fatally, and in whom effusion was discovered after death, that I cannot doubt that both were of a similar nature

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CONVULSIONS.

Convulsions are of very frequent occurrence in children, and they take place at every age. The most usual time is during dentition, and this process often appears to be the immediate excitant. Convulsions also precede in many instances the common eruptive diseases, as measles, small-pox, &c. Before the last disease they are very common, and it is an usual observation among nurses, that the cases ushered in by convulsions usually terminate favourably. My own experience, not however very extensive in this respect, has tended to corroborate the remark.

The most common convulsion among children attacks them suddenly without any previous notice—all the muscles are thrown into involuntary and irregular action—there is foaming at the mouth, protrusion of the tongue, the eyes, in common language, seen starting from the head—sometimes there is squinting, the face is flushed or almost livid, and the respiration is extremely laborious. These attacks vary in their

extent and in their duration. Sometimes only one side is convulsed, or even one limb only, at others, no one part of the body escapes the convulsive paroxysm. Another kind of convulsion exactly resembles croup, and excepting by the history of the case can scarcely be distinguished—there is the same oppressed respiration, the same loud noise in expiring—the face is flushed, and the eyes protrude, while the most painful effects are made to expand the chest. This form may either be confined to the parts concerned in respiration or extend to a general convulsion, and the one is perhaps as frequent as the other.

There is yet another kind of convulsion which has appeared to me more dangerous than any other—which has often seemed dependent upon disease of the heart. In several cases however which I have examined, no morbid appearances have been found in any part of the body. It could not even be said that the vessels of the brain were more turgid than usual.

In the form of convulsion now alluded to, the child is subject to occasional palpitation of the heart, and which is first noticed at five or six months from birth. For some time there is no farther ailment, but suddenly and without any previous notice, the patient throws itself back, becomes livid in the face, its hands are clasped and the body stiff. In this state it remains a

few minutes almost without breathing—it then gives a deep sigh, which is repeated from time to time till sensibility returns and he becomes as well as though nothing had happened. These attacks are perhaps repeated often, till at length death is the consequence. The patient dies in a paroxysm.

To describe, however, the various forms in which convulsions occur is impossible—nor, perhaps, are any two exactly similar. It is much more important to consider the different states of the system under which they occur and the appropriate treatment.

During the paroxysm of convulsion, from whatever cause it may proceed, it very rarely happens that any remedies can be beneficially applied. It has, indeed, been usual to plunge a child thus attacked in warm water, and from its relaxing effects a cessation of the convulsion is expected. The most that can be said for this plan is, that it is generally innocent; and should the extremities be cold, some benefit may be derived from restoring their warmth. But one caution ought certainly to be observed in employing the warm bath, which is, that the water be not too hot; for should this be the case it becomes a stimulant, and more harm may result from exciting the circulation than advantage from restoring the heat of the extremities.

A safe plan will be to place the feet (if pos-

sible) and legs as high as the knees only in warm water, and to apply cold water to the head, which will in a great majority of cases be found hot, during the attack of convulsions. Much depends upon the mode of applying the cold, and it should be such as to ensure the cooling of the head—if it is temporarily applied, re-action takes place, and the part will become hotter instead of cooler, which is the object of the application.*

The head then should be covered with light muslin well soaked in cold water, and the cold should be kept up by continual dropping from a sponge upon the muslin. Sometimes much advantage will be experienced from gently, but constantly, suffering cold water to drop in this way upon the bare scalp, from twelve or eighteen inches in height. Let it, however, be remembered that to maintain the head cool is the object, and that this must be done in some way or other. Occasionally much good has been derived from throwing a large quantity of cold water at once upon the face, the shock thus induced resolving the convulsion in an instant. A practice of this kind, however, requires considerable care, and cannot always be employed with impunity. This is all that can be done during the convulsion, and be the source what it

* Ice has been often applied, and where it can be procured it is highly advantageous.

may, with the exception of throwing the cold water in considerable quantity upon the face alone, it may be done with impunity if not with benefit. But the principal treatment of convulsions must be pursued in the intervals, and for this purpose it is necessary to consider the different causes which may excite convulsions, and the different states of the system under which they may occur.

It may, indeed it ought to be remarked, that convulsions never occur without an affection of the nervous system, viz. of the brain and that part of the cerebral mass which is contained in the spine of one or of both. This affeetion may, indeed, be only temporary, it may be excited by sympathy with the stomach or some other organ, but the convulsions themselves are purely a nervous affection. In proceeding then to enumerate the causes of convulsions I shall begin with those which appear to be sympathetic, and which cease upon relieving the organ which is primarily affected.

Dentition, or the process of teething, is in irritable children a very common source of convulsion, and may be an excitant long before the teeth protrude from the gums. Generally the attacks are neither long nor dangerous, and cease entirely upon lancing the gums, again to be repeated upon the succeeding teeth beginning their developement. The treatment here is simple,

viz. to lance the gums, and to keep the bowels in a gently relaxed state—and accurately observing the rules of diet laid down in the first chapter.

It is in these simple convulsions that antispasmodics act very beneficially, and sometimes their effect is quite remarkable, more especially assafœtida. I have repeatedly seen convulsions arrested by this medicine, and when many other remedies, such as purging, blistering, &c. had been tried in vain. It will not, however, be often safe to recur to it till the bowels have been well emptied, for their condition may keep up irritation, even when there may be no actual disease in the brain. When, however, convulsions have occurred, great attention should be paid to the head, because they evince an irritability of temperament which may lead to much worse consequences.

The stomach is also an organ with which the nervous system most closely sympathizes, and whether it be overloaded simply, or contain improper food, or worms exist in it, or any part of the alimentary canal, any or all of these causes will excite convulsions; nor when they occur are they always free from danger. I have known death ensue in more than one instance, where no other cause could be ascertained than the repletion of the stomach.

When it is suspected that the stomach is overloaded emetics have been recommended, and un-

questionably they have sometimes been attended with great and decided benefit. There is, however, much danger attending their exhibition, and it is rare that purgatives will not afford equal advantage. To refer again to the state of the brain and spinal chord, it must be remembered that these parts are already in a state of irritation, and liable therefore to be acted upon injuriously by very slight causes. The shock consequently produced by an emetic might act most injuriously, either by rupturing a blood vessel in the brain, or by producing a state of congestion, which might give rise to apoplexy, palsy, or some other serious affection. As a purgative the common powder so frequently before mentioned of jalap and calomel should be given, and should be repeated every four hours till the bowels have been thoroughly evacuated. It will generally be advisable to repeat this powder every other or every third day for a week or fortnight afterwards, and to reduce the diet at the same time. Should the convulsions return, and should it appear that repletion of the stomach was the only cause, the treatment need not then be pursued farther. Great care, however, must be taken that the errors of diet be not repeated, for experience has well proved that convulsions are generally more severe and more obstinate in proportion to their frequency. Should worms be present in the alimentary canal the treatment

must commence in the same way as when they proceed from repletion, but it must be continued farther; and the rules laid down in the section on worms should be carefully pursued.

The management of the above cases is comparatively easy—and if no other cause exist, generally successful; there are, however, cases of convulsion in which, if the brain be not primarily affected, it is at least so materially interested as to require immediate and direct attention.

Now convulsions take place from various causes in the brain—they may, for example, be the consequence of some change in its structure—some disturbance in its circulation; or lastly, from a state of irritation, in which it is difficult to say what is the state of the circulation, but which seems connected with, if not dependent upon an exhausted state of the general system. In enumerating these different causes, that species of convulsive affection is omitted which in one species of hydrocephalus precedes dissolution, and is, indeed, dependent upon the effusion of serum in the ventricles and vertebral canal. It is altogether beyond medical aid; it is simply a symptom of impending death.

Convulsions do not often occur in infants from a change in the structure of the brain; this is for the most part manifested in maturer life. When they do occur from this cause they will be aggravated or lessened by the different states of

the brain, which will be immediately treated of, and the remedies applicable in the one case will be proper for the other.

The states of the brain in which convulsion may occur, so far as the circulation is concerned, may be a state of plethora or fullness of blood and a state of exhaustion. It is manifest that the same treatment cannot be suited for both, and the first object must be to ascertain what is the condition of the nervous system in this respect.

In most cases this may be easy to determine, Should the child be of a full habit—his face much flushed—his pulse strong—his muscular strength great, and with the exception of the convulsive attacks, his general health apparently good, we shall not have much difficulty in recognizing the convulsions as produced by a plethoric state of the system. Much, however, of the accuracy of diagnosis will depend upon the familiarity of the practitioner with the pulse, for a pulse is often pronounced to be strong, and to require depletion, where success will be much more surely obtained by a tonic plan. Nor is the florid countenance at all times a better guide; the brain is often insufficiently furnished with blood, when the face appears flushed and plethoric.* It is only by attentive examination, and weighing well

* Much stress is laid by some practitioners upon the disposition to sleepiness, as indicating a congestive state of the

every circumstance, that the medical practitioner can arrive at a satisfactory conclusion; and even with every effort he will be sometimes compelled to feel his way, to watch the effect of his remedies, and to proceed as he perceives that they act.

Supposing then, that the convulsions are connected with a plethoric state of the blood vessels, the first object will be to diminish this fullness, and with this intent to subtract blood either from a vein directly or by leeches. The quantity of blood to be taken must be entirely guided by the effect produced upon the patient, and should always be sufficient to lower the pulse. Under two or three years of age it is not always easy to open any other than the jugular vein, but this may be frequently opened with great advantage. As to the quantity, Dr. Clarke, whose authority deserves perhaps more deference than any other, states that, " from a child of seven or eight months old two ounces and a

brain—but neither can this be relied upon without much attention to the phenomena attending it. Sleepiness tending towards stupor, accompanied with snoring, and from which the patient is difficultly or imperfectly roused, certainly does indicate such a state, and generally the propriety of bleeding. But there is another kind of sleepiness which directly indicates the existence of a different state, and the propriety of a different treatment. The phenomena of this somnolency are hereafter mentioned, when speaking of convulsions that arise from exhaustion.

half may be taken, and one and a half or two more in sixteen more. Three ounces may be taken from a child of a year old, and two and a half or three afterwards, if the symptoms (those of hydrocephalus) do not yield. At this age two more may be taken in twelve hours after the second bleeding, if it should be necessary, and the patient has not been too much weakened already." This may then serve as a general guide, not, however, to supersede the necessity of discretion in the practitioner and attention to the circumstances of each individual case. To the bleeding active purging must be added, the bowels must be thoroughly evacuated, and the diet must be very meagre. Much difference of opinion seems to exist as to the propriety of counter irritation. I should, however, in most cases recommend the application of blisters to the nape of the neck, with the precaution laid down in the section on counter irritants. The feet should be kept warm and the head cool.

It will sometimes happen that convulsions continue after this method has been fully employed, much diminished indeed in violence, the muscles amidst the more general contractions exhibiting a slight tremor; the patient is at the same time fretful, and either sleepless, or easily disturbed from what appears to be never more than an imperfect doze. It is this state in which opiates are frequently useful, and they should be given

in such quantities as to ensure their effect; a small quantity will frequently irritate and do mischief. The best opiate is the compound ipecacuanha powder of the pharmacopœia. To a child of six or seven months old two grains may be given twice or three times a day; to a child two years old it is better to give five grains at once, and to watch its effect, and should the restleness still continue to repeat it in six hours.

From the various antispasmodics that have been so frequently recommended, I have never, in convulsions attended with plethora, seen the slightest benefit derived, nor should I like to depend upon them. It may, however, be useful after proper depletion, to give a slight tonic; the infusion of chamomile is perhaps the best for children, and the purging should certainly not be carried to excess. After full evacuations have been procured, it is only necessary to keep the bowels open once or twice a day, unless something peculiar in the symptoms should demand more vigorous measures.

With this plan, varied according to circumstances, we shall in most cases be successful; but that death, notwithstanding every care, should occasionally ensue, cannot be surprizing. Sometimes paralysis remains in one or both limbs, either disappearing in a short time, or only admitting a partial recovery after many years.

But convulsions do not occur only in a state of plethora, they occur also in a state of exhaustion

and emptiness of the blood vessels. An animal that is bled to death frequently dies convulsed. Convulsions ensue with many people from a common bleeding in the arm, and they are of no unfrequent occurrence after bleeding.

The difference between convulsions arising from this cause will in most cases be readily perceptible; the appearance of the patient will be precisely opposed to that which has been described as indicating a plethoric state. The face will be pallid—the pulse weak and quick—the strength diminished—frequently there will be emaciation and the same fretfulness, and inclination to doze without the power of procuring sound sleep, which has been mentioned as happening in those convulsions which remain after depletion. The treatment recommended in that case must be adopted here, and sometimes slight stimulants may be added with advantage, but in administering these medicines the utmost caution must be observed. Bleeding invariably does mischief in this species of convulsion, and violent purging is equally injurious. Gentle aperients, such as castor oil and injections, are alone admissible.*

In the description now given of these affections, I have endeavoured to mark the principal

* Nothing has been said of the employment of calomel—but the omission is designed—there are few convulsive patients who bear more than an occasional dose of calomel. I have frequently seen it do mischief when given in larger quantities, by

circumstances which may be observed. We shall, however, be much mistaken if we suppose that they are often met with in practice, without complication. Either of these last states may be combined with teething, repletion of the stomach, and with worms, and then does the difficulty of treatment occur which tries the practitioner. He will have to decide which circumstance to meet first, and which is the immediate cause of the principal symptoms, to know when to commence depletion and where to end, when first to pay attention to the digestive organs, and when simply to regard the nervous system. For all these no rules can be laid down; the practitioner must depend upon his own sagacity. Knowing the different evils he may have to contend with, he must weigh them deliberately and proceed accordingly.

PARALYSIS—PALSY.

Palsy is unfortunately much more frequent among very young children than is commonly

increasing that irritable state of the brain, upon which evidently in great measure the convulsions depend. It seems only admissible where a deposition of lymph is suspected, and in *some* cases of serous effusion—not *in all.* I cannot help here repeating the caution above laid down respecting the use of calomel—it is far from being that innocent medicine which not only nurses and mothers, but even many medical men regard it.

supposed, and in the majority of cases it is incurable, though in most instances it may be considerably relieved.

It sometimes attacks both the lower extremities at once, constituting that form of paralysis which is termed paraplegia, leaving the upper extremities quite sound. Dr. Clarke states that this is the most frequent form; it is at least as common as the hemiplegia, in which one side is attacked, i. e. both the upper and lower extremity together. Occasionally, also, only one limb is the subject of paralysis, as an arm or a leg.

The first attack of palsy in infants does not always attract immediate notice, and several days sometimes elapse before the nurse is aware that the use of a limb, &c. is lost. It happens without any symptom of disordered health, and often when in other respects the child is perfectly well. It is sometimes the result of convulsion.

With respect to the cause of palsy, it may be temporary or permanent; but the latter is the most common. Of the state of the brain in children I can say nothing; I have never known a case terminate fatally.

The temporary paralysis clearly depends upon disorder of the digestive organs, and disappears upon their being corrected. For this purpose the powder of jalap and calomel should be

employed so as to evacuate the bowels thoroughly. Should there be any signs of turgescence of the brain; should the child be sleepy—the head hot; should there be stertorous breathing, or intolerance of light, a few leeches ought to be applied to the head, and cold should be employed in the manner recommended in hydrocephalus. The diet at the same time should be very sparing.

The same plan of treatment is applicable to the more severe and permanent form of palsy in its commencement; indeed we have no means of ascertaining the one from the other excepting by the result.

When, however, palsy is a permanent affection, our principle reliance must be placed upon time; yet there are means which, though very gradually, have certainly a beneficial effect upon paralysed limbs. These means are such as both act generally upon the system, and locally upon the affected part.

Of the general means, diet is the chief—little or nothing must be expected from medicine. To correct the state of the stomach, if this should be in fault; and to prevent constipation is all that ought to be sought for from medicine. For this, of course, no precise rule can be laid down; much must be left to the sagacity of the medical attendant. Purging after the first period of the disease has passed is certainly not beneficial, it

may even be injurious. The treatment recommended in the section on marasmus is equally appropriate in cases of palsy.

Of the local means, rubbing frequently and constantly is the most effectual; it appears to equalize the circulation, and probably in this way to relieve the brain. When also the paralysis is incomplete, and the child is old enough, he should be persuaded to use it as much as is in his power. There seems no question but that the *will* has considerable influence even upon paralytic limbs, if the affection is partial only, and that through *it* additional power may be acquired.

Galvanism has been much recommended in the paralysis of children, but it has not preserved its reputation, and is now almost abandoned to charlatans. I have seen it employed in many cases, but never with the slightest benefit.

Dr. Clarke has recommended irons when the limb becomes deformed from the irregular action of the muscles. It is, perhaps, possible that in some cases benefit may be derived from their use, but they are in general rather a substitute for, than an assistant to muscular action. In one case, *the loss of power in the limbs, which had been in some measure regained, was the consequence of wearing irons,* and upon the whole I am inclined to think with Dr. Merriman, that it is scarcely possible that they can be useful in

any form of paralysis excepting as a support and substitute for the muscles.

Palsy of the lower extremities is sometimes the consequence of disease of the bones of the spine, some of which on examination will be found prominent and tender. In this case it will be necessary to employ setons, and the little patient must be treated exactly as an adult under similar circumstances.

CHAP. VII.

RESPIRATION.

CATARRH.

CATARRH, or common cold, which with adults is usually a mild disease, is not unfrequently productive in infants of fatal consequences, and its danger is greater as the age of the patient is less remote from birth. The first symptom is frequent sneezing, which is soon followed by a copious discharge of common phlegm or mucus, and this gradually changes into the appearance and consistence of matter. The infant can only sleep with the mouth open; the respiration is sonorous, and a strong wheezing is perceptible, especially during sleep; difficulty of breathing is manifest in proportion to the abundance of the discharge, and as the disorder extends to the lungs. The child evinces great anxiety in its countenance, is unable to suck from the obstruction of the nostrils; and if it attempt to seize the breast, it quickly looses it again. If this

continue, exhaustion ensues, the child becomes emaciated, and dies apparently from mere debility. A fatal termination, in some cases, takes place in three or four days; from a week to ten days is the more common period at which death happens. Dr. Denman has mentioned a singular purple streak at the verge of the eyelids, in a similar disease to this, which Dr. Underwood has termed "the malignant snuffles." This appearance is certainly not invariable.

The danger of this disease appears to commence with the difficulty of breathing, by which the child is prevented from taking sufficient nourishment, and also from the blood not undergoing probably the usual changes in the lungs.

Sometimes an affection of the head succeeds, and the child becomes comatose, and dies with the symptoms of water in the brain; sometimes, also, convulsions attend upon the disorder, and the patient expires during a paroxysm.

The appearances, upon dissection, are usually confined to an inflamed state of the membrane lining the nose, and extending towards the larynx, the membrane being at the same time softened and tumid.

In the treatment of this disease, much benefit will be derived from purging, and inducing a secretion from the bowels. For this purpose, the neutral salts, either the Glauber, Epsom, or Chel-

tenham salts may be given, so as to act freely upon the mucous membrane. Should there be much heat about the nose, a leech may be applied externally to a child a month old; fomentation may also be applied externally. No advantage will be experienced from directing steam up the nostrils; it may even prove injurious, by producing additional irritation. Should the child be unable to take the breast, it should be entirely withdrawn, and nourishment administered with a spoon. Whey is very useful in this respect, proving at the same time a mild aperient. Chicken or weak mutton broth may also be given, care being taken to remove every particle of fat.

There is another form of catarrh, in which a strong membrane is formed over the membrane lining the nostrils, of the same nature with that which is formed in croup. It does not seem, however, easy to distinguish this from the former, and the treatment does not materially differ.

PNEUMONIA—INFLAMMATION OF THE LUNGS.

Inflammation of the lungs is one of the most frequent and one of the most fatal diseases of infancy; its fatality, however, depends much more

upon the neglect with which it is generally treated, than upon any peculiar malignity in the disease itself.

It often comes on with the symptoms of a common cold, to which in a short time difficulty of breathing succeeds, and a dry hard cough. After every attempt at coughing, the child cries as if from pain, and may be observed to restrain every impulse to cough as long as it is able. In the progress of the disease the voice becomes somewhat hoarse, and the patient seems to breathe through a liquid—a slight rattling is perceived in the throat; if the difficulty of breathing continues to increase, the face becomes bloated and puffed, the lips livid, the nostrils expand with great effort at every inspiration, the child becomes weaker and weaker, and at length, after much and severe suffering, expires. Sometimes in the course of the complaint the head becomes affected, but not always with relief to the lungs; but the complaint in these organs remains unabated.

Sometimes for a few hours before the inflammation of the lungs is clearly manifested, the child seems slightly unwell, and the breathing is rather hurried, but scarcely more than in health, the countenance is pallid and the extremities cold, the pulse not much if at all accelerated. There is also some slight cough present. To

this in a few hours accede the proper symptoms of inflammation of the chest.

In general there is not much difficulty in recognising this disorder, but in treating it there is often much sagacity required. On the one hand, that depletion may be carried far enough; on the other, that the child may not be so far weakened as to die from exhaustion.

Now, in curing this or any other inflammation, two objects are to be attained; the first is to check the inflammatory action, the other is to enable the affected organs to recover their healthy condition; for, after the first is attained, there will still be a state of parts remaining, the consequence of the previous inflammation, which must be removed before the disordered function can again be effectively performed. For this purpose a considerable portion of strength is requisite, and if it be not present, the patient will as surely die as though the inflammation had remained unchecked.

I was called to see an infant ten months old, and was informed beforehand that it had inflammation of the lungs. On visiting it, the child was perfectly pale, and almost exanguine; its appearance was precisely that of a child which had suffered from hæmorrhage; he had slight cough, the breathing was not very manifestly quickened or difficult, the pulse was weak, and the extre-

mities cold. I contented myself with ordering a mild aperient, and putting the child in a warm bath; and in six hours I saw it again. It had now recovered from the state of collapse in which it lay in the morning, and inflammation of the lungs was plainly present, though not in a severe form. Three leeches were applied to the chest, and a mixture given of oxymel of squills and syrup of poppies. The next morning the breathing was a little relieved, and the cough appeared less painful. I now thought it better to wait a few hours before pushing active measures any farther; and I found the advantage of it—the difficulty of breathing gradually disappeared, and in two days the child was well.

Now, the mother recognised this disease as similar to one by which she had lost two children only the year before; both these had been treated with great activity--bleeding, blistering, the warm bath, and the whole antiphlogistic regimen had been most carefully and repeatedly practised; and both children died at the end of a fortnight in a state of complete exhaustion.

While, however, the avoidance of too much depletion is advocated, it must still be underderstood, that with children stimulants cannot be employed without the greatest risk. This I the rather notice, because with adults, when, in inflammation of the lungs, the acute stage has passed away, and expectoration is fully estab-

lished, mild stimulants are often useful. Infants, however, are so liable to inflammatory action, that the same practice cannot be recommended for them.

The temperature in which children suffering from inflammation of the lungs are kept, should be very equable, and carefully preserved from sudden alternations. It should not, however, be kept high, for this is quite as injurious, if not more so, than a very low temperature; from sixty to sixty-five degrees of Fahrenheit should be the range of the thermometer.

It will be found advisable to clothe the patient entirely in flannel, and the extremities should be particularly attended to. Any diminution in their proper heat will almost certainly be followed by an aggravation in the complaint of the lungs. When the bowels have been gently opened, the principal object of medicine must be to allay the cough, and to keep up a due action of the kidneys. The solution of tartar emetic will also be found useful; it acts more certainly upon the skin, and with less previous excitement than most sudorifics. The following is a good formula for this stage of the disease:—

Oxymel of squills, ℥ss.
Solution of tartar emetic, ʒi.
Syrup of poppies, ℥js.
Infusion of linseed, ℥iii.

A tea-spoonful to be taken every two hours by a

child six months old. It is not always easy to proportion the dose; but should it make the child sick, the active ingredients should be lessened till this inconvenience does not happen.

CYNANCHE TRACHEALIS—CROUP.

Of all the diseases which attack infants this is assuredly the most distressing; and when it occurs, the most fatal. Fortunately, though not uncommon, it is by no means a very frequent disease of infancy.

The invasion of croup is in most cases very insidious. It commences with the symptoms of a common cold—a discharge from the nose, with hoarseness and slight difficulty of breathing; the latter is often so slight, that it appears to be the simple consequence of the accumulation of mucus in the nostrils, or, as it is commonly termed, of a stoppage of the nose. The fever is not either at this time, or at any period of the disorder, very urgent, the pulse is but slightly accelerated. A cough is now perceived, not at first exhibiting any thing very peculiar, but in a short time becoming exceedingly shrill, and resembling in some measure (as it has often been said) the crowing of a cock. This peculiar shrillness, however, is not always attendant; sometimes the cough is extraordinarily deep and hoarse, the

sound, being as it were, veiled.* The voice is hoarse, and the cry is almost null, or only after much effort, a part of the sound is heard, which is little more than a squeak. The respiration at first not much affected, gradually becomes more and more difficult, and is attended with constant wheezing. Both the cough and respiration are at times rendered worse by severe spasm, threatening instant suffocation. The patient lying for a few minutes in a state of quietude, suddenly starts up as if frightened, gasps for breath, pants with excessive vehemence, and then gradually again sinks to rest. Thick viscid mucus is expelled by coughing, but without giving any relief. The countenance becomes bloated and flushed, often nearly livid; the utmost anxiety is depicted, and continues increasing until the patient either becomes comatose, and dies from gradual suffocation, or expires suddenly in a convulsive effort to respire. Such is the course of this terrible disease, if it be not recognised early and arrested. When the respiration has become difficult, recovery is almost impossible.

The appearances, upon dissection, are inflammation in the windpipe, and often in its ramifications; but the essential cause of death is the formation of a factitious membrane, more or less thick, lining those parts, and increasing to such

* This term is adopted from the French "voilée."

an extent as to impede the ingress and egress of air into and out of the lungs. The difficulty of respiration is dependent upon the formation of this membrane, and hence the danger of the disease when it has taken place. Very rarely indeed can it be expelled.

With so fatal a disease, it is manifestly of the highest importance that its very first symptoms should be known and attended to. Hoarseness must always be looked upon with suspicion, yet hoarseness occurs often in young children without any bad consequences. But it must always be remembered, that the disease which constitutes croup, is but a higher degree of that which causes hoarseness, and consequently the one may easily at any time pass into the other.

The cough attending npon croup is so peculiar, that when this exists no question will remain of the existence of the disease; but, unfortunately, this is not always the earliest symptom, and when it is perceived the disease may already have made a fatal progress.

In all the disorders of children it is necessary to watch, with the utmost vigilance, every change, nor will any medical man properly consult his own reputation who does not see infants, who suffer under acute disease, twice or three times a day, and more particularly while they are asleep. This may seem to the friends unnecessary, and it may seem so in many cases to the medical at-

tendant himself; yet, by neglecting it, symptoms may in the intervals of his visits have so rapidly come on, as to render all future assistance useless. Children certainly recover from states of far greater depression than adults, but they also sink much more rapidly. Their alternations of health and disease are, when compared with similar alternations in the adult, far more sudden, and will not admit of so much delay in their treatment. I should be inclined to say, that an hour in the disease of infants should be regarded as a day with an adult. Now the importance of these remarks will be found in the treatment of croup; nor can I better illustrate it than by the following case:—

A robust, plethoric child, two years of age, was seized with hoarseness, and very slight difficulty of breathing. There was, besides, very little indisposition about him. He had lost a brother about the same age, from disease which had come on with similar symptoms, and had terminated in what, from the description given, appeared chronic croup. The child passed through the day comfortably, yet there was something in his manner which arrested the attention and prevented any decision as to the nature of the complaint. I called at night, and found him asleep, without any particular dyspnæa, yet his breathing was not natural. While I sat by him he started up in a complete fright—his breathing

was hurried—he gasped for his breath—there was slight, but very slight croupy sound—he was greatly agitated—clung to the nurse—coughed some thick mucus up—and then sunk back again asleep. His nurse, who had reported before that his sleep had been undisturbed, now stated that he had started up in the same manner repeatedly, almost every quarter of an hour, but had always become quiet again immediately. Under these circumstances eight leeches were immediately applied to the windpipe, which bled profusely for six hours, and two grains of calomel were given every three hours. The hoarseness was relieved, but the paroxyms of dyspnæa were removed completely; and towards the evening of the next day nothing remained but a slight hoarseness, which also shortly disappeared. Now, had these symptoms been permitted to have gone on unchecked till the next morning, a factitious membrane would in all probability have been formed, and remedies would have been vain.

The above case serves, then, to prove the necessity of excessive vigilance, and it shews also that the spasmodic difficulty of breathing is one of the earliest symptoms. When, therefore, a child suffers from paroxsyms of this kind, attended with hoarseness, the disease should be attacked at once.

Yet again, even this symptom, characteristic as it is, may be mistaken by incompetent judges.

for many children are subject to starting in the sleep, arising from indigestion, having, to a superficial observer, many of the same characters with the inquietude arising from croup. A careful comparison of the accompanying circumstances, will generally be sufficient to remove all mistakes from this source. In the starting from indigestion there is no hoarseness; and though for a few moments there may appear a little difficulty of breathing, it will be found to be the simple consequence of alarm, and not from any affection of the air passages. It ceases as soon as the child can be calmed, and does not commonly occur twice in the same night; whereas a child affected with croup starts up very frequently, and never lies quietly for more than a quarter of an hour or half an hour at a time.

The stridulous cough is another symptom which characterises croup, and not unfrequently for several hours before the severer stage commences, the peculiarity of the croupy cough may be recognized.

The importance of dwelling upon these symptoms will be at once acknowledged, when it is remembered, that after the first stage has passed, scarcely any hope can be given of recovery. If this should happen when the factitious membrane has once been formed it can only be regarded as a lucky accident, it cannot be calculated upon.

In the treatment of cough, very many and different remedies have in time past been proposed. They are now, however, almost confined to two, viz. blood-letting and calomel, and perhaps in the latter stage emetics may be recommended.

Blood-letting, to be of any use, must be recurred to early, and in sufficient quantity; in the second stage, *it is absolutely injurious.* The object of bleeding is to prevent inflammation, and thus to prevent also the formation of the false membrane. For this purpose leeches, cupping, or general blood-letting, must be practised according to the age of the child.

In children under two years of age it does not often happen that depletion can be performed in any other way than by means of leeches. Occasionally, however, it is possible to open the jugular vein; and this mode of depleting is always to be preferred either to leeches or cupping, when it can be practised; and the rules which have been laid down on this subject, with respect to hydrocephalus, are equally applicable in croup. It is useless to bleed slightly—it should always be practised, so as to affect the system; either the symptoms should yield, or the bleeding should be continued to faintness. But bleeding, I repeat, is only applicable to the first stage of croup, and before the factitious membrane is present. When this is formed it can be of no service; but, as it has been before stated, it may be

injurious by diminishing the strength. It is barely possible, should the vigour of the patient permit, that the membrane may be ejected by coughing; but if blood-letting be practised when this is the only chance of recovery that remains, the cough must necessarily be weakened, and the power of expelling the membrane diminished. In the early stage of croup, however, blood-letting may certainly be termed an heroic remedy. At the same time that bleeding is practised, calomel in very large doses should be given, not merely as a purgative, but to induce a change in the action of the part, and to promote the absorption of the factitious membrane, should it have been formed.

In iritis, or inflammation of the iris, we have a similar affection with croup, i. e. coagulable lymph is thrown out upon the iris, and gradually extending over the pupil and irritating the iris to contract, produces a total state of blindness. Now in this state mercury is the only remedy; it stops at once the morbid action by which coagulable lymph is thrown out, and then favours the absorption of that which has already been deposited. Such is also apparently the influence of calomel in croup; but it is of no avail to give it in small quantities, or only once, it must be given in large doses, often, and till the symptoms have vanished. It should also be stated, that in addition to preventing the morbid action by which

the membrane in croup is formed, it seems to loosen its adhesion to the organised surface beneath, and thus to favour its ejection. The following case, which occurred in the practice of Dr. Conolly, of Tours, well illustrates this fact; and it shews to what an extent the medicine ought to be given.

The child exhibited all the symptoms of croup—" the stridulous breathing might be heard on the outside of the house; the pulse was 160; and every thing indicated the last stage of croup. For the satisfaction of the mother, rather than with any hope of advantage, five grains of calomel were given to the child every hour; six hours afterwards the boy seemed to breathe a little better, the respiration appeared not so *dry*, and the medicine was continued for four hours more; when the gums were beginning to be affected, it was given every two hours only; at the end of twenty-four hours, the child began to expectorate, and at length the *whole of the false membrane was expelled;* the calomel was persevered in for some days longer in diminished doses, and the child got well."* It is reasonable to suppose, that when the membrane becomes somewhat loosened, emetics may be serviceable, but till this has happened no benefit can be expected from them.

* Medical Repository, December, 1826, p. 502.

The warm bath may perhaps be an useful auxiliary to the remedies here mentioned, but it can only be regarded as an auxiliary—alone it can do nothing.

Blisters and other counter irritants have been employed and much recommended in croup; but my own experience does not corroborate the accounts that have been published of their value. I should not recommend them. These are the only remedies that really deserve notice. Upon no others can any dependence be placed.

PERTUSSIS—HOOPING COUGH.

Hooping cough is one of those diseases which sooner or later attacks most children, but only occurs once in life, so that an individual who has had it, is seldom affected a second time.

When it does occur it is generally epidemic, and the French and English physicians are in complete opposition respecting the manner in which it spreads. The former maintain that it is not infectious, and that it is never caught by one individual from another, while the latter believe that it is infectious. It would, perhaps, be difficult to adduce evidence on either side that should be perfectly unexceptionable, but prudence certainly dictates that we should act as though the English opinion were positively cer-

tain. Children should not be wantonly exposed even to the chance of being infected.

Hooping cough comes on with the symptoms of common cold—the eyes are inflamed—the nose runs—the breathing is slightly difficult, and there is a short cough, not always at first spasmodic nor occurring in paroxysms, and scarcely ever within the first fortnight exhibiting the peculiar sound to which its name of hooping cough is owing. At length, however this sound is manifested, and in the intervals of the cough the little patient in the common and milder cases seems well. At this time the cough occurs in fits; shortly before each attack there is a little hurry in the breathing, and the child is conscious of the approach of the cough; this comes on, and often with such violence, that there even seems some danger of suffocation, and it continues till a quantity of thick tenacious mucus is ejected, either with or without vomiting. The cough almost always occurs after taking food, and in this case the stomach is generally emptied before the attack ceases.

This is the common course of the disease, and in this manner it will frequently endure for several months without any further consequence. The violent concussion, however, to which the whole system is subjected in the paroxysms of hooping cough frequently gives rise to more dangerous symptoms, either of the brain or of the

lungs, or of both. Sometimes convulsions ensue, and even terminate fatally; at others there are signs of inflammation of the brain, and in a third modification there is inflammation of the lungs; all these complications will require appropriate treatment, that is, they must be treated exactly as though they appeared without hooping cough.

Now, in speaking of the treatment of hooping cough, it is impossible to lay down any rules without first considering the nature of the disease—what is its seat, and in what does it consist.

In regarding the pathological appearances of hooping cough with a view to the elucidation of this question, we find that all authors agree in stating that there is more vascularity than usual in the bronchial membrane, or that membrane which lines the wind-pipe and its ramifications. But that this does not sufficiently explain the whole circumstances of the disease is clear from this, viz. that the cough attendant upon common bronchial inflammation is not accompanied with that peculiar sound which gives the hooping cough its name; and that the vascularity of the membrane may be notwithstanding exceedingly great. Nor can we forget that the shock of the cough may be fully sufficient to cause the inflammatory appearances in question, which thus instead of being the cause, may be the conse-

quence of the disease. In two cases examined by Breschet the eighth pair of nerves, those which more especially are subservient to the functions of respiration and digestion were found diseased, but no other instances have yet been recorded. The only constant appearance is the inflammatory condition of the bronchial membranes. Anatomy can afford us no further assistance, and we must therefore have recourse to the phenomena of the disease for additional information. In looking at these, we find—first, that the cough is of that kind which is called spasmodic, and which must therefore be produced by some action of the nervous system; it is terminated by the ejection of much viscid mucus, and generally by vomiting, especially if food has been taken; and lastly, it is almost always excited by taking food. The paroxysm is also always preceded by a slight difficulty of breathing, and by a peculiar sensation, which enables the patient to recognize the approach of the cough for a certain time before the attack, varying from a few seconds to several minutes.

Now, in the experiments instituted by Dr. Wilson Philip, in which the eighth pair of nerves was divided, we find that this division was followed by an *attempt to vomit*, and *by a difficulty of breathing*, that upon dissection the lungs and tubes were "clogged with a frothy mucus," and the surface of the lungs were marked with dark coloured patches.

Here then, from direct experiment upon the nerves serving to respiration, we have a state of the lungs produced, nearly similar to what appears after hooping cough, and surely nothing can be more justifiable than from similar appearances to infer similar causes. If this reasoning be correct, it will be very clear that hooping cough is rather a disease of the nervous than of the respiratory system. But, in addition to the proof thus arising from analogy, there are the two cases reported by Breschet, and the inference from which ought not to be negatived because the same appearances have not been seen in other cases. For whatever may be the primary cause of hooping cough, it is clearly of a temporary nature, and when it proves fatal it is seldom from the cough merely that the result proceeds, but from the convulsions that accompany it, or from some other disease, as hydrocephalus, which is induced. These also often take place early in the disease before we could expect any organic change to be established, or (hydrocephalus especially) in the decline, when the cough is diminished, and when, consequently, supposing the source to be organic originally, we may well suppose the change to be less manifest. But further, the changes in the structure of nerves are necessarily subsequent to some interior action with which we are unacquainted, and which only occasionally, even when that there is such an internal action is most ma-

nifest, is externally developed. There even are cases, where actual organic change under the influence of medicine, ceases to produce its usual symptoms. I once examined the head of a young man who had died from consumption. About three months before his death he was seized with epilepsy, which came on most regularly at two o'clock post meridiem. Six weeks before death I saw him and gave him large doses of the nitrate of silver. After the first dose (5 grains) he had a slight shivering at the usual time instead of a fit, and had no further return of the epilepsy. On examination of his head after death a large cartilaginous tumour was found lying upon the superior and anterior portion of the right lobe of the cerebellum slightly attached to this part, but strongly to the septun. There were also twelve ounces of fluid in the ventricles. Now that the appearances here described gave rise to the epileptic paroxysms can scarcely be doubted, yet it is also clear that there must have been something else which the medicine removed, for the paroxysms ceased. What this was, however, could not be discovered; it might by possibility be something organic, but it is much more probable that it was merely a mode of action. Even then, supposing that in hooping cough the observations of Breschet have not received additional proof, yet *they* stand, and are perfectly consistent with, though not corro-

borated by other dissections, and at last, to employ the language of Haller, one positive ought to weigh down a hundred negative facts. The inference then is, that hooping cough is primarily an affection of the nervous system, and that in our treatment of it this system is to be regarded, not, however, forgetting the various complications by which it is so often accompanied.

As, in every other diease, our first attention must be paid to the state of the bowels—these should be thoroughly evacuated, and in the first instance no better medicine will be found than a powder composed of jalap and calomel, and should this not operate freely it should be followed by infusion of senna, given according to the age of the child in moderate, but repeated doses, till the intestines are emptied. It is, however, by no means desirable to keep up a relaxed state of the bowels, as this both weakens the child and in most instances seems to increase the cough. This being premised we must now proceed to some plan, which must be persisted in till the disease yields. And in laying this down I shall first mention the system which I have myself found best to succeed, and afterwards consider the various plans which have been proposed and pursued by others.

Friction over the chest and spine is always useful, even when practised without any liniment, but, with the addition of an opiate embrocation,

is highly serviceable. The following is a very excellent remedy of this kind :—

Olei camphoratæ, ℥iss.
Olei succini, ʒiii.
Tinct. opii, ʒi. Pro linimento horâ unâquâque infricando.

Camphorated oil, 1½ oz.
Oil of amber, 3 drams,
Tincture of opium, 1 drachm.—To be well mixed, and rubbed over the chest and spine every hour. It should be shaken before it is used.

This liniment should be thoroughly well rubbed in every hour, unless the opiate should seem to induce any thing like stupor. The effect of an embrocation of this kind is in many instances very striking; the cough comes on much less frequently, and the paroxysms are less violent. As it gives trouble, nurses are very much inclined to spare themselves; and even when they apply it regularly as to the time, they will rub it idly and ineffectually. I have, however, seldom been wrong, when, upon finding the cough worse, I have immediately stated my conviction that the friction had been neglected. It so seldom fails to alleviate the disease, that it affords a tolerably fair criterion of the attentiveness of the nurse.

It will sometimes be proper to give medicine

internally, and this may be either such as has a tendency to alleviate the cough only, or to correct the state of the stomach. It will most frequently be found necessary to do both. For the former, the following is an useful mixture, but it must not be given so frequently as to produce drowsiness; and should there be any symptoms of affection of the brain, it must be at once suspended.

Vini ipecacuanhæ, ʒi.
Tinct. scillæ, ʒi.
T. camphoræ comp. ℥ss.
Mixt. camphoræ, ʒiiss. Sumat. coch. parv. 2ndâ quâque horâ.

The sulphate of quinine has been lately recommended by some one as a very beneficial medicine in this disease, and would probably be useful. I cannot, however, speak of it from my own experience. Another medicine, however, the action of which must be similar, and which is a popular remedy, I have tried extensively, and unless I am much deceived, with great success. This is the sulphate of alum, given three times a day in doses of five grains each, to a child above one year of age, and three grains under that age. The effect of it is to diminish the great flatulence which accompanies hooping cough, and thus to take away what seems to be a great source of the paroxysm. Fully aware of the slight dependence that can be placed

upon mere popular opinion, I long distrusted the effect of this medicine, attributing to simple coincidence the manifest amendment that followed the administration of the sulphate of alum. Even now I fear to speak confidently; yet, after having given it in thirty or forty cases, and in all with some benefit, it is at least allowable to make the above statement. The multiplied experience of different medical men, will not fail to prove the proper estimation in which it ought to be held.

A few years ago, Dr. Webster proposed the application of leeches to the temples in hooping cough, and reported very many cases in which this practice quickly succeeded in removing the disorder. In some instances, where there was evident disturbance of the brain, I have tried this treatment with great advantage. The depletion has been followed by considerable amelioration of the cough, as well as of the head. Where, however, the brain was not affected, it has not appeared to me to be equally beneficial.

By many medical men emetics are regularly given, by some every morning, by others three or four times a week. The little experience I have had of this practice has not been attended with such success as to encourage me to pursue it. Counter irritants particularly, by means of the tartar emetic ointment, have also met with much support; and where inflammation is pre-

sent they will doubtless be useful. In the common and milder kind of hooping cough, I have never seen any good result from the employment of counter irritants.

These are the only modes of treatment which it seems necessary to mention; like every other obstinate disorder, however, hooping cough has been favoured with a variety of specifics, all of which, probably, are sometimes useful, and from which, at others, no benefit whatever is derived.

It would not, however, be correct to leave the subject without mentioning the advisableness of change of air. This, in the latter part of the disease, when the violence of the first symptoms begins to relax, is exceedingly useful, and will not unfrequently check the disorder at once. In the earlier stage of the complaint, however, no benefit is derived from change of air, and in this opinion, the result of considerable observation, I am happy to be confirmed by Dr. Merriman.

OBSERVATIONS

UPON

SOME FORMS OF SPINAL AND CEREBRAL

IRRITATION.

OBSERVATIONS, &c.

MODERN research has examined, with much care and ability, the functions of the nervous system; and avoiding the rock upon which earlier enquirers were wrecked, has unquestionably added much that is valuable to the stock of human knowledge. The nature of that unknown power or principle by which the body is first enabled to perform living functions, has escaped, indeed, as probably it ever will escape, the eye of human intellect; but the laws by which the different systems act, and the sympathies by which they are combined, are, in many respects, ascertained. Considerable, however, as the acquisitions are, and certain, so far as at present we know, the deductions, scarcely any use seems to have been made of them in the practice of medicine, and the investigation of disease. If, however, the nervous system is more or less connected with every function of the animal body; if the circulation of the blood, the phenomena of respiration, and the operations of the intellect,

cannot be carried on without its intervention, the manner in which it is disregarded, cannot but be a most important defect. It has, perhaps, in great measure, arisen from always contemplating the brain as acted upon by the circulation, and never reversing the order of review. But, throughout, it should never be forgotten that the animal functions operate in a circle, that the obstruction may begin in any part, may thence be communicated to the rest, and these may injuriously re-act upon the original portion.

It has been stated that some things are actually ascertained in the functions of the nervous systems.

And first, no one can now doubt that the brain is essential to the exertions of intellect; that it is the organ by which our thoughts, our feelings, and our passions, are in some way or other produced. Of the peculiar offices of its separate parts, very little can properly be said to have been ascertained. Enthusiastic and highly gifted as Gall was, and as Spurzheim is, their enthusiasm has unquestionably predominated over their cooler reason. They have seen connections between their Anatomy and Physiology which others cannot see, and believe themselves to have proved the existence of distinct portions, which, to say the least, have not been established by others. But whatever opinion we may be induced to form respecting their mapping the

skull, and their metaphysical principles, it must be acknowledged that they have induced men to think more accurately upon the functions of the brain; they have shewn that matter only can be the object of investigation of material beings, and that a proper sense of this must necessarily induce a humility favourable to the reception of every truth. It is an additional step in the progress of human knowledge, to leave the idle speculations of the schools, and to seek information on every part of science, only from those sources whence it can be drawn. In disease, the information thus afforded, is extraordinarily important, for working on bodily organs, every means must be looked to by which those organs may be affected, and we learn, that upon the brain moral causes continually operate with the greatest advantage, or in a manner the most injurious.

Mr. Bell, however, has been more successful than Gall and Spurzheim, in analysing the functions of different parts of the nervous system, and has clearly shewn, that there are two portions, one of which bestows sensation, and the other the power of motion. The only part in which they can be separated by dissection, is the spinal column, though every day affords instances of disease in which one or the other is alone affected. But, perhaps, in a medical view, the most valuable results have been obtained by Dr.

Wilson Philip. By him it has been proved that secretion is affected through the medium of the nervous system, and that the heart is also very greatly influenced by the same system. Hence we may conclude, that when indigestion, and its accompanying evils of nervous irritability, severely affect any individual, the brain and spinal chord, one or both, are suffering as well as the stomach; and if this be allowed, the propriety of directing remedies more immediately to these organs, than has hitherto been customary, will not be doubted.

But I wish to go farther than this point, and to regard the nervous system not as merely influenced by affections of the kind above alluded to, but as actually being the source from which they proceed. It is now much more generally acknowledged than formerly, that functional must precede organic diseases, and consequently, if the nervous system preside over and govern function, this same system must, in very many instances, be first affected. It becomes, then, necessary to ascertain these instances, for it is clear that our chance of curing disease must be in proportion to the accuracy of our diagnosis in the earliest periods.

The affections which appear to me referable to irritation of the spinal chord, are perhaps, in their origin, confined to this portion of the nervous system only; but so intimately are the sym-

pathies united, that but a very short time elapses before the brain is also comprehended in the disorder. Of the nature of the irritation, or what is the state of the blood-vessels of the part affected, dissection cannot afford us any information, inasmuch as patients rarely die from maladies of this kind, till the functional has passed into organic disease. But I am inclined to believe, that in most cases there is some irregularity in the local circulation—that there is frequently congestion, and it may be conceived that it will sometimes proceed into acute or chronic inflammation.

One other circumstance may be referred to before entering upon the consideration of the affections in question; it is simply this, that disorders attacking the origin of nerves, or their attachment to the central mass, whether this be the brain or the spinal chord, always disturb the functions of the organs to which such nerves are destined. It may be imagined that the ramification of nerves may be affected in their passage, and thus, also, give rise to similar phenomena; no reason can be alleged that such a circumstance may not happen, but we know actually that the former does occur, and we may not neglect it in the treatment of diseases, and if by any means we could recognise the latter affections, they also would demand an equal attention. It is of the former, however, which I now

propose to treat, and the first class are those in which the functions of the heart suffer.

That mental anxiety has frequently given rise to organic disease in this viscus, is well ascertained, and the progress of such cases is generally the following. Depression of spirits, with dyspepsia, and occasional palpitation of the heart; considerable debility; great excitability; and every time that this is acted upon, it is followed by exhaustion, and more or less severe hypochondriacism. Emaciation occurs, and generally in proportion to the affection of the heart. After some time, the palpitation becomes more and continual; the action of the heart is perceptible over a larger space, sometimes on both sides of the chest; the pulse at the wrist is various, according to the nature of the cardiac affection; if the ventricles become thin and weak, the pulse is rapid, small, and feeble, undulating; if, on the other hand, active aneurism of the organ exist, the pulse is, in the earlier stages, excessively powerful, and sometimes continues so till within a few hours of death. In other cases, it resembles, for weeks before dissolution, the pulse which attends passive aneurism. Unless death occur suddenly, these affections terminate in general or local dropsy, and the patient dies completely worn out and exhausted.

In women, the catamenia become very early deranged; they are profuse or suppressed, and

in either case attended with severe and profuse leucorrhœa. The following cases appear to me illustrative of these observations. In the first, the disease was removed by early attention: in the second, it is most probable that irremediable organic alterations had taken place.

June 10, 1828.—John Carter, æt. 19, jeweller. —This man applied for assistance a fortnight ago, having previously been under a very respectable surgeon's care, who had treated him as a dyspeptic patient. He had suffered much anxiety from domestic circumstances, having married four months ago, and in order to support himself, he had worked from thirteen to fifteen hours a day, taking, at the same time, very little exercise. His appetite failed; he suffered from great flatulence and palpitation of the heart. The last symptom gradually became more and more severe, till at length he could not move without exciting it. His spirits were excessively depressed; his nights quiet. By attention to his digestive organs, his appetite improved, but without diminishing the palpitation of the heart in the slightest degree. A blister was applied to the upper part of the dorsal vertebræ, as high as the nape of the neck, the first day I saw him, which had the effect of greatly diminishing the palpitation. A week ago, another blister was applied; the palpitation has ceased. His appearance is improved, and he declares himself well.

The only essential difference from the treatment which had been previously adopted, was the application of the blister. I have heard of him repeatedly since, and he has had no return of his complaint.

The grounds upon which this treatment was instituted, were these. The disease had evidently originated from mental disturbance, acting through the nervous system, and appeared to have affected more particularly that part of it which presides over the functions of the heart. This organ is supplied with nerves partly from the par vagum, which takes its rise from the medulla oblongata, and partly from the cardiac plexus, of the sympathetic, which receives twigs from the spinal nerves. My object, therefore, was to apply counter-irritation, as near the common centre of cardiac nerves as lay in my power. Whatever may be thought of the reasoning, the success of the treatment was undoubted; nor, I think, can it be doubted, that it was one of those affections which so frequently terminate in organic disease of the heart.

The next case is still under my care, and is, I fear, irremediable, at least, further than what relief may be afforded by correcting the digestive organs.

December 31, 1828. A—— B——, æt. 19, has severe and constant palpitation of the heart, with a small, quick, fluttering, and irregular pulse.

The contraction of the ventricles is manifest over the whole chest; but I could discover no regular intervals, with the assistance of the stethoscope. The palpitation is increased after taking food, and the slightest exertion makes it much more manifest. Flatulence, costiveness; urine scanty, turbid. Catamenia regular as to the period, but dark coloured; not much, if at all, diminished since her illness. Leucorrhœa occasionally profuse. Dyspnœa, but no cough. Heaviness, with giddiness of the head and noise of the ears. *Pain in the nape of the neck, increased and particularly distressing, on the slightest agitation.* She describes it more as stiffness and irritation than violent pain. Very low spirited.

No swelling of the feet or ancles, nor of the face, though the latter is sometimes stiff in the morning. Has been ill for seven years. Her complaint began soon after distressing circumstances had much disturbed her, with leucorrhœa and bearing down pains. These were, for some time, the principal symptoms; but afterwards, palpitation of the heart came on, at first, in a slight degree, and she describes it as having beaten at this time heavily and slowly. In going a few miles from home she was shaken by the starting of the horse and gig in which she was, and from this period has remained quite incapable of doing any thing. Even writing or reading will excite the action of the heart.

February 4.—I have seen her this morning. Her dyspeptic symptoms are certainly better, and there is even an improvement in the state of the pulse. Yet she is still unable to do any thing in the shape of employment, and the palpitation is exceedingly troublesome. Some doubt may, perhaps, still attach to this case, as to how far organic disease has proceeded. It may, however, be regarded as illustrating these affections, and showing what would probably have been the progress of the former case, had it not been arrested by the treatment.

The third instance which I shall relate proves to my mind still more strongly the connection between affections of the heart and the spinal column, and the importance of considering this organ in practice.

November, 1828, I visited Mrs. Wilson, and found her labouring under the most violent palpitation of the heart I had ever seen. The bed clothes were heaved up with each contraction of the ventricle, and the pulse in the carotids was tremendous. On applying the stethoscope to the region of the heart a very loud hissing noise was distinctly heard at intervals, corresponding with the pulse at the wrist. The palpitation came on more violently at one time that at another, but had continued at the time of my visit, almost without intermission, for nearly a fortnight. She was very low spirited, and hysterical, but with-

out fever. Her bowels had been purged, and leeches had been applied to the region of the heart, but without benefit. She was again purged, and a blister applied to the spine, which rose in about eight hours, and the palpitation had diminished as soon as the irritation from the blister was perceptible. I saw her the next day, and the palpitation was almost gone. The hissing sound had quite disappeared. It returned slightly a day or two after, but has never again been so violent. Gentle aperients, with the mineral tonics, were given, and in a few days she was able to go to work. She has had many of these attacks within the last few years.

December 6, 1828.—I have seen her this morning, and she is entirely free from inordinate action of the heart. Her pulse was eighty-four and quiet. She refers her relief to the blister.

The first and the last case appear to me demonstrative of a connection between the palpitation of the heart and some affection of the spinal chord, indicating, therefore, the propriety of regarding it under such circumstances, in practice. Of the origin of the second case we have only an imperfect account; there is one symptom, however, which scarcely permits a doubt of the medulla spinalis being implicated in this instance also, viz. "the pain in the nape of the neck increased, and was particularly distressing on the slightest agitation." This we shall find a fre-

quent symptom in some of the affections which I am about to describe. Before, however, entirely leaving this point, I would mention, that in many irritable children, who were suffering from inordinate action of the heart, a blister to the spine has given great relief.

Another form in which spinal and cerebral irritation are exhibited occurs most frequently in young women. It is attended *by severe and constant pain in one or both hypochondria,* extending to the shoulder and arm of the affected side, *not always aggravated by pressure, and ceasing immediately upon or in a short time after lying down.* It is this pain of which the patients generally complain, and it frequently endures for several years. It is generally attended with much constitutional disturbance. *There is head-ache, with great heat on the external surface of the head, severe throbbing of the temples, and pain in the nape of the neck. The temper is capricious, and the spirits very variable;* and at the catamenial periods the depression, in many cases, is excessive. The tongue, after some time, is furred, and at the back part, greatly tuberculated. The stomach suffers under the various forms of dyspepsia, gastrodynia, flatulence, pyrosis, &c. the bowels are, in many instances, much distended, and there is continual clangor intestinorum. Palpitation of the heart, more or less, is present, and often dyspnœa attends. The most common disturbance, how-

ever, is in the uterine function, and I have scarcely seen an instance in which this has not occurred. Most commonly there is menorrhagia; in some few cases the catamenia are diminished, or they are completely suppressed. But whether they are increased or dimished, leucorrhœa almost invariably attends, and is generally more or less profuse, in proportion to the duration of the general disorder. When the catamenia are profuse, they are usually, in the earlier part of the period, dark coloured and grumous, and are accompanied with severe pain. The urine, for the most part, deposits a light coloured sediment, and varies much in quantity, being occasionally very copious and limpid. The bowels are constipated, and yet no great relief is obtained by purging.

If this state be suffered to proceed without remedy, emaciation and great debility ensue, till at length the individual is incapable of following any occupation. Her countenance becomes leucophlegmatic; her ancles swell at night, and without being so ill as to be considered in danger, she settles down into that morbid condition to which the term cachexia has been applied, when every organ suffers in some degree, but none predominates. When this happens, it is generally too late to afford any relief. I have had a young woman under my care for some time under the last mentioned circumstances.

She has continual pains referred to one part or another, but most frequently fixed to a spot under the left breast; she is leucophlegmatic; her ancles are at times œdematous; her breathing short and hurried; her spirits very varying, and she is subject to much head-ache and giddiness. At different times she has received relief from local depletion, and upon the whole she is better than when I first saw her; but there seems no prospect of affording her any permanent benefit.

It cannot be supposed, however, that all cases are attended by the symptoms above enumerated; in many, the local pains are alone complained of, and the other affections follow at indeterminate periods. A married woman, about thirty years of age, had suffered for more than twelve months from severe pain in the side, in the course of the descending colon. It was attended with much hysteria, and a generally nervous state. Under her former medical advisers she had been repeatedly purged and leeched, and several blisters had been applied over the affected part, without any relief. The pain had always been relieved by lying down, although she could not lie on the affected side. A blister was applied to the lower dorsal, and upper lumbar vertebræ; the next day the pain had nearly disappeared; a second blister in the same situation completely removed it. Her general health was quickly restored, after this time, by tonics, gentle aperients,

and attention to the diet and regimen. Before the application of the blister, every step she took had increased her pain.

A second class of cases are those in which the brain appears to suffer considerably, and where, though the catamenia are diminished, or almost suspended, the countenance is pale and leucophlegmatic; the pulse weak; the breath hurried; and the pain in the side varying. Cases of this kind frequently require more active treatmect, and in the first instance even admit of general depletion, though this cannot be carried far; indeed, the immediate effect of bleeding in such circumstances is often an increase of the weakness, and but a very slight relief of the other symptoms. Remedies, nevertheless, appear afterwards to be more efficient, and it has seemed to me, that patients who have suffered depletion, recovered much more quickly than those who were not bled.

A young woman, two and twenty years of age, had suffered from considerable depression of spirits for several months, when to this, *pain in the side, stiffness in the back of the neck, palpitation of the heart, and dyspnœa,* succeeded. There was some leucorrhœa; the catamenia were irregular in their occurrence, and less in quantity; the pulse was feeble; the countenance sallow and anxious. About a fortnight before she applied to me the left ancle had become painful.

and œdematous, particularly towards the evening. She had also intense head-ache. She was bled and purged, and for some days remained very feeble; the head was less painful, but was still hot on the surface, and she suffered much from tinnitus aurium; the pain in the side remained the same. Cold applications were made to the head, and a blister placed along the spine, from the nape of the neck to the middle of the back. The next day all her symptoms were relieved; she continued the cold application for a few days, whenever the scalp was warmer than usual, till the tinnitus aurium completely disappeared. After this time, aperients, with the nitro-muriatic acid, were given, and her health improved rapidly. Her appearance now, not more than two months from her being bled, is that of florid health.

The difficulty of breathing is sometimes so great as to induce great fear of organic mischief having taken place in the lungs, especially when, as indeed is generally the case, it is attended by frequent cough. The stethoscope, in these cases, is a great assistant in the diagnosis; the respiratory murmur is heard in every part of the chest, and is even puerile; indeed, this heightening of the respiratory murmur, is very characteristic of the disorder in question.

Another variety of this complaint is, where pain in the nape of the neck is complained of,

with a sense of pricking and chilliness along the spine. This is most severe at the catamenial period, which, in these cases, is very irregular, and attended with much pain and depression of spirits. Numbness of one or both upper extremities is sometimes felt, and I have even known complete, though temporary, paralysis occur, which disappeared spontaneously in a few hours.

To enumerate all the varieties of these affections would be endless; in all of them there is depression of spirits; in almost all there is pain and stiffness at the back of the neck, and the nervous sensations are peculiarly distressing. In some, in addition to the symptoms above mentioned, there are slight spasmodic twitches occurring in different parts of the body, and pointing out more decidedly the nervous origin of this disorder.

The following is the last case I shall mention of this class:—the patient has been long under my care, and I had the opportunity of watching her case, before any symptoms particularly indicating disorder of the nervous system were manifested. Her case had been treated by other medical men, as well as by myself, as simple dyspepsia. The patient was a cook, thirty years of age, and for several months the derangement of the stomach was the only evident disorder. She afterwards became very hysterical; once or twice she had a paralytic loss of power in one

arm, and frequently complained of a numbed state of the tongue, and sense of fullness in the throat, which disappeared again without medical assistance. Leeches were applied, but her complaints were aggravated. Her pulse was weak, from 80 to 90; the catamenia scanty; leucorrhœa profuse; her whole appearance leucophlegmatic. To this state frequent attacks of giddiness succeeded, with great depression of spirits, and at length an attack resembling epilepsy. The common run of alteratives, aperients, &c. were tried in vain. She was taken into the hospital, but came out without any improvement. At this period a seton was placed in her neck, and for some time her health materially improved; her stomach recovered its power, and all her uncomfortable sensations diminished. They have since re-appeared, and her state has been exceedingly variable: there seems now no prospect of a recovery. Since the cerebral symptoms have been more developed, general bleeding has given her temporary relief, but only temporary.

It will be readily seen, that the cases above referred to, are not of that kind which have been hitherto regarded as dependent upon spinal and cerebral irritation; that they are, in fact, of the nature of those diseases which Dr. M. Hall comprehends under disorder of the general health. If, however, they are accurately investigated, it can, I think, be scarcely doubted, that the ner-

vous system suffers in all these examples, primarily and seriously. The intellect is unclouded, but incapable of energetic action, the temper is exceedingly capricious, and the spirits are lowered or elevated far beyond what the circumstances which produce such effects should lead us to expect; at times, indeed, the mental affections amount almost to insanity; kindness is overlooked, or perversely misinterpreted; suspicions are entertained, the most unfounded and the most irrational; the bitterest expressions are employed, without any settled belief that those deserve them against whom they are directed; and, in short, every thing indicates that state which has most appropriately been called highly nervous. Is it possible that all these things can occur without affection of the cerebral and spinal system?

Again, there are local pains, neither exhibiting the symptoms, nor yielding to the remedies of inflammation, but ceasing upon assuming the reclined posture. Knowing, as we do, that the same circumstances occur when pain is experienced in the back from affection of the spine, is is not fair, in defect of other explanations, to refer them also to disturbance of the nervous system? Again, these pains are distant from the spinal chord, but if Sir H. Halford's hypothesis be correct, of one source at least of Neuralgia,

viz. irritation of the nerve within the skull, this will serve rather to corroborate the opinion.

Dyspnœa attends without any cognizable disease of the lungs in those deformities in which the superior part of the spine suffers; this frequently occurs—dyspnœa of the same kind often alternates with melancholy. I have a young lady under my care at the present time, in whom melancholy and spasmodic difficulty of breathing perpetually alternate; and instances of the same kind are related by very many medical authors. There is palpitation of the heart; that this may be a simple nervous affection will require no proof; it is universally acknowledged. In many instances there is a most oppressive feeling at the pit of the stomach, accompanying depression of spirits, and attended by the pain in the nape of the neck, which has been above referred to; many individuals connect their uncomfortable sensations with this pain. And lastly, when these cases endure long, they are very apt to terminate in those disorders which are more generally believed to originate from affections of the cerebral and spinal system, in chorea, in epilepsy, in sensations of numbness, and even sometimes in paralysis; the last, however, is rare; the former, the practice of every physician will probably illustrate.

In laying so much stress upon the nervous

system in these disorders, I am very far from intending to inculcate that *this alone* is affected, for doubtless digestion, circulation, and secretion, all more or less, are interested; but it has appeared to me, that in practice this system has been too much neglected, and that more direct attention would lead to more successful results. With respect to the treatment of this disorder, the general rules, so far as the materia medica is concerned, may be collected from what has been above stated; but there is one point which I have intentionally omitted, that I might direct the attention of practitioners more particularly to it; and this is, the moral management of their patients, the most important and the most necessary part of all.

It has been so much the custom to refer insane persons to one class of practitioners, and the moment that an aberration of intellect is observed, to withdraw the patient from the care of the general attendant, that neglect of this part of medicine may easily be accounted for, if not excused; yet we may question if some of the severest cases of insanity might not be prevented, if medical men were more aware of its earliest symptoms, and recognised it more than they do as a bodily disease, a disease of the nervous system.

Now as light is the appropriate stimulus of the eye, sound of the ear, odours of the nose, so mo-

ral causes appear to be the appropriate stimuli of that part of the nervous system, which is the source of the affections, the passions, and the intellect; and to guide and govern them must be an important part of the treatment of those cases in which the nervous system is affected. They are not to be regarded as the effects of fancy, nor the caprices of temper, but as diseases which are more or less under our controul.

Every practitioner must have met with those who, though subject when alone to paroxysms of distress and capriciousness, which they seem unable to conquer, or even to resist, are yet easily induced to restrain themselves while in society. Persons of this kind have usually fallen under one of two classes of practitioners; either under those who make their ailments dishonestly gainful, constantly attending, promising every thing, and attempting nothing; or those who, too proud and too honest to act in this manner, yet ignorant of the real facts of the case, treat the whole with total neglect, as an imaginary disease which it is useless to contend with, and impossible to overcome. Here, then, moral management ought to step in. The same rule should be laid down and steadily adhered to, as where the object is simply to strengthen the body. Too much exercise exhausts and destroys it; too little enfeebles it, from repletion and disease. Society to the individuals

in question is neither more nor less than a stimulus, which, within certain limits, is useful; carried beyond them is injurious, and may be even destructive. The object, then, of the medical man in such cases, is to obtain this moderation, and with the same individuals he may at different times have two different and opposite evils to contend with. At first the disinclination may be very great, because the patient fears the exertion that it requires, but when accustomed to its beneficial effects, the contrary disposition takes place. She seeks relief in the stimulus which society affords, and in the interval becomes more and more exhausted, more irritable, and more uncontrollable. The same difficulty also occurs in yielding or resisting the various inclinations in other things of these patients; to do the former in every case but increases the evil; the latter incautiously pursued engenders distrust, and an ill feeling, which attributes that to malevolence which flows indeed but from kindness.

To pursue this subject farther, would lead to a discussion inconsistent with the limits of this publication; what is meant, however, by moral management, is well understood, and the more it is taken into consideration in medical practice, the more able will physicians be to contend with many maladies which now defy their art. The influence of mental emotion in

removing tooth-ache and other pains, is a matter of daily experience; and the power which some persons have above others, of employing this influence, is the real secret of animal magnetism, and the various other arcana which charlatanism has at different times invented and profited by. Together with attention to the moral management, exercise requires to be strongly insisted upon, so much the more as patients are exceedingly unwilling to take it, and frequently, indeed, deny that they are capable of doing so. That it may be advisable to proceed gradually is indeed true, but in many of these cases the same success will attend as in that related by Sydenham, in which the patient "productis gradatim itinerum spatiis tandem non convaluerit modò, sed satis validum etiam vegetumque corporis habitum fuerit indeptus."

I may here conclude my observations upon these affections of the nervous system, which it will doubtless be perceived, comprehend those chiefly which are commonly termed hysterical. There are, however, many other affections, as it appears to me, of this system, which are scarcely yet recognised, particularly some cases of aphonia, and some cases of uterine pains, which resist all the ordinary modes of treatment, though they yield to the insertion of a seton in the upper portion of the spine. I would, however, again remark, that in this system we may probably find

the origin of many of the most severe and fatal organic maladies; and whether my ideas be true or false, it will be at least useful with this view, to remark the nervous functions more attentively. This, if the conclusions I have drawn are just, must quickly confirm them; if they are unjust, they will thus be most easily refuted, and cast into deserved neglect.

In the above paper, the occasional necessity of blood-letting has been mentioned, at the same time that it is stated, that the first effects of it are usually injurious. Additional experience has confirmed me in this opinion, and has also pointed out the superior efficacy in many instances of local over general depletion. The general rule which I have adopted in these complaints, with regard to blood-letting, and upon the whole it will, I am inclined to believe, be found correct, is to bleed, whenever, other circumstances not prohibiting it, the catamenia have been suspended for some time. In most instances in which sanguineous depletion is thus practised, relief is experienced at the instant, either from head-ache or pain in the side, or from both, according as they may be present, but in a short time afterwards, varying from one to several hours, or even a day or two, great heat of the scalp suc-

ceeds, with more or less pain and ringing of the ears; there is seldom, however, giddiness. This is the time for applying cold to the scalp, and if conducted properly, there is no remedy to which the name of specific would be more deservedly attached. The occurrence of pain and heat of the head is so common in these cases, that I now commonly mention to patients the possibility of such an occurrence, and the proper mode of proceeding when it does happen.

In some few cases it is necessary to continue aperients, and these actively; but for the most part, whenever bleeding is followed by the symptoms above-mentioned, such patients bear tonics, and even the sulphate of quinine, well. The effect of bleeding is merely to diminish the quantity of blood within the vessels, and to place them in such a state that they may be stimulated safely. It seems probable that the blood vessels are in these cases locally overloaded, and that their parietes are weakened at the same time. Now if, under such circumstances, stimulants be used, it is barely possible that the result may be successful, i. e. that the vessels may be excited to increased action, and thus remove the local plethora; but on the other hand, it is much more probable that, being unable to move the mass of blood, their efforts will gradually exhaust themselves, and that a passively dilated state of the vessels will be induced, even if they

should not burst. The mode of proceeding, therefore, is to proportion their labour to their strength, and to diminish the resistance to be overcome by diminishing the quantity of fluid to be carried forward, and at the same time try tonics and mild stimulants to endeavour to increase their power.

There are cases, however, in which blood-letting, and even aperients, would be most decidedly injurious, and where recourse must be had at once to sedatives and tonics. The two following cases, though nearly allied to those more immediately referred to, show how necessary it is to look at every case individually, and how unsuccessful a physician must be who proceeds on too generalising a principle.

November 16, 1829.—Miss L——, aged 25.—I saw her on the 1st of November, and she was in a state of extreme debility, frequent fainting, pale chlorotic face; weak, fluttering, and quick pulse. She had been suffering also for several days from severe tooth-ache.

She had been poorly for some months, but till a fortnight before, was able to walk two or three miles a-day. She seems to have been seized suddenly, and from the report to have been nearly in the same state that I found her. She had suffered much from leucorrhœa, and her catamenia were profuse. Her tongue was very slightly furred, but she was very thirsty, and

some heat of skin was manifest. Her bowels had been slightly acted upon by medicine, not violently; her urine was variable—at one time scanty and high coloured—at another profuse and as pale as water—no appetite. I gave her a scruple of Dover's powder, which procured sleep and stopped the tooth-ache; and for two days she took a mixture of sal volatile and spirits of lavender, and with considerable relief. On the 4th she began to take the sulphate of quinine. She now rapidly grew better, her appetite slightly improved, and on the 8th she was well enough to be driven a short distance in a gig. She was still unable to walk more than a few steps. I saw her on the 12th—she was still improving. It must be stated, that she fainted away for the first two days upon being raised up.

Her bowels were never opened from the 1st to the 7th, when I ventured to give her an injection; it acted slightly only. She had taken no aperient medicine, but her bowels were acting regularly when I saw her.

Nov. 28.—She has continued to improve since my last visit, and may now be regarded as perfectly convalescent.

It is to be remarked, that in this case no depletion had been practised, and that the extreme exhaustion was greatly owing to the pain from a bad tooth. The practice accordingly was adopted with this view—to assuage the pain, and

gently to excite the system. No attempt was made to operate upon the bowels, because for a very considerable time she had taken little or no food, it was therefore scarcely possible that much matter could be accumulated upon the bowels. At the same time, purgatives in the state of exhaustion in which this patient was, almost invariably have an injurious tendency. For seven days, though she continued to recover, she had no evacuation from the bowels, when an injection only was given, and though this scarcely acted, no aperient was recurred to. Her bowels gradually became regular, and she recovered.

Miss B. æt. 23, dress-maker.—I saw her on the 10th of November. She had the appearance of a person who was just recovering from some tremendous hæmorrhage. Her face was pale and pellucid. Her pulse 120 to 130—fluttering, soft. Her skin hot—her tongue clean—her bowels soft and flat; she complained of ringing in the ears and pain in the head.

She was seized suddenly at church with a fainting fit, and faints every time she is raised up. She has had a slight operation from the bowels, but has always fainted after. There has been no menorrhagia, no leucorrhœa. Her catamenia were present about a fortnight before the attack.

Her mother declares that she was perfectly well till her seizure, and that her countenance

was florid and healthy; nor does she appear to have suffered from any of the usual ailments of her trade.

The faintings, for the first day or two, were almost continual; as she recovered from one she fell into another.

She took a similar mixture with Miss L. but without much relief; neither did she seem worse. On the 12th she took a little quinine, but this made her feverish, without relieving her head; her pulse and appearance on the 14th still prohibited bleeding; her hair was now ordered to be cut off, cold water constantly applied, and the volatile mixture to be renewed. She had had an operation in the night, and fainted afterwards.

November 16.—Much relieved. The cold water has been kept almost constantly to her head. She has scarcely any pain or ringing in the ears no thirst, and her appetite is returning. Continue the mixture.

November 18.—In every respect better. Her cheeks are slightly coloured; pulse under 100; bowels costive. Convalescent.—28. I heard of her to day; she has continued to recover.

December.—Well.

In both the above cases there was evidently irregular circulation of blood in the head, though no general plethora. Indeed the character of the head-ache was precisely that which succeeds

to general hæmorrhage. The effect of the cold water was very striking in the last case, as at the same time the fainting after the operation of the bowels was a clear proof that purging may be dangerous. The curious part of both cases is, that no depletion had been practised.

In a few obstinate instances of these complaints I have inserted a seton or an issue, with marked benefit. The effect of a seton or issue is, however, in different habits very peculiar. In a young girl who, at ten years of age, had been affected with chorea, and who at the time now referred to was nineteen, the seton produced a pain which passed down into one arm; the arm became weaker and weaker, and occasionally there were even twitchings of the limb, apparently excited by the seton. The symptoms for which the seton was inserted, were head-ache, drowsiness, hysterical paroxysms, and pain in the side and stomach. She suffered also from profuse leucorrhœa and menorrhagia—the latter of which occurred every fortnight—the constitutional symptoms were relieved by the application, but the arm continued in the same state till the seton was withdrawn, when it quickly recovered.

Sometimes, again, the pain appears to extend from the issue to the affected part. This was peculiarly the case in a young lady who was subject to convulsions, and who experienced constant pain in the region of the uterus. An issue

was placed upon the sacrum, and the pain immediately darted from it to the part originally complained of; and the irritation at length became so great that the issue was obliged to be healed up. What, however, was very remarkable in this case was, that the internal pain disappeared with or soon after the healing of the issue, and now, a space of nearly two years, she has had no return.

The first of these cases is inserted here; the patient is still under my care, but convalescent. It will be noticed, however, that in both these examples, there had been symptoms which can only arise from affection of the nervous system, viz. chorea in one, and convulsions in the other.

A. W. aged 19, came under my care in the early part of 1829, for a pain in the side, from which she was relieved by a blister upon the back, and mild aperients and tonics. For some months I saw nothing of her, but in October she again applied, on account of the same pain, together with gastrodynia, which was much worse than it had ever been before; she was also very hysterical; had leucorrhœa, menorrhagia occuring every fortnight, and dyspepsia; palpitation of the heart, and frequent dyspnœa, with great unwillingness to take exercise. On examining the spine, there was considerable and distinct tenderness over the three lower cervical and three superior dorsal vertebræ. A seton was placed in her neck on the 12th of October.

This girl I had known, more or less, for eight years; she had always been what is commonly called nervous, and at ten years of age had suffered from chorea. The catamenia first appeared at thirteen years of age.

Much relief was obtained for a time from the seton; her bowels were kept open with aperients, and she took steel and infusion of calumba. Under this treatment the intervals of the catamenia became longer, and at length, though still very profuse, this occurred only once a month. On the 18th of October there were slight twitchings in the left arm, which (she observed) resembled St. Vitus's dance.

On the 29th the report is—feels much stronger than she was, and has no twitchings, less flatulence, spirits much better. Still complains of pain in the side; but there is nothing like the same tenderness about the rest of the abdomen. Bowels open—urine natural—leucorrhœa still present—takes more exercise.

She continued slowly but progressively to improve in her general health till the 30th, various medicines having been given, but all with the view of improving the condition of the stomach. On this day the report states:—A week ago was seized with violent twitchings in the left arm, which went off after getting the feet warm. Her left side, she says, is weaker, and her pain is no better; bowels costive; has taken no medicine for the last week. Still says that she is

much better than when first seen, but feels afraid she may lose the use of her arm. The seton was removed on the 12th of November, and on the 21st she is stated to have been better in every respect since the removal of the seton.

For a month from this time she suspended medicine, and though generally better, did not lose the pain in her side, and never had done so entirely since the commencement of her illness. The catamenia did not return oftener than once a month. On the first of February she returned, and said "that the pain in her side was as bad as ever."—Last night she had an attack of giddiness in the head and sickness. The cervical and first dorsal vertebræ are very tender, and pressure upon them produced a stitch in the stomach. The leucorrhœa is gone. The bowels are open.

February 4.—Was cupped in the nape of the neck on the 1st, but at present she says without any relief. About twelve ounces of blood were taken. Not so much sickness since, and has had no twitchings. Pressure on the atlas gives pain down the neck. The other vertebræ are less tender.—Sulp. quininæ ʒss.; mixt. camp. ʒviii; sumat. ʒiss. ter indies.

February 8.—Complains much of tinnitus aurium—the pain in the side has been very bad—bowels costive. Cold to be applied to the head. Continue the mixture—not being able to take pills—let her take infusion of senna every morning.

February 18.—The catamenia have flowed since she was here, and quite as profusely as before. The cold greatly relieved her—and when the catamenia flowed the symptoms of the head quite disappeared. The pain of the side better. Continue the mixture.

March 1.—The pain in the side is quite gone; she has felt scarcely any thing of it since the last report. Bowels open with senna tea. Suffers still from her head, but says that "if her head were better she should have nothing the matter."

The appearance of this girl was beautifully fair. She was tall, and in the commencement of her disease eat much while she continued to emaciate. Throughout great stress was laid upon exercise, and her habit of lying late in bed was prohibited. She is at this time in better health than she has been for several years.*

Purging is another remedy which may in some cases be had recourse to with great advantage, and sometimes it will alone suffice for the cure of the disease. It appears, however, to me to be principally indicated when the disorder has originated with the digestive organs.

It is important to remember that cases of this kind are often exceedingly obstinate, that

* March 12.—She has had a blister on the nape of the neck since the former report; her head-ache is gone, and she is, in fact, quite well.

they are much under the control of moral management, and that without constant attention (attention which it is not always easy to procure) on the part of patients themselves, they are very liable to relapse. Much, however, may be hoped for from perseverance, and the comparison ought seldom to be made between days and weeks, but often between month and month. As I have intimated in the original paper, it is too often the custom of honourable medical men to abandon such patients, to regard their complaints as merely caprice, and to leave them a valuable prey (for such they generally prove) to the unprincipled charlatan.

I cannot but hope that the few hints now thrown out may in future prevent this in some degree; at any rate they who practise their profession, not *merely* that they may accumulate wealth, but that they may accumulate it honestly, will do well to consider, that by the attention and trouble which such patients cost them, they will save their profession from that degradation into which, from the fraudulent and empirical arts that are practised by too many of its members, it is daily sinking. In a lecture lately delivered by Mr. Brodie, he stated, that in early life he had always ceased to attend a patient when he had no hopes of benefiting him, but that later and longer experience had induced him to change his practice; he could often relieve

those whom he could not cure, and always prevent them becoming the patients of men, who from ignorance or from dishonesty might do them mischief. There are no class of patients to whom the continued attention of upright practitioners is more really an act of charity than those whose complaints I have been considering—for there are none whom distressed and irritable feelings render more disposed to confide in any who will administer without hesitation to their caprices and prejudices—who will seek simply to pass away the present hour, unmindful of the injury they may be inflicting for the rest of a long life, for unfortunately, though life may be rendered miserable by these complaints, it is not necessarily nor materially shortened. The cook whom I have mentioned in the paper is still living, and has now for four or five years been the subject of this wretched disorder.

Several years have elapsed since I first stated in my reports of the diseases of Birmingham, that I believed there was some connection between apopletic or paralytic attacks and rheumatism. I was led to this conclusion from having observed that several persons who had suffered rheumatic pains of the arms and legs were afterwards attacked by apoplexy or paralysis, though excepting these pains, there was nothing particularly to attract attention to the state of the head. The following case, which

came under my care a short time ago, corroborates the correctness of this opinion, and at the same time it shews that there is not necessarily* any external tenderness along the spine in these neuralgic pains.

December 25, 1829,—Mr. S. aged thirty-five.—He has been suffering from rheumatic pains in the loins and right leg for several months, with a feeling of numbness in the right calf. He did not complain till asked, either of drowsiness or giddiness, but upon enquiry, stated that he had slight giddiness upon stooping down. For some days he was actively purged, but without any amendment of the pains, and he complained of feeling faint after the purging; the pulse was of moderate strength, and seventy-six in the minute. Three grains of sulphate of quinine were prescribed to be taken three times a day, and this he continued for a week, but still without any improvement in his complaint. Twelve ounces of blood were now taken by cupping from the nape of the neck, and his convalescence was almost immediate. His head became clear; his drowsiness and giddiness left him, and his

* Pain is not, indeed, necessarily, in any of these cases, external, nor can it be well expected to exist till the membranes and ligaments become interested in the disease. The medullary structure may be disordered long before this occurs. Where tape worm occurs, which it often does in these complaints, the external pain is rarely felt.

rheumatism. A slight numbness alone remained in the calf of the leg, and this also disappeared in a few days. He continued the quinine after he was cupped, with mild aperients as before.

Other cases have occurred to me besides, both before and since, and the same treatment has been successful with them when colchicum and all the other remedies of rheumatism had been useless.

Aphonia is also mentioned as sometimes dependent upon a disordered state of the spinal chord, or at least of irritation of that part of the medulla oblongata from which the eighth pair take their rise. The following cases I give without pronouncing any decided opinion upon their value as illustrating this opinion, yet when I remember all the circumstances of the first, I can hardly help referring the aphonia to the cause now mentioned. I copy it from an abstract of the case which I made some time ago. The whole case would be very tedious, nor would it be more useful.

Miss S. had long been subject to a peculiar affection of the spinal medulla. Five years ago, when I saw her for the first time, she was quite lame, and went upon crutches; there was tenderness of the lumbar vertebræ, and she had been cupped, blistered, had an issue, &c. all without the slightest benefit. Medicine seemed to have no effect upon her.

She suffered at times also from pain in the side and stomach, was very low spirited, and hysterical. The catamenia were scanty and dark coloured, and have remained so ever since. She had all the common symptoms of dyspepsia.

For the pain of the loins acupuncturation was practised with singular advantage. Wherever the needles were inserted, from that place the pain vanished. Following thus the situation of the pain, the needles were inserted seventeen or eighteen times, and at length one crutch was thrown away, and then the other. She has now been able to walk for four years—having for the two preceding years constantly used crutches. The pain in the side and stomach after this became distressing, and the moxa was applied to the spine several times, each time with relief of the pain, and it has never returned so severely and continuously since, though for short periods she is still subject to attacks.

During this time she had frequent attacks of hoarseness, which have come on and gone off without any very manifest cause. Some time since it was so bad as almost to constitute complete aphonia. It had continued for a week without the slightest amendment, when she was ordered to be cupped. In three quarters of an hour after the cupping her voice returned, and has not again been lost.

The next case is not so remarkable, but still it bears on the subject.

December 25, 1829.—Mrs. W. æt. 22.—Has been long hoarse, and at times quite lost her voice, and hysterical. She is very plethoric and heavy; has had severe pains in the side and stomach, with various anomalous local pains; has suffered much from local pains. The aphonia had endured for a considerable time, and she had been bled from the arm; had aperients, tonics, &c. At length she was cupped from the nape of the neck; her voice returned almost immediately. Three days afterwards, when I saw her, it was complete.

Mastodynia, or pain of the breast, is another form in which occasionally irritation of the spinal chord is shown. It was not, however, till the publication of Mr. Teale's book that this peculiar form of neuralgia had struck me; but I have within these few weeks met with a case fully corroborating his statement. It occurred in a woman twenty-seven years of age. She had suffered from severe pain in the breast for fourteen months, and had during this time undergone various treatment. Leeches had been applied to the breast itself, but only with very partial and temporary benefit. On examining the spine, the three superior dorsal vertebræ were very tender, and I ordered her to be cupped over them. The pain in the breast was relieved

during the cupping, and a few days after had completely ceased. I saw her again a fortnight after the cupping, and she had had no return of the pain. She stated that she had not been so comfortable for fourteen months.

It would not be right to conclude these observations without noticing a clinical lecture of Mr. Brodie on "certain local nervous affections," in which he states the curious sympathies that sometimes exist between distant parts unconnected by any immediate nervous fibre. The following are the most curious:—

"Where nerves have a common origin, it is easy to suppose that an impression made upon one nerve should be communicated to those parts which are supplied by the other. But an impression made on one part of the body will often produce a nervous affection elsewhere, at a distance from the original seat of the disease, and where no such obvious explanation of the fact presents itself. A disease in the liver produces a pain in the right shoulder; a disease in the heart produces a pain in the back.

"A gentleman awoke in the middle of the night, labouring under a severe pain in one foot; at the same time that some other sensations, to which he was not unaccustomed, indicated the existence of an unusual quantity of acid in the stomach. To relieve the latter he swallowed a large dose of an alkaline medicine. Immedi-

ately on the acid in the stomach having been thus neutralized, the pain in the foot left him.

"The late Dr. Wollaston was accustomed to relate the following history. He ate some ice-cream after dinner, which his stomach seemed to be incapable of digesting. Some time afterwards, when he had left the dinner-table to go to the drawing-room, he found himself lame from a violent pain in one ankle. Suddenly he became sick; the ice-cream was rejected from the stomach; and this was followed by an instantaneous relief of the pain in the foot.

"A gentleman consulted me concerning a pain in one instep. The pain was severe, causing lameness, so that he walked with difficulty; but there was neither swelling, nor, except the pain, any mark of inflammation. I prescribed some remedies, which, however, were of no avail. One morning he called on me, still suffering from the pain in the foot, and so lame that he could not get out of his carriage and walk into the house without the assistance of his servant. Now, however, he complained of another symptom: he had a difficulty of making water, and a purulent discharge from the urethra. He had laboured under a stricture of the urethra for many years, and had occasionally used bougies. Of late the stricture had caused more inconvenience than usual; but he had abstained from mentioning it, thinking that it would be better that he should

(if possible) be relieved of the pain in the foot before any treatment was adopted on account of the stricture. Under these circumstances I introduced a bougie, which penetrated the stricture and entered the bladder. Immediately on the bougie having been used, the pain in the foot abated; and in less than a quarter of an hour he left the house free from pain, and walking without the slightest difficulty. This happened some years ago, but I have seen the patient at intervals ever since; and from a most careful observation of his case, he and I are both satisfied that the pain in the foot is connected with the disease in the urethra, and we have never found any thing to relieve it except the introduction of the bougie.

"A lady consulted me concerning a pain to which she had been for some time subject, beginning in the left ankle, and extending along the instep towards the little toe, and also into the sole of the foot. The pain was described as being very severe. It was unattended by swelling or redness of the skin, but the foot was tender. She laboured also under internal piles, which protruded externally when she was at the water-closet, at the same time that she lost from them sometimes a large and sometimes a smaller quantity of blood. On a more particular inquiry, I learned that she was free from pain in the foot in the morning; that the pain attacked her as

soon as the first evacuation of the bowels had occasioned a protrusion of the piles; that it was especially induced by an evacuation of hard fæces; and that if she passed a day without any evacuation at all the pain in the foot never troubled her. Having taken all these facts into consideration, I prescribed for her the daily use of a lavement of cold water; that she should take Ward's paste *(confectio piperis composita)* three times daily, and some lenitive electuary at bed-time. After having persevered in this plan for the space of six weeks, she called on me again. The piles had now ceased to bleed, and in other respects gave her scarcely any inconvenience. The pain in the foot had entirely left her. She observed that, in proportion as the symptoms produced by the piles had abated, the pain in the foot had abated also."

Mr. Brodie considers that the communication in these cases takes place through the intervention of the brain, and is "thence reflected to the nerves of the part which is secondarily affected." If this speculation be assented to—and I do not at present see what can oppose it—it will be an additional reason for looking, in many cases, though not in all, to the origin of these nerves in the central mass, for the seat of the disease. For if, even when the original source is in a part totally unconnected with that in which the pain is felt, the sensation must first be carried to

the brain, and thence communicated to " the nerves of the part secondarily affected," it will be even more probable that a distant part may suffer from affection of the brain itself or the spinal medulla.

The following case, which is almost demonstrative that this may happen, has been communicated to me by Messrs. Knowles and Elkington, in whose practice it occurred. A boy about nine years of age complained of pain in the thigh, which extended at first over the right thigh, then suddenly left that and seized the left, and produced great lameness. It was treated for a time by common remedies, and the lameness diminished; but in about two months the boy was brought back as bad as before. In a few days after this, inflammation of the brain succeeded, and the child died. Upon examination, the brain was found to be inflamed, and there was extensive effusion, both in the ventricles under the arachnoid membrane and in the vertebral canal. Pain, resembling rheumatism, is indeed a very frequent precursor of water in the brain in children.

The origin of some of the diseases above-mentioned is very obscure, but there can be no doubt that exhaustion from some cause or other is one of the most frequent sources, and in enquiring into their history, and determining upon their treatment, this is a most essential point to be

remembered. A lady, who applied to me ten days ago, had suffered four times from miscarriage within fourteen months, and for the last four months had menstruated most profusely every two or three weeks; there was excessive pain in the right side, greatly increased by pressure, much dyspnœa, frequent hysterical paroxysms, and what is also to be noticed as peculiar to these cases, she became very ill towards night. Upon examining the spine, the whole of the cervical vertebræ were tender, and pressure on the fifth and sixth produced difficulty of breathing. In a case like this, depletion was clearly out of the question, even though the pain should be supposed to be of an inflammatory nature. A blister, however, was placed on the nape of the neck, and quinine was given with mild aperients. Her bowels were generally open. The dyspnœa was completely relieved by the blister; the first night she had no sleep from its irritation, but the following night she slept very soundly, and what for many months had been very unusual with her, after sleeping soundly, awoke refreshed, and without head-ache. She is still under treatment, but going on well.

With regard to the appearances on dissection, I have already stated, that we have seldom an opportunity of examining the spinal chord while in the state which gives rise to local pains and hysterical affections, but never-

theless opportunities do sometimes occur, in which we may see this structure, after paralysis has succeeded such affections, and which disease appears to be merely a sequel of the former complaints. A case of this kind is given in a late number of the Medico Chirurgical Review, in which the patient, having suffered from rheumatic pain for some time afterwards, lost the whole use of his limbs, and upon examination after death, a considerable portion of the spinal medulla was discovered to be softened.

A case of disease of the spinal chord is also noticed in a chemical lecture by Dr. Alison, in which, in addition to paralysis of the lower extremities, &c. there was "dyspnœa and a chilling sensation produced, as in fact the patient himself correctly imagined by the accumulation of viscid matter in the air cells and passages."

On dissection "the spinous process of the third dorsal vertebræ was loose, and the body of that bone, and the heads of the ribs, were carious, and overspread with fœtid pus; the body of the vertebræ was loosened by ulceration from its connections; the dura mater on the posterior side was covered with lymph, and the corresponding part of the chord was redder than natural, free from any deposition of adventitious matter or infiltration of pus, but in that state of softening denominated by the French "ramollissement rouge." * * * The lower part of the

left lung was condensed, and the bronchiæ considerably enlarged. Dr. Alison's remarks are important:—"The affections of the lungs, and the state of the respiration during life, afforded a subject of considerable interest; there was no doubt but that the ordinary causes which induce pulmonary disease, might have operated here; but the morbid changes so strongly resemble those produced by the section of the eighth pair of nerves, that he was inclined to believe that the irritation of the roots of the dorsel nerves corresponding with and below the diseased portion of the spinal chord, which inoculate freely with the sympathetic, might have had a considerable influence on the inflammation, which occurred in the bronchial lining, and was thence perhaps propagated to the parenchymatous structure."—*Lancet, Feb.* 6, 1830.

The few remarks which have now been made upon spinal and cerebral irritation, I wish only to be taken as applying to some cases of hysteria and local pains, but by no means as exclusively applicable to every case. I am particularly anxious that what is stated in the commencement of the paper should be kept in mind, viz. that the animal functions operate in a circle, that the obstruction may begin in any part, may thence be communicated to the rest, and these may injuri-

ously re-act upon the original portion. With this in our mind, we shall direct our treatment to the original source of a disorder, only not forgetting that the secondary may be sometimes more serious and require more immediate attention than the primary disease.

INDEX.

ERRATA.

Page 20, line 26, for "heart" read "head."
20, .. 27, for "found" read "formed."
53, .. 6, for "gangrenorum" read "gangrenosum."
171, .. 1, for "cough" read "croup."
213, .. 5, for "try" read "by."

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