cumscribed and persistent, point to the site of such operation, whether it consists in simple division of the pericranium, or trepanning the skull. In these cases of the remote effects of injury, the presence of matter, bony spicula, diseased or necrosed bone with meningeal reparation, nay, sometimes even a slight thickening of membrane may give origin to symptoms which will usually be found to correspond in intensity to the amount of local change. In recent cases of fractured skull I believe the rule of not operating where there are no symptoms, to be a good one. A departure from this practice is certainly justifiable in the case of wound with fracture and depressed bone. Be the symptoms what they may, displaced and exposed fragments should be elevated if not removed. If left, they tend to provoke inflammation, which usually commences after the lapse of a few days and terminates in a destructive change with effusion on the surface of the dura mater. If removed at once, the patient being rid of such a grave cause of irritation before the parts are spoiled by disease, or rendered unfit to sustain a process of healthy repair, the system at large responds to the full extent of its powers, as yet unimpaired by medicine, and not debilitated by prolonged illness. The reverse of this is the result of waiting until signs of irritation arise. If inflammation of the brain or its membranes be not stopped at the outset, its fatal termination is seldom prevented. An irritation, on the contrary, need never be despaired of; whilst there is life there is hope. In either case the other organs of the body sympathise widely, and with variable effects, upon the constitution. The nervous power may be excited, depressed, or altered in its action, without immediate risk to the life of the individual, but the circulation, to maintain life, must be at once restored to its original freedom.

Chronic apoplectic lesion, though a purely local change, depreciates the quality of the nervous influence, but does not directly interrupt its course and operation; it is the crisis of a slow morbid action, of which the other organs of the body have all had warning, and for which they are in some degree prepared. This is not the case where the system has been taken by surprise by sudden lesion of a healthy structure. Laceration of the substance of the brain produced by injury is always fatal. In the first case, the powers of life having themselves undergone a previous diminution, are no longer capable of being very suddenly impressed by the occurrence of a minute lesion which, though critical, is but another stage or step in the progress of existing disease. Apoplectic cell therefore, unless it be large and rapidly formed, does not alarm the centres like a sudden tearing of the sound tissue. There is no immediate counter-action excited for purposes of limitation or repair; but the case is otherwise after recent injury. There the resistance and reaction commence at once and vehemently, though ineffectually, for the heart and arteries now no longer respond to the necessities of an organ, which under the circumstances they are unable to restore. As the connections of the brain are universal, it may be approached circuitously, as

well as by the direct road, and sometimes with more advantage where there exists a tendency to relapse. Symptoms can never be too closely watched, nor power too carefully estimated, in dealing with a part so prone to rapid and dangerous reaction.

44, Dover Street, Piccadilly,
November 9, 1849.

REMARKS, HISTORICAL AND PRACTICAL,

ON DISEASES OF INFANTS.*

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We have seen that towards the close of the last century, the subject of infantile diseases was beginning to engage the attention of eminent medical practitioners, and that considerable progress had been made in the knowledge of that department of medicine. But in the present century, both the interest in the study of the diseases of children, and the knowledge of their character and treatment, have increased in a ten-fold degree. Indeed, so many excellent works on the subject have made their appearance within the last 30 years, that it is difficult either to particularize them, or to point out their comparative merits and claims to the attention of practical men. It would be a needless waste of time to attempt to analyse the contents of each of these works, or even to point out the peculiar views of each writer. In our own country, besides the various editions of Underwood which have continued to emanate from the press, the works of Coley, Clarke, Joy, Copland, Davis, Bennett, Evanson and Maunsell, Willshire, West, &c.; and of Capuron, Billard, Gölis, Legendre, Guersent, Rilliet and Barthez, on the Continent, have contributed largely and satisfactorily to our stock of information upon the various subjects of which they treat. Dr. Bennett's treatise "On Hydrocephalus" ought to be read by all who desire to understand the nature of that unmanageable disease; and the work recently published by West, "On the Diseases of Children in General," well deserves an attentive perusal; but, for minuteness of description and profundity of research, the works of Billard, Rilliet and Barthez, have no parallel in this country. Billard's work was published in 1828, and has since gone through several editions. It is devoted entirely to the consideration of the diseases of new-born and nursing infants, and describes the development of the spinal marrow and brain, before entering upon the nature of the affections of the encephalon. The necessity of considering together the science of organization and the clinical observation of diseases, especially where the nervous centres are concerned, is a point in the pathology of new-born children which is frequently neglected or forgotten, notwithstanding the affections of early infancy must necessarily be greatly modified by the progressive

development of the brain. Billard describes the various changes which take place from early pregnancy to the birth of an infant, shewing that, from birth to the age of one year, the brain of a child is in a true state of transition, and adds, "we frequently see during the first periods of life, great alteration in the organs, unaccompanied by any febrile reaction, any general symptom, or any morbid sympathy; but at the end of the first year, everything assumes a new aspect; fever, which is scarcely ever seen in new-born children, here makes its appearance on the slightest cause; hence the restlessness, cries, spasms, nervous mobility, so common, so easily excited, and at the same time, so transient, in children who have passed the period of infancy. These considerations will prove to us the difficulty of studying the diseases of early infancy; the cause is evidently in the organic imperfection of the encephalon, which cannot reveal to us the signs and external symptoms of these diseases."

In taking a general view of what has been written on cerebral diseases, we shall be struck, not so much with a deficiency of knowledge as to their character, pathology, or symptoms, as with the indefinite and unsatisfactory methods of treating them. This defect is probably due to the excessive desire manifested to base principles of treatment upon *post-mortem* appearances; but, whilst the latter, although fully known and accurately described, vary so much in relation to the symptoms they are supposed to occasion, how can the former be depended upon for safely averting the great dangers we have to encounter? There is yet much—very much, to be learned in the treatment of these diseases. In what manner can such knowledge be most readily and perfectly obtained? The investigations hitherto made upon this subject, enable us to determine certain generalizations, and to state a few established facts, which afford useful hints for practical application.

1. Cerebral diseases occur most frequently in children of a scrofulous habit, or born of scrofulous parents.

2. Scrofula greatly modifies the character of cerebral as well as other diseases.

3. Cerebral diseases may exist independently of scrofula.

4. Headache, vomiting, constipation, and more or less pyrexia, are a combination of symptoms denoting, in children, serious, and often unmanageable cerebral disease.

5. A species of hydrocephalus, chiefly indicated by the preceding symptoms, is generally accompanied with, or depends upon, tubercular disease of the brain or its membranes.

6. There exists another species of hydrocephalus, attended with the usual symptoms of phrenitis, of a strictly inflammatory nature, and curable by strictly antiphlogistic remedies.

7. Hydrocephalus resulting from tubercular disease may assume an active inflammatory type, and be scarcely distinguishable from the last variety, except from its not being so amenable to antiphlogistic treatment.

8. Symptoms similar in many respects to those of acute hydrocephalus in one or other of the above forms,

may arise from a state of system diametrically opposed to inflammation; these are curable only by a nourishing and mildly-stimulating plan of treatment.

9. Hydrocephalus, generally speaking, does not occur before the age of two years; and boys are more liable to it than girls.

10. Treatment, to be effectual, must be commenced at an early period of the disease.

11. The symptoms of cerebral diseases in children, and the *post-mortem* appearances, have not a definite or constant relation to each other; and the former are more to be depended upon than the latter for indications of treatment.

12. Constipation is not essential to the phrenitic variety of hydrocephalus.

13. Certain cases, accompanied with symptoms so constantly in connexion with tubercular encephalitis as not to be distinguishable from the latter form of disease, admit of being cured; and may therefore be fairly considered as instances of the *curability* of a disease which is generally supposed to be incurable. (See cases by Professor Golfin, *Revue Medico-Chirurgicale*, Vol. ii. Also in *Medical Gazette*, Vol. xxx., p. 811; Vol. xxxv., p. 703; Vol. xxvii., p. 323 and 671; Vol. xxxi., p. 23.) These, and many other similar cases that might be quoted, prove the disease to be, sometimes at least, curable; and the contrary opinion cannot but exercise a very prejudicial influence upon the prognosis and treatment. If we believe a disease to be incurable, we are apt to relax in our efforts to subdue it; and shall thus probably remain in comparative ignorance of what, after all, is the most important subject for investigation, namely, the best method of treatment.

The treatment of diseases of children requires considerable tact and discrimination, both as to the nature of the remedies to be used, and the mode of employing them. We have tender bodies to deal with; their period of life greatly modifies the action of medicines; errors of judgment in prescribing are of more serious consequence, and life is altogether in greater jeopardy. It is often necessary to reduce arterial action, and *blood-letting* is sometimes attended with success, but in very young children this is a dangerous remedy, and probably not a few have fallen a sacrifice to its depressing influence. The usual method of drawing blood in children is to apply leeches, and children have bled to death from leech-bites. Cupping is an operation not easy to perform in children, but it is preferable to leeching, because by it the quantity of blood to be abstracted can be regulated, and the bleeding can be stopped as soon as enough blood has been removed. Blood-letting, as a remedy, is fortunately seldom indispensable at the period of life in which children are most frequently affected by cerebral diseases; my own experience would almost say *never*; for in a period of more than fifteen years I have never myself drawn blood, either locally or generally (save by scarification of the gums or eyelids,) from a child under six years of age, for any complaint whatever. How then are inflammatory complaints to be treated? What are we

to do in a case of phrenitic hydrocephalus, if we are not to bleed? Are we possessed of any other effectual means of combatting inflammation? Yes: we have many other resources for lessening vascular action in children, which will oftentimes enable us to spare a fluid so necessary to existence, and so often wanted in later periods of diseases, when it is difficult, if not impossible, to supply it. The *warm bath* is a powerful agent for relieving the circulation in infancy; *antimonial medicines* will reduce power to almost any necessary amount in children; *purgatives* also; but owing to the extreme susceptibility of the intestines of children to take on irritation with which the brain very quickly sympathises, it is not often advisable to use them freely; we may, however, safely employ enemata, which have the effect of reducing the pulse and lessening heat of skin in a very satisfactory manner, as well as of removing offending matter, and encouraging a flow of bile. But there is another class of medicines both safe and effectual for abating inflammatory affections in children, provided the stomach be not too irritable to retain them. I mean *diuretics*; and I have repeatedly observed, whether in fevers or inflammations, that promoting a copious flow of urine has, in a striking manner, produced an antiphlogistic effect. These measures may be employed also in combination, and when they are thus combined and judiciously applied, I have yet to learn that they are not capable of effecting as much for the removal of febrile action, with scarcely the possibility of doing harm, as is usually effected by blood-letting. In the more advanced stages of inflammation, *calomel* for the removal of lymph, and *iodine* (Liq. Potassii Iodidi Comp.) for the absorption of effused fluid, are well known and trustworthy remedies.

But the history of the cerebral diseases of infancy proves that in some cases these measures even might be attended with fatal prostration, although the general symptoms differ scarcely at all from those which accompany acute inflammatory diseases of the encephalon, requiring strict antiphlogistic regimen; for instance, in certain cases of hydropcephaloid disease commencing with febrile disturbance. Under such circumstances how are we to determine whether to depress or to support, when to lessen power and when to stimulate? In doubtful cases, an error in judgment, so likely to occur, may irretrievably turn the scale; and we ought to give the patient the benefit of the doubt, rather than run the risk of removing all chance of recovery by too great activity of treatment. It is perfectly wonderful how, in circumstances the most desperate, nature will display her restorative powers, when they are not interrupted, but only carefully assisted, by treatment.

In endeavouring to make out correct indications of treatment, a minute attention to symptoms will avail us as much as a reference to the supposed pathological condition of the organ in which the disease is situated, in very many instances of cerebral disease. It is generally acknowledged that *scrofula* almost always coincides with disease of the brain in children, and that it always modifies the character of inflammation wherever

located; when, therefore, we have distinct evidence of *scrofula*, let our treatment of the inflammation be modified according to this constitutional defect, and let us beware of excessive or prolonged reduction of vital power.

The occurrence of *pyrexia*, in the diseases of children, is an important guide to treatment. If a child have slight difficulty of breathing and hoarseness, and there be no fever, we attach but little importance to these symptoms, and they may generally be removed by simple remedies; but when fever is present also, they indicate, probably, the approach of a severe malady. A child may experience sickness, and pain in the body, of doubtful import, but if these symptoms be unaccompanied with febrile action, and the pulse remain quiet, we shall consider them without alarm, and confidently expect to remove them. So also in head affections, unattended with fever, we ought not to resort hastily and actively to depletory measures, however much we may be inclined to suspect the existence of certain pathological conditions supposed to require antiphlogistic treatment. But there may be febrile excitement in a case where antiphlogistic treatment would be fatal. How are we then to judge? If the fever be of an intermitting character, leaving the patient feeble and depressed in the intervals, the pulse being unsteady and variable, it behoves us to be guarded in our employment of lowering remedial measures.

There can be no question that the proper mode of attacking a disease, of whatever nature it may be, consists in first ascertaining as nearly as possible its intimate character, its natural course and termination, and what are the lesions with which it is usually connected, and afterwards to adopt our remedies accordingly. But these are not the only considerations required; we are not to mark out at once a determinate object or indication, to be fulfilled by particular means, and to adhere to one undeviating method of procedure, without reference to the changes or modifications which may occur in the progress of the case;—we are not to steer straight for a destined port, regardless of the storms or winds we may encounter in our voyage which may render deviations from our appointed course not only desirable, but necessary to ensure our safety. The indications of treatment in acute hydrocephalus are to remove inflammatory action, and to promote the absorption of the products of that action; but if we discover signs of debility coexisting or alternating with febrile symptoms,—if we notice a weak, feeble, irregular pulse, or what is a far better guide in infancy than the pulse, *coldness of the cheeks*, with a tendency to coldness of the extremities,—however severe other symptoms apparently connected with increased action may remain, we cannot persevere in the employment of antiphlogistic or depressing measures without incurring the risk of being suddenly called upon to administer cordials and nourishment to sustain the feeble or expiring powers; and this, in many instances, when too late to prevent a fatal issue.

The following circumstances seem especially deserving of attentive consideration in the treatment of the diseases of infancy and childhood:—

1. The delicate, perhaps only partially-developed, structure of the vital organs, the intolerance for the most part, of powerful medicines or doses, and the great restorative powers of nature at an early period of existence.

2. The necessity for adapting our remedial agents to the delicacy and susceptibility of the structures they are intended to influence, and fulfilling any given indication of treatment by the least possible violence or precipitancy, by the gentlest means.

3. Whilst entertaining a just idea of the nature and history of the disease we have to treat, we must at the same time observe particular symptoms minutely, and vary our plan of treatment according to the information which those symptoms are capable of affording.

4. The importance of endeavouring *to the very last* to preserve life, however desperate the circumstances may appear, keeping always in remembrance, that "whilst there is life, there is hope."

ON THE TREATMENT OF CHOLERA BY QUININE AND IRON.

BY WILLIAM STRANGE, M.D., Bridgnorth.

To C. W. Bell, M.D., Manchester.

MY DEAR SIR,—I should not have addressed you thus publicly on the subject of cholera, had I not felt that the principles so ably advocated in your published lectures on the subject were in some danger of being overlaid, by your exposition of the character of the late visitation, as given in your letter to Dr. Hall, of Exeter, and published in the last number of this *Journal*.

Although I have had some experience of the epidemic in its recent manifestation, I have waited patiently, expecting, from week to week, to see some confirmation of your views, and some successful results of the treatment recommended in your lectures, make their appearance in the pages of our *Journal*; for I could not but believe, after my own experience, that as many had, doubtless, read those lectures, so many must also have put into practice the treatment there laid down. However, whatever may be the result of the experience of others, I, for one, cannot *now* refrain from testifying to the great value of which the theory propounded by you has proved at the bed-side, not only in my own case, but in those of several of my friends also.

In common, I doubt not, with most other provincial practitioners, no sooner did the rumour reach me that the cholera had begun to make progress through our land, than I set about to make myself acquainted with the published experience of others as to the character and treatment of the disease, as it had before shown itself amongst us. Many, I have no doubt, will bear me out when I say, that no candid enquirer could feel satisfied with the confused and discordant theories, and

the equally heterogeneous indications of treatment resulting therefrom. To my mind no *pathology* of the disease, worthy of being so called, existed; at least, I met with none.

In the midst of all this doubt and fear the disease made its sudden appearance amongst us; and all of us, I fear, at the onset, commenced the treatment with more weapons than we could wield with advantage to our patients, or credit to ourselves. Astringents, opiates, calomel, (in large doses and in small, in combination with everything or anything, or in all its single nakedness,) emetics, purgatives, stimulants, sedatives, tonics, alteratives, heat and cold, were, many of them, simultaneously, and all of them consecutively, had recourse to. After treating a few cases in this way, but chiefly with repeated doses of calomel, with external heat to the surface of the body, and observing the unsuccessful results, I had my attention again directed to the theory of the disease as propounded in your "Lectures." Having carefully perused it, I felt persuaded, from what I had now myself seen, that no other theory of the disease with which I was acquainted could nearly so well account for all the symptoms, and that, consequently, no other treatment was so likely to prove successful as that by quinine and iron; and I cannot easily express what a comforting and invigorating effect was produced upon my mind by the feeling that, *now*, whether right or wrong, I had at last a clear and logical idea of the disease in my mind, to guide my hand at the bed-side of the patient.

The result of this change of treatment, as it was to my mind too important to be slurred over in a few general observations, so—to be of any service to my professional brethren—does it require some statement in detail. I may premise that, between the 24th of July and the 22nd of September, when the first and last fatal cases occurred, there were in all about 180 cases of developed cholera treated in this town, sixty-nine of which proved fatal, besides six or seven fatal cases of diarrhoea or dysentery. No epidemic diarrhoea existed to any amount previous to the appearance of genuine cholera, nor did the cases of the former and the latter become at all confounded together afterwards; notwithstanding, there were at least 1000 cases of derangement of the digestive and circulatory organs treated during the prevalence of the epidemic, and one-half of the adult population was more or less indisposed. The symptoms of this minor complaint, which I have called the *choleraic malaise*, were, in almost all cases, undoubtedly those of deranged capillary circulation; many no doubt exhibited hepatic symptoms, but this was by no means the rule. There was a pinched and shrivelled appearance of the face and skin, a small pulse, chilliness of the surface, with pinching pains in the muscles of the limbs and abdomen. After a day or two these feelings were followed by loss of appetite, perhaps vomiting and some purging, or else obstinate constipation, weariness, with mental lassitude, and depression of spirits. These symptoms, if unattended to, in some instances undoubtedly passed into cholera, which was then nothing more than an exaggerated state of all the