An essay on infantile remittent fever, with especial reference to its diagnosis from hydrocephalus : for which a prize of thirty guineas was awarded by the South London Medical Society, October 1849 / by Charles Taylor, M.R.C.S.

Journal, with the Author's respects

An Essay

ON

INFANTILE REMITTENT FEVER,

WITH ESPECIAL REFERENCE TO ITS

DIAGNOSIS FROM HYDROCEPHALUS:

FOR WHICH A PRIZE OF THIRTY GUINEAS WAS AWARDED BY THE SOUTH LONDON MEDICAL SOCIETY, OCTOBER 1849.

BY

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In the following essay it has been my endeavour in the first place to give a succinct account of what is known on the subject, and have therefore quoted freely from the published works of the most esteemed authors; and, in the next, have recorded my own opinions, founded on a careful study of those authors, and the results of personal experience and observation.

I had originally appended a table of upwards of one hundred cases of fever in children, derived chiefly from dispensary practice, but have thought it unnecessary to introduce it here. I would merely remark that it served to show the different forms or varieties in which fever may appear in children, some having at the time been termed "simple fever," some, "fever with worms," some, "gastric," some, "acute," others, "chronic remittent fever," others, in which the term "gastric" was superadded to either the word "acute" or "chronic." Some of the chronic cases were noted as ocurring after scarlatina, measles, or small-pox, and it also exemplified the concurrence of fever of different forms in the child, with ordinary continued fever in the adult. The deficiency of illustrative cases I am fully sensible of; it arises from the circumstance that cases of infantile remittent fever are in their commencement regarded as of little danger; and therefore, in short private notes, more particularly in a tabular form, daily symptoms are not recorded, but merely the occurrence of "typhoid," "cerebral," or "chest" symptoms, noted, without particularizing those symptoms. Many other deficiencies also exist in this essay on so extensive a subject, embracing as it does that of fever in general in children; and, indeed, to have approached in any way to a complete treatise would require more extended observation and lengthened investigation than at the time I was able to bestow: the truth of the remark quoted by Sydenham, "multum adhuc restat operæ" is self-evident, but I trust future researches will clear up the differences of opinion on the subject, and tend to reconcile them.

Among the various disorders incidental to children, those of the pyrexial form most frequently come under our notice. They may be divided into—

1st. "The exanthemata;" which, although not peculiar to infancy and childhood, are, nevertheless, more liable to occur in early life.

2d. Those which are termed "inflammatory," and are accompanied by more or less fever in one or other part of their course.

3d. In addition to the foregoing there is still another class, in which "fever" is essentially "the disease," and not merely a symptom indicative of other and more tangible lesion.

In the early age of our art, it appears that many authors were aware of the existence of an affection in children, characterised by fever, to which various appellations were given.

The following are mentioned by Dr. Butter* as having described it:—Musgrave, Mercurialis, as "febris synochus puerorum;" Timoens, "febris ardens continua infantum;" Lieutaud, "la fièvre ardente des enfans," "la fièvre lente des enfans;" Sauvages, "hectica infantilis;" Hoffman, "febris lenta infantum," and others, not omitting Sydenham, who has described a chronic form as occurring in children. "Est et symptoma aliud, infantibus permolestum, longe diversum, et a febribus variarum annorum constitutionum, et ab illâ proximâ memoratâ. Est vero hecticæ species, infantes *diu* affligens, quâ infestati ***sine insigni aliquo calore*** languent, cum appetitûs dejectione, et tam artus, quam corporis truncus ubique emaciantur."†

The majority attempted to account for this occurrence of fever in children, by the presence of worms, and hence we find described a "worm fever," by

* Butter's Treatise on Infantile Remittent Fever.

† Sydenham, Opera. Sydenham Society edition, p. 505.

Baglivi and Van der Bosch. Sauvages and Hoffman were of this opinion. But as medical science advanced, and facts were more carefully inquired into, it was found that the presence or absence of worms did not alter the character of the disease; and Sir J. Pringle, and Sarcome, remarked that their presence required scarcely any modification in the treatment; while Bianchini in Italy, and De Haen in Germany, pointed out how exaggerated was the influence attributed to them. Prof. Sinclair, of Edinburgh, proved that worms were not always discovered in the so-called "worm fever."* Dr William Hunter declared he had searched for them in vain in the bodies of those who were said to have died of such disorders. Musgrave also proved that those affections were less attributable to worms than to the presence of saburræ in the primæ viæ; and Dr. Clarke, of Newcastle, remarks, in his work on Fever, on the impropriety of the term "worm fever," and that anthelmintics will rarely, if ever, cure it.

Such were the opinions of medical men, when, in 1772, the work of Dr. Butter on "Infantile Remittent Fever" appeared, since which time the disease has been written on, or referred to, by many authors on diseases of children; Dr. Butter's description being the chief authority and guide.

Dr. Pemberton,† in his work on diseases of the abdominal viscera, follows Dr. Butter's description; and Dr. Sims‡ has given an account of an epidemic infantile remittent fever which occurred simultaneously with low nervous fever, of a remittent character, in adults. Dr. Cheyne§ has also given us some good practical remarks on it, especially in reference to its connection with hydrocephalus. Since then, Dr. Milman Coley‖ has written a separate treatise on the subject: it has also been described, or alluded to, by Drs. Mason Good,¶ Mackintosh,** Sir H. Marsh,†† Underwood‡‡ and his commentators; Marshall Hall, Merriman, and H. Davies; Joy,* Maunsell,† and Evanson; Copland,‡ Hughes,§ Golding Bird,‖ Locock,¶ West,** and Willshire;†† while, on the Continent, Rilliett and Barthez,‡‡ and others, have added to our information on the subject.

Whether the disease termed "infantile remittent fever" is referable to the second or third of my divisions, appears to be an undecided question, for, as will be shown, the opinions of authors vary on this point; some considering it an affection symptomatic of irritation and inflammation of the digestive tube, whilst others consider it an idiopathic fever, and identical with continued fever in the adult. At the risk of being thought tedious, I will quote some of these opinions.

As before remarked, in former times the presence of worms in the intestinal canal was considered the chief, if not the only, cause.

Dr. Butter considered it owing "to a weak state of the digestive organs, morbid accumulation in the primæ viæ, and the peculiar irritability and proneness to fever in infancy."

Pemberton also describes it as depending on intestinal irritation.

Joy considers it merely a variety of gastric fever modified by the irritable constitution of infancy, and, in confirmation of his views, draws attention to the symptoms.

Richter considered every fever of a remittent character as more or less gastric; and Selle recognised no other form of remittent fever than gastric and hectic.

Dr. Sims, in his account of an epidemic, says "it attacked those who had derangement of the intestines for a length of time, as picking of the nose, grinding of the teeth," &c.

Dr. Locock terms it, "infantile *gastric* remittent fever," and considers the causes are those which indirectly or directly affect the digestive organs; and remarks that "there is a striking con-

* Cyclopœdia of Practical Medicine, vol. 1. Art. Remittent Fever, Joy.
† Pemberton's Practical Treatise on Diseases of Abdominal Viscera.
‡ J. Sims, Observations on Epidemic Disorders. London. 8vo. P. 163.
§ Cheyne's Monograph on Hydrocephalus.
‖ Coley's Treatise on Remittent Fevers of Infants.
¶ Dr. Mason Good's Study of Medicine.
** Mackintosh's Practice of Physic.
†† Dublin Hospital Reports, vol. iii.
‡‡ On Diseases of Children, various editions.

* Cyclopædia of Practical Medicine, vol. i.
† On Diseases of Children.
‡ Dictionary of Practical Medicine, part iii.
§ Guy's Hospital Reports, old series.
‖ Ibid. new series.
¶ Library of Practical Medicine, art. Infantile Gastric Remittent Fever.
** Lectures in Med. Gaz. vi., vii., xxxvii.; and Diseases of Children.
†† Lectures in Med. Times, 1848.
‡‡ Traité Pratique des Maladies des Enfans, tom. iii. p. 350, et sequent.

firmation of the doctrines of Broussais, as to the nature of fever, in the acknowledged cause of this disease . . the most prominent symptoms being referred to the mucous lining of the stomach and intestines; and a protracted or acute form of fever is the result."*

Maunsell and Evanson say—" In classing the infantile remittent fever among disorders of the digestive organs, we declare sufficiently our opinion of its origin and nature. . . . Its characteristic symptoms, if closely analysed, will be found, all of them, to point to the mucous surface as the original seat of morbid action."

Sir H. Marsh says, " the seat is in the villous coat of the intestines."

Mackintosh is of opinion that " it depends on irritation, inflammation, or ulceration of the mucous membrane of the stomach and bowels."

Dr. Coley seems to be of the opinion that it *may* be a symptomatic fever, as he says " it is one of the most frequent terminations of chronic dysentery." " It is frequently the sequel of measles, scarlatina, and other diseases where there has been inflammation of the intestinal mucous membrane." But he considers " the most unfavourable form is from malaria and the effluvia of persons labouring under typhus fever."

Dr. Golding Bird considers there are *two* distinct diseases described under this name, one depending almost entirely on derangement of the functions of the gastro-intestinal tube, the other on more or less of malarious influence, this latter constituting the " true infantile remittent fever;" but that the two frequently coexist.

Rilliett and Barthez, who have investigated the disease as it occurred in the " Hôpital des Enfans," in Paris, and whose observations are founded on 111 cases, regard remittent fever as identical with typhoid fever in the adult, and as intimately connected with inflammation of the intestines.

Drs. Copland and Willshire affirm " that the digestive disorder itself proceeds from an anterior disorder, which itself proceeds from causes impairing the energy of the nervous system, and of the organs by which this system is more immediately influenced." The latter says, " the same deleterious influences which cause continued fever in the adult will cause remittent fever in children;" while the former, after allowing that improper food and neglect of the bowels have their full share in producing it, says " it arises most frequently from the same causes as produce other periodic fevers, namely, terrestrial exhalations or miasmata; and that less intense or concentrated states of these exhalations than are required to produce either agues or remittents in adults will often cause the latter in children."

Dr. C. West, our most recent author on the subject, follows the opinion of Rilliet and Barthez, and considers it identical with continued fever in the adult. " If," says he, " we look closely to the characters of this disease, and compare them with those of simple continued fever in the adult, there is so close a correspondence as to remove all causes of doubt as to their identity." And he draws a comparison between them in the circumstances of their occurrence, their local complications, and their post-mortem appearances.

Dr. Bateman, in his Reports of the Diseases of London, acknowledges and points out the connection of infantile remittent fever with continued and typhoid fever, and also the different forms or types under which it sometimes appears; for we find in one place his cases are registered under one name, in another place under another name; for instance, they are registered more generally as " Febris infantum;" but in 1803, winter quarter, and in 1811, summer quarter, it is " Febris infantilis remittens;" in 1811, autumn quarter, the cases are termed " Continued fever of a remittent character." It is evident they all refer to the same class of cases. He also alludes to a " slight fever," of short duration, among young people, removed in three or four days; but in a few it continued for three or four weeks, and in one or two instances, without putting on a typhoid appearance, it spread to two, three, or more members of the same family.

Four cases are described by him as " typhus, and occurring in young chil-

* Since this essay was written, Dr. Churchill's work on the Diseases of Children has appeared. He terms the disease " infantile remittent fever," " worm fever," " gastric fever" (p. 637), thereby showing his opinion; and at p. 648 he is inclined to the opinion that it is a " gastro-enterite," although he afterwards, " in the milder cases, thinks the gastric symptoms as a complication, rather than as being essential to the disease."

dren, similar to this slight fever at their commencement."*

In addition to the foregoing opinions, we find that several cases of remittent fever are related as arising from the presence of a foreign body in the intestinal canal. Evanson relates a case produced from a child swallowing a marble; Mackintosh another case, from a mass of undigested food; and Dr. Cotton reports a case † where a severe attack of remittent fever occurred, which immediately subsided on the expulsion of a foreign body. These cases would accord with the opinion of those who consider the disease to consist in irritation and inflammation of the digestive tube; as, doubtless, the presence of a foreign body would set up such irritation.

The experience of Dr. Tweedie, however, seems to be at variance with those who consider the two diseases (infantile remittent fever and continued fever in the adult) identical; for of 676 cases of fever in the Fever Hospital, only eighteen were under ten years of age; and he says, "as a general rule, children, and particularly infants, are exempt from the causes of idiopathic fever, the febrile ailments to which they are subject being almost always symptomatic of some local disturbance, as dentition and disorder of the bowels."‡

From the preceding somewhat conflicting opinions, it is evident that the several authors have each described a form of febrile disease, as it *especially* has come under their notice; for instance, one (Dr. Locock) has met with the disease chiefly among the children of the more affluent, who are less exposed to the influence of malaria, but, perhaps, more to indulgence in the quantity and quality of food; and hence describes it as mostly occurring at Christmas time, almost always depending on over-feeding, and other direct exciting causes of irritation of the mucous membrane, and "*never* proceeding from the state of the atmosphere, and *never contagious*;" while Butter, who first described it, and the results of his experience from an epidemic in Derbyshire, says "the acute form is epidemic and also contagious." West and Willshire describe it as seen at the Infirmary for Children, in the neighbourhood of which epidemic and endemic causes are rife, and draw a conclusion that it is identical with continued fever.

Hence, and from our own experience, we conclude that fevers, as they occur in children, hitherto classed under the one head of "Infantile Remittent Fever," arise from a diversity of causes, and include several forms of disease; that in all febrile affections in children there is universally a tendency to assume the periodic form; that the remission or periodicity is greater, or more marked, in proportion to their youth; that the remission is more distinct when the disease can be fairly traced to malaria; but that, when it has arisen from direct irritating causes applied to the gastro-intestinal mucous membrane, the remissions are more irregular, and occur in a slight degree several times a day; that in all forms of fever in children, but more especially at certain times, and in certain localities, there is a tendency to gastro-intestinal irritation and inflammation; that this irritation is secondary to the fever when of miasmatic origin, and not, as Broussais taught, as actually giving rise to or constituting the disease itself, but rather as a complication; that when it has arisen from direct irritating causes, it is primary, and the disease is to be considered as idiopathic irritation or inflammation of the intestinal mucous membrane, and not as an idiopathic fever; and, lastly, that true malarial fever is often complicated with, or follows after, gastro-intestinal irritation arising from other causes.

Causes.—Certain hygrometric and thermometric conditions of the atmosphere, as damp and cold, warm and moist weather, and the occurrence of easterly winds, perhaps predispose to an attack of fever;* insufficiency of, or bad food; exposure to the weather; change of residence from a country to a town district; residence in badly ventilated or damp localities, or in situations where malaria is constant; the occurrence of continued fever as an epidemic,– may all be considered either as predisposing or exciting causes of fever in children.

* Rep on Dis. of London, p. 75.
† Med. Gaz., June 1848.
‡ Art. "Fever," Cyc. Pract. Med.

* It would be a useful subject of inquiry, from the weekly meteorological observations, to determine the connexion of fever with the state of the weather, in reference to the degree of heat, moisture, electricity, and the prevalence of certain winds: this would, however, have required more time and observation than could be given in the present essay.

According to Dr. Locock, a single large meal of indigestible food may give rise to an acute form of fever; but this, together with the continuance of a long and protracted habit of improper feeding, are rather causes of the true gastric variety.

A form of fever frequently occurs after scarlatina, measles, and other diseases of childhood,—probably from the functions of the skin being interfered with, and the mucous membrane of the intestinal canal being irritated; it is generally of a sub-acute or chronic character, and to be looked upon as an irritative fever; but it is frequently combined with true idiopathic malarial disease.

In one or other of its forms, fever is a disease so universal among children, that sex, constitution, or habit of body, seem to render none averse to it. The gastric and irritative forms occur probably more frequently in strumous children.

Period of life.—The period of life during which this disease occurs may be from the first to the tenth year,—according to Dr. Coley, from the sixth month. Dr. Locock considers it most frequent from the age of two to six years; "that it is not met with in earliest infancy, and many have denied its existence during the period of lactation." On the other hand, Dr. Armstrong,* in 1796, and again in 1808, described a disease during dentition in many respects similar to a gastric remittent fever, "with exacerbations every evening, and muddy stools," which at the public dispensary carried of many young children.

According to Rilliet and Barthez, typhoid (remittent) fever occurs most frequently from nine to fourteen years of age; is less frequent from five to eight, and very unusual in the earlier years of childhood.

Although the greater number of cases may occur from the second or third year to the tenth, yet there are many children under the first year of age, brought up by hand, the subjects of a form of gastric irritation, accompanied by fever, which becomes worse at particular periods, and yet does not amount to enteritis or dysentery, but may be considered as a gastric form of this disorder. So, also, of the malarial form: as the age of the child increases, the disease gradually loses its paroxysmal nature, and those characters which are peculiar to children, and assumes the form of continued fever in the adult.

Dr. West has informed me that he has met with genuine ague under one year of age; and in the report for the year 1847, both remittent and typhus fever are shown to have frequently occurred under that age at the Infirmary for Children.

The annual reports of the Registrar-General also show the occurrence, as well as the fatality, of typhus during the first years of life.

Time of occurrence.—The autumn, and next the spring, is the most frequent time of occurrence of the malarial form of this disease: in fact, when continued fever is prevalent among adults, although, even during the winter months, it is not unfrequent, especially when atmospheric changes are prevalent, and the weather is warm and damp for the time of year.

Locality.—With regard to locality, my practice being chiefly confined to the south of the Thames, I have found it occur mostly in densely populated districts, where stagnant water, in the form of open ditches and drains, was present. This remark applies, however, to the more clearly marked remittent forms, and will include the majority of cases of the acute and typhoid kinds: but where the disease is of a more pure gastric character, and of chronic type, it will be then found not so much to occur at any particular time of year, or under any peculiar condition of atmosphere or situation, as from purely accidental circumstances.

Forms.—In practice we find the cases of infinite variety as to their form, mode of attack, and duration: they may be mild, and lasting but for a few days; acute in form, and short in duration; acute, verging into chronic, or chronic from the commencement; they may assume a typhoid character; they may vary in the degree of gastric disorder; and, lastly, the peculiar assemblage of symptoms, or at least many of them, may exist without the essential accompaniment of fever. True, it is often difficult and an arbitrary distinction to place a case under one or other form until we have seen the course and termination of such case; but few will deny that there are acute, chronic, typhoid, mild, and severe forms of this

* Dis. of Children.

disease. It has been divided into "acute, slow, and low," by Butter; "acute, chronic, and adynamic," by Copland; "acute and chronic," by Locock and Willshire. Of the "acute" form Dr. Willshire says there are *many varieties:* of the "chronic" he makes two subdivisions—the simple and typhoid. Dr. West makes two classes of cases—namely, those of a milder and those of a severer form.

I have adopted a subdivision into—

1st. The mild or simple form.
2d. The acute form.
3d. The chronic form.
4th. The typhoid form.
5th. Apyrexial or malarial disease.

1st. The *simple* or *mild form* is very frequently met with, and occurs sometimes sporadically, but more often as an epidemic. Upon a change of season from cold and bracing to damp and mild weather, we find many children attacked with this mild form of the disease. We are requested to see the little patient, and learn that there has been, most probably, some indisposition for a few days; that he has not his usual spirits; his appearance is that of not being quite well, but yet not of severe ailment; the countenance is somewhat dull and heavy; the appetite is precarious, perhaps gone; he is restless or fidgetty, averse to, or even dislikes, his usual amusements; often picking his nose and lips, wishing to be in bed, and then not satisfied: if seen in the morning, his skin *may* be hot—frequently not so: towards evening, however, he becomes feverish; his cheeks flushed; his pulse, which in the day was almost natural in frequency and character, now becomes quickened, varying from 100 to 120, and, if delirium is present, rising even to 140 in the minute, and somewhat sharp and incompressible. At this time, if he sleeps, it is disturbed and restless, and even in the mildest form there is rambling and incoherent talking. This paroxysm of fever lasts but for a few hours, passing off gradually; and towards morning the child falls into a more quiet and composed sleep,—sometimes a slight perspiration breaks out, and, as the day advances, the patient appears merely indisposed, being in the same condition as the day before. The tongue is more or less furred (in this form I have seen it very slightly so); the papillæ are generally elongated, projecting through the fur, and injected: in proportion as there is gastric disturbance, so do we find the greater or less degree of fur on the tongue. The feverish condition returns as the day declines, and so on for a few days; and in the course of a week, or rather more, we find our little patient convalescing, but frequently much debilitated. The paroxysm of fever is not always of equal severity each evening, and gradually lessens in duration and intensity on approaching convalescence. The bowels occasionally, at the commencement, are confined, but in this mild form are seldom much out of order. This mild form may, and often does, become chronic. During the winter of 1848 numerous cases of this form occurred,—some, indeed, of greater severity; and at that time it was both epidemic and endemic. A medical friend informed me he had many cases which were decidedly remittent, but disposed to lose the remissions, and assume the continued type.

It would be easy to illustrate this mild form of fever by numerous cases; but I will only select the following:—

Simple Remittent Fever.

Case I.—Master J. C., æt. 4, November 1848. Arrived from India a few months back; now residing in an open situation, but low and damp; is robust and fresh coloured when in health; has been ailing the last few days. Tongue coated with a thick white fur; breath very offensive; bowels confined; motions whitish; has frontal headache; towards evening of each day an attack of fever comes on, which leaves him as morning approaches: pulse 100; sleep disturbed, and there was slight delirium one or two nights. The treatment consisted in Pulv. Rhæi c. Hydr. c. Cretâ, as a purgative, and a mixture of Julep. Ammon. Acetatis with Spirits of Nitre, and afterwards the Soda Mixture; and he was convalescent in about ten days.

Simple Remittent Fever, with Gastric Irritation.

Case II.—C. C., æt. 6, sister of Case I., arrived in England at the same time as her brother: pale and delicate, with a dark areola around the eyes: has been ill four or five days; tongue covered with a creamy white fur; breath offensive; pulse quick; hands cold at present (5 P.M.): towards night she be-

comes feverish, which state lasts for some few hours, and in the morning she is quite free from fever; appetite bad; no desire for food; thirsty; bowels have been confined, but has had some senna tea: slight cough.—Pulv. Sodæ comp., gr. vj., horâ somni; Liquor. Ammon. Acet. c. Spir. Nitri et Vin Ipecac. ter die.

7th.—Tongue rather cleaner at apex: its appearance is peculiar; the base nearly to the apex being covered with a dirty white fur; the tip and edges for about half an inch have the papillæ rather prominent and red; bowels open once, scanty, rather clayey in their appearance; urine scanty, slight difficulty in passing, voided twice a day, and in a short time after cooling deposits a sediment; pulse 120; in the morning the hands and body are cold; about five in the afternoon, and continuing about five or six hours last evening, there was a well-marked attack of fever; the flesh is soft and flabby at other times.

14th.—The gastric symptoms gone; tongue clean; merely slight cough left; bowels regular; motions and urine normal; countenance clearer.

16th.—Pronounced convalescent.

Both these children had suffered from remittent fever when in Bombay; the boy's attack differed from his sisters, his being characterised by the existence of more headache, to which he had a tendency, and hers, by more gastric irritation.

Simple Remittent Fever coexistent with Continued Fever in the Adult.

Case III.—Jessie D, æt. 3, April 1849. Residing in an unhealthy locality; wet and damp weather; an elder brother had croup a week back. She became suddenly ill, having been attacked with rigor, followed by fever. Scarlatina being in the neighbourhood, I expected it would prove such, but the following morning the child was better, and there was no appearance of any eruption. From her mother's account, she becomes feverish towards night, which state continues for some hours, and she is better again in the morning. One night there was wandering in the sleep. Her tongue was loaded with fur; the papillæ prominent towards the apex; in the course of a week she was convalescent. Within a few days after, I was called to see this child's grandmother, living four doors off, with an attack of continued fever.

Cases IV., V.—T. M'K., æt. 4, and her sister, æt. 2, residing near Case III., about the same time were ailing with a sharp attack of fever, after shivering, and some eruptive disease was expected, but none, however, appeared. They both had slight cough, but not enough to designate the disease bronchitis; and, there being no local affection, I felt I must place them under fever, and, moreover, as they got worse towards night, this fever was of a remittent character.

These two cases required strong purgatives; as calomel and jalap.

Remittent Fever of a more Acute Character.

Case VI.—John A., æt. 5, living in a cottage, having only a ground floor, and, the mother being a laundress, the place is very damp, and, until recently, a foul uncovered drain close by.

Dec. 11, 1849.—Has been ailing for a few days; is feverish throughout the day, which becomes worse at night. During the day there are three or four evident accessions and remissions of fever, but no entire freedom from it. This evening, after a paroxysm of fever, which lasted two hours, he was in a profuse sweat, with headache, and much restlessness and delirium during sleep. Urine has passed twice during the last twenty-four hours; scanty, and deposits a white sediment. Tongue furred and white; pulse 100.—℞ Pulv. Rhæi c. Hyd. c Cretâ, gr. v., h. s. s.; and the Soda Mixture.

13th.—Last night passed very restlessly, with delirium; bowels open once freely, but he complains of pain in the course of the colon. At 3 P.M. there was an accession of fever, from which he had been free during the morning. In the course of a few days he was convalescent.

Case VII.—His brother, æt. 7, was the subject of an attack a week before; he also had pain at the umbilicus, and slight vomiting; his tongue was rather peculiar, having a clear patch, where the fur and epithelium were peeled off in the centre. This boy was feeble, and far from well for some time after.

2d. *The acute form.*—This is the form, I believe, more generally described by authors; it may arise suddenly after a large and improper meal, according to Dr. Locock, and may then be regarded as a symptomatic or irritative fever; or it may occur after a continuance of im-

proper diet; but it is more often traceable to malaria, and occurs at a time when the mild form is prevalent, or continued fever is present among adults.

The onset of this form varies; at times commencing as in the simple form, and gradually developing itself into greater severity; at other times it sets in with all the characters of an acute affection, as headache, great disturbance of the sensorium, vomiting: if old enough, the child complains of his head, that he is not well. There are often general pains of the body and limbs; the countenance, when the onset is acute, is often flushed; otherwise it is dull, and of a peculiar stupid aspect. There is often a dark areola around the eyes, which are also dull. The tongue is loaded with thick, whitish, and occasionally yellowish fur, even to the apex: the papillæ are elongated, and often highly injected. When the fur does not extend as far as the apex, it and the sides of the tongue are injected; and frequently the tongue has a peculiar *strawberry* appearance; sometimes, however, it is more brownish, and rather dry. The breath is very foul, and of a peculiar odour; the appetite irregular and capricious, and at times the child will not take anything. I have, however, occasionally, in sharp attacks of fever, known the child eat heartily of bread and butter during the remission. There is also frequently much irritability of the stomach, attended by nausea; so that, if food is taken, it is quickly rejected. At times there is pain at the epigastrium, which lasts for a few days: this latter symptom I have usually found concomitant with the nausea, and a tumid condition of the abdomen. The bowels may, perhaps, have been irregular, and we now find them varying in their condition, but, as a rule, abnormal; they may be relaxed or costive, constipation being more frequent at the commencement of the illness; while diarrhœa, and a tendency to dysentery, are more frequent in the latter stages of the disease. When confined, the stools are usually of a clayish or earthy appearance, deficient in bile, or of a mixed nature, some portion clayey, and others of a more yellow hue, and sometimes they are almost black and scybalous. When relaxed, they are of a pale clayey appearance, and occasionally frothy, and under either aspect they are of a very offensive nature. The urine partakes in the disturbance of the secretions generally, being scanty, and of a whitish or milky appearance, and, after standing, depositing lithates. This appearance of urine has been strongly insisted on by many authors as pathognomonic of the disease; but, as Dr. Willshire remarks, there is "nothing peculiar to the urine or stools of remittent fever." I have frequently observed it, even in the mildest cases, but should not lay any stress upon it, nor consider it in any way as a diagnostic mark. Having examined the urine of several cases, I have in all found it acid, not coagulable, and of sp. gr. about 1·018: the deposit is that of lithates, and depends on the impairment of the digestive functions, as we so often find it occur in severe cases of dyspepsia. The temperature of the body is increased throughout the day, and becomes still greater as the evening exacerbation approaches:* it has been found by Dr. West as high as 105° Fah.; and I have occasionally, from the great heat of skin, fancied pneumonia was present. The cheeks, hands, and abdomen are generally the hottest parts, and occasionally the scalp is found very hot.

Towards evening most of the symptoms become increased, the fever by degrees becomes more intense, and the irritability greater. In the majority of cases the increase of fever is not preceded by any rigor, or even any slight degree of shivering. In some few cases, however, a distinct rigor is observed; the pulse becomes quicker and fuller, varying from 140 to 160; the cheeks flushed. There is often great thirst; the tongue becomes dry and parched. There is more or less disturbance of the sensorium, as evinced by wildness of manner. The child is disposed to sleep, being drowsy: the sleep, however, is much disturbed, and delirium and rambling are mostly present; the respiration is hurried, and a short hacking cough is frequent. This state continues some hours, when the fever abates; in some few instances partial and profuse sweats break out, the sleep becomes more quiet, and towards morning all the symptoms decline; and during the day the child

* In the Med. Times, March 1850, it is mentioned that M. Roger has found the heat greater in typhoid (remittent) fever in children than in any other disease, not excepting pneumonia, and this when the circulation is not much accelerated.

appears better, although far from well, being in much the same state as before described. The acute form, if arising from overfeeding, and treated *accordingly*, Dr. Locock says, may not continue beyond a single day; more frequently, and always, I believe, when arising from malarial influence, it continues from ten days to a fortnight, or even three weeks; the symptoms, day by day, vary but little, and there is the same evening increase of fever, followed by a remission more or less complete next morning. When under proper treatment, and free from complications, all other things being favourable, after about ten days or a fortnight the symptoms begin to abate, and in a few days more, signs of returning convalescence are evident; but at this time, or even earlier, the disease may assume a typhoid character.

Paroxysms.—Most usually there is but one well-marked paroxysm during the twenty-four hours, which comes on in the evening, lasting from one or two to four or five hours, and is then followed by the remission; but occasionally the fever assumes a continued type, or the remissions are imperfect.

Drs. Butter and Coley allude to three remissions: the latter says—"there is one exacerbation in the forenoon, one in the afternoon, and one at night, the last being the most severe." Dr. West says—"in some instances two distinct exacerbations and remissions are observed in the twenty-four hours, but mostly only one is remarked." In a large number of cases observed by me during the years 1848-9, the evening exacerbation has been distinct; but it has been doubtful as to the occurrence of any well-marked paroxysm during the day, although, in some few cases, there has been a slight accession of fever without an increase in the other symptoms. In the chronic form there is a greater tendency to an alternate increase and decrease of fever and other symptoms.

Picking.—There is one symptom to which I have not alluded in describing this form of disease—namely, a constant picking of the skin. Frequently from the commencement, but more generally after the disease has continued for a few days, the child picks its face, angles of mouth, nose, and even eyelids, also its fingers, so that troublesome ulcerations ensue, which often heal with difficulty. This picking is by some considered one of the most important and conclusive signs of the genuine disease: it is, however, more significant of gastro-intestinal disturbance. Dr. Locock alludes to two cases where it was a prominent symptom, and yet there was no gastric disturbance, but empyema supervening on hooping-cough, complicated with pneumonia; and inquires "if it is not rather a symptom belonging to the hectic of children, whether produced by pulmonic, intestinal, or organic complaint." Although this peculiar picking of the skin cannot be considered as diagnostic of any peculiar form of fever in children, and although occasionally absent, yet in most cases, on careful inquiry, we shall find there is more or less of it. I have more especially met with it in some of the typhoid and the more severe chronic cases, with bowel complication, and have seen several cases—one lately in Guy's Hospital—where the child, from picking its fingers, caused large ulcerations on three or four of them.

Case VIII.—E. B., male, æt. 3, came under my care at the South London Dispensary, December 1843, having suffered from chronic fever with much diarrhœa; his convalescence being very protracted, recovery not taking place until four months had elapsed. He had an ulcer on his finger, from the continued picking, which was very troublesome, the bone becoming exposed, and a dead portion afterwards exfoliated.

Bowels.—The condition of the bowels has been considered by some authors almost pathognomonic of remittent fever. Dr. Locock says:—"The condition of the bowels is one of the most uniform characteristics of this disease; sometimes there is diarrhœa; more commonly, however, constipation; but, in either case, the evacuations are highly offensive, the fœtor resembling putrid meat: they are dark, pitchy or clay-coloured, with little or no admixture of bile, or the biliary secretions appear vitiated and unmixed with the general mass." Drs. Butter and Pemberton also lay great stress on the same. The latter, speaking of Dr. Butter's low form, says:—"The intestines seem paralysed: they exert no action on the food; for it passes off like a mass of putrid animal and vegetable matter,

without the least appearance or smell of fæces where the digestive powers have been exerted." Dr. Joy, who follows Dr. Butter's description, says:—"The stools are always unnatural, either in colour, consistence, or smell, paler or darker, frothing or fermenting."

In the simple and mild forms there is nothing characteristic in the evacuations, but, as before mentioned, they vary. In the gastric and chronic cases there is certainly an unhealthy condition of the excretions from the bowels different from other diseases which we might confound with this. In all cases the evacuations should be closely watched—"inspect the evacuations, instead of attending to the nurse:" as much may be learned from them, as to colour, consistence, and odour, in reference to the treatment of the case.

Worms.—Worms are occasionally present, but certainly not in the majority of cases: the small thread-worm is most frequent—the ascaris lumbricoides more seldom: they are not indicated by any certain diagnostic symptoms, and we can only be sure of their existence by ocular demonstration.

Convalescence.—The signs of returning convalescence consist in the paroxysms of fever becoming less severe and of shorter duration, the bowels more regular in action, and the evacuations more natural, the countenance becoming clearer; the tongue gradually cleans from the tip towards the base, the papillæ are less injected, the skin assumes a healthier condition, the appetite returns and is occasionally craving, sleep is more refreshing, and, in fact, all the functions are more regularly performed. The following cases serve to illustrate this form of disease:—

Case IX.—*Acute Remittent Fever, with Thread-worms, and Diarrhœa.*

Mrs. K.'s child, æt. 3½, female, January 10, 1849, is a fine healthy child; has been ill about ten days. At first she had some strong cathartic powders, she and the other children in the family having thread-worms. She is flushed, and the skin very hot; the fever becomes increased towards night, and again slightly in the forenoon; sickness, pain at the epigastrium, and no appetite; is listless, and indisposed to move or play about; very fretful, constantly picking her nose and fingers; the bowels are now much relaxed, being open seven or eight times in the 24 hours; motions offensive, brownish. Tongue covered with white fur. Pulse 130. She is very sleepy and drowsy, but her sleep is disturbed, and there is delirium at night.—℞ Sodæ Sesquicarb. gr. v.; Syrup. Papav. ℥v.; Vin. Ipecac. ℥v.; Ex Aqua, ℥ss.; ter die sumenda.

13th.—Tongue getting gradually cleaner. Pulse 120. Last evening there was a severe accession of fever. Bowels moved twice yesterday; motions offensive; has pain in abdomen on the right side.—Rep. Mistur. ℞ Hydr. c. Creta, gr. j.; P. Ipecac. Co. gr. iss. M. o. n. sumenda.

15th.—Bowels regular; motions more healthy. Tongue cleaner; less restlessness and delirium at night.—℞ Quiniæ Disulph. gr. ss. ter die sumenda.

20th.—Convalescent.

This case evidently arose from malaria; and at the time other children in the same street were suffering from acute attacks of fever.

Case X.—*Acute Remittent Fever.*

M. A. H., æt. 6, female, November 1849. Situation open; weather damp and mild. A delicate child; mother phthisical; has been ailing about a week, and on several occasions noticed to have a decided shivering, and complaining of feeling cold, followed by heat of skin. Her symptoms were those of fever, apparently idiopathic; tongue covered with a dark brown fur; breath very offensive; bowels rather costive, but easily acted on; motions abnormal, occasionally dark and offensive, at other times pale and clayey; urine high-coloured and scanty; countenance heavy, dull, and sallow; very fretful; there is great heat of skin, but no decided regular remissions of fever, although at times she is freer from fever than at others. The disease lasted about eight days before the symptoms began to abate, during which the treatment was Jul. Amm. Acetat. c. Spt. Nitri, and afterwards the soda mixture, and the bowels regulated by Pulv. Rhei c. Hydr. c. Cretâ. She had very sleepless nights before the disease gave way, for which Hydr. c. Cretâ gr. j., P. Ipec. Co. gr. iss. operated like a charm, producing refreshing sleep. The pulse was quick throughout.

The case was one of simple fever, of an acute character, but of short duration, partaking of the continued type, attended with great gastric irritation, but not complicated with any other affection. As convalescence began, there was some picking of the nose and face. For a week she would take literally nothing.

Case XI.—This is a good illustration of the acute form of "true remittent fever," arising from malaria, abridged from Dr. Bird's paper in Guy's Hospital Reports, vol iii. new series.

Acute Remittent Fever, with Erythema.
(Case I. of Dr. Bird).

A male, æt. 7, residing in Bermondsey: ill one week before admission with headache, followed by rigor and fever, becoming worse in the evening, and delirious; severe exacerbations every evening.

Dec. 22d.—On admission the fever had remitted; the skin was tolerably cool; expression desponding; eyes dull and heavy; pulse quick; manner peevish; no diarrhœa; motions dark and offensive; tongue red at apex and edges; elongated papillæ projecting beyond a white fur.

24th.—In three days the exacerbations were severe, and the remissions complete: constant frontal headache; nausea; pupils active. Duration of illness sixteen days.

Treatment consisted in—Hyd. c. Cretâ, gr. v. et postea Ol. Ricini, ʒij.; Julep Menth. c. Soda; and after the remissions were complete, Quinæ Disulph. gr. ii. quartis horis. Arrow root and mutton broth.

3d. *The chronic form.*—Under unfavourable circumstances, whether as to the constitution of the child, or the locality of its residence, the chronic form may supervene on the acute, or, what is more frequent, the disease is chronic from the commencement, and succeeding on what has been described as the mild and comparatively trivial form. Here the previous derangement of the general health has most likely continued for some time before the attention of the parents has been drawn to it, and, if noticed, it has been thought of no importance, and that the child would soon be better, until the lapse of time shows that, instead of improving, he becomes daily more peevish, fretful, and loses flesh.

It not unfrequently happens that the child having been poorly for a few days or a week, becomes better for a short time, and this state is again succeeded by a return of the general derangement.

The symptoms, though less defined than in the acute form, are yet sufficiently characteristic. The face is less flushed, but has more of the sallow dirty aspect, and the dark areola around the eyes is more marked; the skin is but slightly increased in temperature, and, during the remission, is often cool and flabby; the paroxysm of fever is less marked, and imperfect, and is often absent, or apparently so, for a day or two, and then again appears. The hands and cheeks are frequently the only parts where an increase of heat is noticed. In this form worms are not unfrequently present, together with a greater degree of gastric and intestinal irritation, and it often assumes the character which Dr. G. Bird mentions, of true malarial disease combined with an idiopathic gastro-intestinal irritation.

The bowels are always in an irregular condition; sometimes costive, sometimes there is diarrhœa, with a tumid condition of the abdomen; the motions are more offensive, and similar to Dr. Butter's description before alluded to. The tongue is more foul, the papillæ injected. There is occasional nausea, and the appetite is very fanciful. The pulse, although not so quick as in the acute form, is yet almost always above that of health, being quick and irritable.

The picking of the skin is more constant, and the angles of the mouth, or other places that are picked, present sores that are very characteristic. Chronic cutaneous eruptions—as ecthyma, porrigo—not unfrequently occur. During the entire period of this form of disease, the child is often not so ill as to keep his bed, but is fretful, weak, and disinclined to exertion. The duration is often of some months, and recovery takes place very slowly; occasionally the child is better for a time, and then, owing to some error in diet, or other casual circumstance, again becomes worse.

This form, when neglected, or even with the greatest care, in scrofulous children especially, is likely to induce the development of mesenteric disease, phthisis, hydrocephalus, chronic inflam-

mation and ulceration of the intestine, and enlargement of the spleen; this latter occurring more frequently than is supposed.

When the chronic form occurs after measles, scarlatina, or hooping-cough, or other diseases where there has been inflammation of the intestinal mucous membrane, it is peculiarly subject to a relapse, is often accompanied by scrofulous sores on the skin, and aphthous ulceration of the lining membrane of the mouth.

In March 1843, I had under my care a poor family of four children, in whom, after measles, this low form of remittent fever, with bowel irritation, occurred, together with a tendency to a typhoid condition. They had been badly nourished, and all of them had ulcerations on the interior of the mouth; and in one cancrum oris* was developed, a portion of the cheek sloughing away, and the child eventually died. Dr. West informed me he has also met with two cases which terminated fatally from gangrene of the cheek.

Chronic Gastric Remittent Fever.

Case XII.—The following case, abbreviated from Dr. Bird, illustrates remittent fever preceded by gastric fever, and accompanied by ascarides in the motions (Case 3, Dr. Bird):—

Male, æt. 6, residing in Clerkenwell, an offensive drain being at the back of the house. Four weeks ago suffered from malaise; from that time has emaciated: irritable, and appetite lost.

Jan. 16.—On admission aspect dull and heavy, cheeks flushed, manners petulant, skin hot, tongue white, projecting red papillæ, slight diarrhœa, motions offensive; at night is feverish, with delirium; in the day-time there is headache: pulse quick and jerking; no cough.

27th.—Remissions this morning; pulse 70. Duration of illness four weeks before admission and three weeks after.

Treatment.—Jul. Menth. c. Sodæ, and quinine afterwards. As in case XI., I have only taken the leading symptoms, which will be seen by a reference to the reports (Guy's Hospital Reports, vol. iii. new series).

Acute Remittent Fever succeeded by Chronic.

Case XIII.—July 1844. A young girl, aged 9, was under my care with a severe attack of acute remittent fever. She resided in a most unhealthy situation, a stagnant ditch being opposite the house, and the locality was scarcely ever free from fever. She became convalescent in three weeks, but, still residing in the same place, she was attacked a fortnight after with fever of a chronic form, from which the recovery was very tedious, and was followed by porrigo decalvans. Her sister, aged 3, the following month also became ill, with fever and diarrhœa; in her instance also followed by the chronic form, with much bowel irritation.

Chronic Gastric Remittent Fever complicated with Pneumonia of Upper Right Lung and . næmic (?) Murmur.

Case XIV.—Dec. 14th, 1848. T. C., æt. three years and a half. Male. Formerly a robust child, and enjoying good health, but for the last four months has been ailing. Three weeks back he had an attack of cynanche parotidæa, from which he gradually recovered; since which time he has had his tongue furred, quick pulse, a febrile attack every night, and at other times in the day has looked pallid, with a dark areola round his eyes. Has been fretful and peevish, frequently picking his nose and rubbing one eye, which has a crack in the upper lid from a slight degree of psoriasis. Appetite precarious, but never as good as natural. The bowels somewhat confined, deficient in bile. The urine has been scanty, and depositing lithates. Has taken the Hyd. c. Creta c. Pulv. Rhæi occasionally, and the Julep Amm. Acet. mixture, but is now taking the soda mixture ter die.

Under this treatment he gradually recovered his strength, but was not in a good state of health, when in January he had an attack of lobular pneumonia of the right lung, which came on insidiously. By means of Cal. and Ipecac., and antimonials and repeated blisters, he recovered from this chest attack, but again returned into the same chronic derangement of his general health as he suffered from before. Without particularizing his symptoms, of which I have

* Dr. Churchill states "that, according to the testimony of Thomassen and Thyssen, it (cancrum oris) prevailed epidemically in the Netherlands, as a consequence of gastric fever, and also, in 1838, in the Philadelphia Almshouse."—Dis. of Child. p. 410.

no daily note, they were those characterizing chronic remittent fever of a gastric type ; and on 19th Feb. his tongue is reported to be moist, with a yellowish-white fur, thick in centre and at the root, but getting thinner towards the apex and edges, in which latter parts the papillæ are prominent and red. About this time Dr. Addison saw him, and considered him suffering from chronic gastric fever, and advised change of air.

For some days past a murmur or bruit has been observed to the right of the sternum, even with the situation of the aortic valves. Respiration in the apex of right lung good ; slight mucous crepitation towards the base : percussion of the chest good. The crack of the eyelid is troublesome ; if better a day or two, again breaking out.

March 3d. — The tongue continues furred : papillæ red and lengthened ; pulse feeble, quick ; has excoriation about the anus ; has been taking cod-liver oil, 5j. twice a day, the last five days. Bowels irregular ; motions offensive, and of a mixed colour—yellow and greyish. Becomes slightly feverish towards night, and his sleep is disturbed. The murmur is loud over the junction of the sternum and third rib, and upwards to right side, masking the respiration in the apex of right lung.

10th.—Tongue improving ; papillæ less lengthened and injected ; cardiac sounds the same ; corners of mouth for some days have been ulcerated and cracked, and he is frequently picking them.

A small blister was applied behind the ear with a view to remove the crack on eyelid : it was kept open a fortnight, and appeared to do some good.

April 14th.—Tongue tolerably clean ; and has been gaining flesh the last two weeks. A month's absence from home, and afterwards a change for a few weeks in the country, was of the greatest benefit to him.

In May, Dr. A., who saw him again, and examined him carefully, found the murmur only occasional, and much less intense ; he considered the murmur had been venous, perhaps produced by some enlargement of the bronchial gland, and kept up by his continued gastric derangement. He is now hearty and well, having taken the cod-liver oil about two months. The murmur subsequently left entirely.

4th. *Typhoid.*—As in the continued fever of adults, so in the febrile affections of children, a low or typhoid form may supervene on an acute attack, or it may assume this character from the commencement ; the patient becomes gradually weaker and more feeble, and throughout the day a drowsy condition approaching to stupor ensues, from which it is very difficult to arouse the child ; the tongue becomes dry and brown, and often, if diarrhœa is present, or other indication of enteritic mischief, it is red and shining ; the teeth and lips are covered with sordes ; the pulse becomes very quick and feeble, and sometimes small and thready. With the stupor there is now low muttering delirium, and during this state the child will often pick himself severely. The bowels in general become relaxed, the motions being of a yellow ochry colour, and there is often pain on pressure in the abdomen, more particularly towards the right iliac region ; sometimes the sphincters lose their power, the motions and urine passing involuntarily. Petechiæ occur, and in one case under my care bullæ, followed by incipient gangrene, made their appearance (see Case XV.).

During the time that these symptoms are at the worst, the child will sometimes refuse to take any food. Dr. Pemberton says he has known the appetite to be so totally deranged that half a pint of toast water is all the nourishment taken in the twenty-four hours. On the other hand, we sometimes find the patient to take eagerly and freely of beef-tea, and arrow-root with wine. So, also, of the delirium which is so frequently present, we have many cases where the patient becomes excessively prostrate, and yet the delirium is but slight. In the advanced stage of this disease, Dr. Coley refers to the occurrence of discoloration and separation of the skin ; and Dr. Pemberton has described a scaly separation of the cuticle as indicative of enlargement of the mesenteric gland ; but Dr. Coley says " he has observed it when there has been no mesenteric disease, or, if present, there has been remittent fever, and evident disorder in the secretions of the liver and intestinal canal ; and this latter has been the most urgent and conspicuous malady." He considers it proceeds from heat and dryness of skin, when the fever has been of long dura-

tion, and is probably a death or destruction of the cuticle.

Simple exfoliation of the cuticle, according to my experience, is not an uncommon occurrence towards the decline of the disease, but not in any way characteristic of any form of remittent fever.

An eruption has been described by Rilliet and Barthez, occurring, about the end of the second week, in typhoid fever, only, however, in the minority of instances; and, when present, it is generally scanty, often visible only two or three days, and often absent altogether. In his work on Diseases of Children, Dr. West does not mention that he has met with it; neither am I aware that any other author has: certainly it is not in this country a general attendant upon remittent fever. I have in a very few cases seen spots or maculæ, in cases of fever in children, similar to the maculæ that appear in some epidemics of fever in adults.*

The duration of this form is from two or three weeks to a month, or even longer; the termination most frequently in recovery; the signs of returning convalescence consisting in the gradual cessation of the symptoms, the cleaning of the tongue, and the improvement of the different secretions. Sometimes, however, instead of recovery, death ensues, either from the severity of the typhoid symptoms, or from ulceration, and occasionally from perforation of the bowel, or from cancrum oris.

Typhoid Fever with Bowel Irritation and Pompholyx.

Case XV.—E. T., æt. 12. Jan. 1st, 1846. Her brother had an attack of fever assuming the typhoid form about two months back. A tall girl, with dark hair and eyes; was pretty well on Christmas day, but the evening after, when out with some friends, was observed to be dull and indisposed. Since then she has been getting gradually worse, having general malaise, complaining of headache, rigors, followed by slight heat; and this day (1st Jan.) I first saw her. She was labouring under the usual symptoms of fever in the advanced typhoid stage, having the dull stupid aspect, vacant eye. She had been delirious the last three or four nights. The tongue was perfectly dry, parched, and cracked, at times bleeding; the lips and gums covered with sordes, and at times also bleeding; her bowels were relaxed, with abdominal pain; low muttering delirium at night; incapacity of being moved or turned in bed. She progressed favourably for some days, when, on Jan. 7th, I found her much weaker. The day previous some bullæ had made ther appearance; one on the right knee over the inner condyle, one on the left ear, and two on the left cheek. The one on the knee, larger than a crown-piece, was now broken, and of a red colour, in one part assuming a gangrenous appearance; the one on the ear also broken; those on the face were entire, about the size of a shilling, of an opaque straw colour: their first appearance was vesicular, about the size of a pin's head, and their contents opaque. The bowels were relaxed nine times in the day, with much pain of the abdomen generally, increased on pressure; great heat of abdominal surface; skin cool, except face, which is flushed on the *right* side. Pulse 126, feeble; tongue brown, dry, cracked. No delirium last night, and slept better; answers questions readily. There is a red spot on outer ankle of *left* leg—painful. Right foot much swollen, and painful. No cough; chest normal. Linseed meal poultice to abdomen. — ℞ Mist. Cretæ, ℥j.; Syr. Pap. ♏xv. after every relaxed motion. Wine, ½ oz. every 4 hours; beef-tea and arrow-root, &c.

8th.—Slept at intervals during the night; no delirium; bowels opened three times, the last motion rather firm, and well supplied with bile; water scanty, high coloured; tongue still dry, but cleaner; pulse 136, rather more power. The two bullæ on the cheek have broken, and assumed a similar appearance to the others: one small one has appeared on the right cheek. More collected to-day; has taken rather more than a pint of beef-tea and two eggs. Rep Mist. Cretæ, urgente diarrhœa.—℞ Quin. Disulph, gr. j.; Syr. Pap. ♏xv., ex aqua sextis horis.

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* "Dr. Condie has noticed a rose-coloured eruption upon the abdomen and inner surface of the thighs."—Churchill, Dis. of Child., p. 639.

Dr. Jenner has given a minute account of the rash in typhus and typhoid fever, and is of opinion that typhus, typhoid, relapsing fever, and febricula, are not varieties of continued fever, but distinct diseases. Dr. Stewart also gives the distinction between the rashes of typhus and typhoid fevers.—See Dr. Jenner's excellent papers in Med. Times, 1849-50; and also Dr. Parkes' edition of Thomson on Dis. of Skin.

9th.—The abdominal pain removed; only one motion to-day; took nourishment freely; passed a good night, but appeared sinking. I was prevented seeing her this day, and had no notice either of her being worse or of her death; was told she took nourishment within an hour of her death, and was quite sensible. The bowels were not loose; did not appear in any pain, but sank: they would not permit an inspection.

Remarks.—This patient when first seen was labouring under the symptoms of typhus fever in the advanced stage. In November I saw her brother with fever, who got well, and was presented Dec. 10th. They lived in an open road, but the back of the house was offensive from an overrunning drain, and the family were overcrowded: their illness doubtless arose from malaria. The brother's attack, who was younger, partook of a remittent character: they both had bowel complication.

The brother had been delirious for eight or ten nights, and scarcely able to speak. I had him removed to the top room of the house without furniture or fire. The girl, more coherent throughout, her mind more collected, but more feeble, lay in a back parlour next their common living room. The treatment was the same—ammonia and serpentary, wine, and afterwards quinine; but, *four* days before her death, these bullæ appeared, and, on the vesication breaking, assumed a gangrenous appearance in the centre; they had more the character of pompholyx than pemphigus, as described by Dr. Bateman. The surrounding skin was not inflamed, nor the margin hard, the margin being only rather red.

Dr. B. alludes to the pompholyx diu tinus being symptomatic in continued, intermittent, or remittent fevers in debilitated constitutions. I am inclined to think (as gangrene followed) it showed a commencing dissolution in the part, and was analogous to sloughing of the cheek (cancrum oris), or sloughing of the labia pudendi, which we also find occasionally occur in chronic or typhoid fevers. The œdema about the ankles was also a sign of the failing of the constitutional powers.

5th. *Malarial disease.*—There is also a form of derangement of the general health which has many of the symptoms mentioned in the mild form without the paroxysm of fever. It may be considered by some as not being the identical affection; but I conclude it is at least the early or premonitory stage, because in one family where three or four children are the subjects of illness, one child may have all the symptoms—as loaded strawberry tongue, pallid aspect, &c.—without any paroxysm of fever, or even any increased heat of skin, and the others shall have a well-marked attack of remittent fever. I have drawn attention to this, as it is of frequent occurrence, and yet it is not mentioned by any author, with the exception of Dr. Addison,* who makes his first class of cases "as unattended by any febrile exacerbation whatever," and afterwards says "they are most frequently met with." It is more analogous to the mild form, and, for the sake of giving it a name, it may be termed "malarial disease"—a term, I believe, occasionally used by Dr Addison.

These different forms of fever which I have endeavoured to describe as occurring in children, run into one another, and in one locality; the disease may appear under every variety at one and the same time, thus showing their connection and the similarity of their origin.

Complications and Sequelæ.

Having considered the disease under the different forms in which it may occur, we will now turn to various affections which may either arise in the course of the disease or succeed upon it, they not being a part of the original affection, inasmuch as it very generally occurs without them.

A not unfrequent occurrence at the commencement of the disease is cynanche tonsillaris, or c. parotidœa. In Nov. 1848, the various forms of cynanche were prevalent, and in many instances remittent fever was developed subsequently; erythema is also occasionally met with at the onset. As before remarked, chronic cutaneous affections and strumous ophthalmia occur when the disease has existed a long time.† Dr. Bird also mentions a case of a cachectic child having purpura on its legs and arms.

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* Bright and Addison's Pract. of Medicine, p. 64.

† Guy's Hospital Reports.

More or less bronchitis is often present. Phthisis is now and then developed upon it.

Inflammation and ulceration of the intestinal mucous membranes and of Peyer's follicles is considered by some a not unfrequent concomitant; and even perforation of the intestine and peritonitis have occurred. Simple enlargement of the mesenteric glands, and also scrofulous disease (tabes mesenterica), is an occasional sequel, but the most important complication is that of irritation of the brain passing into hydrocephalus: all of these affections, however, will be better treated of in considering the diagnosis.

Diagnosis.—Before entering on the diagnosis between it and various other affections, let us first glance at the more distinctive characters of the disease itself,—it is a *fever* more or less of a *remittent form;* often accompanied by *gastro-intestinal* irritation and inflammation, the *paroxysms* of fever usually commencing in the *evening*, the *remission* in the morning. Tongue furred, with elongated and injected papillæ; condition of bowels abnormal; motions offensive, but presenting no regular appearance; attended also by a frequent picking of the skin in various parts. The numerous other symptoms are not such as to be considered diagnostic, nor, in fact, are the preceding, taken singly; but it is from the assemblage of the symptoms, and their order of concurrence, together with a careful examination of the history and concomitant circumstances, that we form our opinion, and thus endeavour to arrive at a correct diagnosis. In general, at the onset, the disease is sufficiently easy of diagnosis, or, at least, becomes so by the time it is fully developed; but as it may be mistaken for other disease, and more especially as the complications mentioned may occur, we should make use of our best efforts to detect them early, as their presence will affect the probable termination of any given case, and also its treatment.

Dr. Joy has particularly alluded to this:—"Amidst our efforts to establish a correct diagnosis in any particular disease, we must not forget that diseases are at all times, in the language of the older writers, convertible into each other; or that, to use the more moderate phrase, complications may arise in their course, and the secondary affection predominate over the original." When there is any difficulty in the diagnosis, in by far the greater number of instances it arises in the course of the disease, although, at the onset, pneumonia, acute hydrocephalus, and other acute inflammatory affections, may be confounded with it.

I. *Rheumatic Fever.*

The acute form may, at its onset, be confounded with rheumatic fever; the general pains in the limbs and trunk are at times so great, that it requires the lapse of a few days to determine.

II. *Lung Affection.*

1. The occurrence of bronchitis, or simple catarrh, is not an unfrequent complication. Dr. G. Bird considers it a complication of no importance: a careful examination of the chest, together with the other symptoms, will easily detect its existence. In the Children's ward at Guy's Hospital, in the early months of 1848, there were many cases of remittent fever; in the winter months many were complicated with bronchitis, and a dulness of one lung posteriorly existed, such as in some instances would have afforded the indication of lobar pneumonia: this state was, however, usually found to correspond to the side on which the patient lay, and is considered by Dr. Bird merely to arise from congestion. Some of the cases occurred during or after hooping-cough, when congestion of the lungs would more likely take place.

Case XVI. *Acute Remittent Fever with Bronchitis.*

Miss C., æt 6, 22d February, 1849, æt. 5 days. Complains of headache; face flushed; eyes injected; skin generally hot; has a constant hacking cough; tongue white, moist, not much furred; papillæ injected; appetite bad; pulse 160; towards night the heat of skin increases; respiration hurried; auscultation discovers nothing abnormal in the chest; bowels confined, but relieved by Inf. Sennæ.

25th.—This afternoon, at 4, she became very feverish, which lasted almost until the morning of the 26th. The cough more troublesome; mucous rales are heard in the left side of the chest; bowels confined.

The Soda Mixture with Ipecac. Wine; Cal. gr. ii.; P. Scam. Co. gr. v. h. s. s.

27th.—Bowels freely moved by the powder; motions dark, scybalous; and this morning she appeard better: in the evening the accession of fever returned; pulse 120. Tongue covered with dark fur almost to tip; urine high coloured; has slight sore throat; right tonsil enlarged.

2d March.—Cough and bronchitic rales nearly gone, but still some feverish exacerbation. Tongue loaded with yellow creamy fur, red at tip and edges; papillæ elongated.

Quininæ gr. ½, quater in die.

12th.—Tongue assuming healthy appearance; appetite returned; convalescent.

2. From the great heat of skin, and the cough that is frequently present, pneumonia may be suspected at the onset, or it may occur in the course of the disease. In the well-marked forms of pneumonia we shall have but little difficulty in our diagnosis, but in the latent and lobular forms, where the ordinary symptoms are not well marked, an error is likely to be made. As in the adult, so in the child, a case will sometimes be looked upon as one of fever, when perhaps in the course of a few days we are surprised to find it assume the character of pneumonia; frequently, however, it is not until after death that we detect our error. In any instance we must not trust to the ordinary diagnostic symptoms, but have recourse to a careful physical examination of the chest.

Dr. West alludes to this difficulty, and mentions the case of a boy, aged twenty months, who died the fourteenth day from the commencement of an illness which resembled remittent fever in many of its symptoms, but was associated from its onset with indications of pneumonia, and after death there was found lobar pneumonia of the upper and middle lobes of the right lung, terminating in abscess of the middle lobe.

3. As before mentioned, phthisis sometimes follows on the chronic form, especially in scrofulous children, also in that combined form of malarial remittent fever and gastric irritation which is apt to occur after measles. Sometimes tubercles being present in the lungs may be excited into an active state during the disease; at other times the prostration of the disease may give rise to such a state of health that the deposition of tubercles ensues, and phthisis may be looked upon as a result. Both these occurrences are not unfrequent, and the greatest care is necessary to prevent them. Dr. Locock draws particular attention to this fact; and a case is reported by Dr. G. Bird of the development of phthisis on remittent fever. A medical friend had a child suffering from remittent fever, becoming chronic, which he has since lost from phthisis. In my own practice I have met with phthisis and mesenteric disease developed after chronic remittent fever: but it is unnecessary to multiply cases which must be familiar to all.

Dr. West remarks, "that general tubercular disease, running an acute course, may now and then be mistaken for a short time for acute remittent fever." The history of the case, and a careful physical examination of the chest, will be our chief means of diagnosis between the two, or in detecting the commencement of phthisical disease during the progress of a case of chronic remittent fever. The physical signs of phthisis in the young subject I do not enter into in this essay; they are well described in Dr. West's work on the Diseases of Children.

III. *Bowel Affection.*

In the greater number of cases, bowel irritation is present during one or other part of their course, and occasionally proceeding to inflammation of some part of the mucous membrane of the canal: it is more liable to occur during the summer months, or in damp weather. It certainly must be considered as a complication, as many cases occur without it, and in others it occurs only after the disease has become protracted, and therefore cannot be regarded, according to the French, and some of our own authors, as constituting *the disease.*

When any serious mischief is indicated within the abdomen, it is characterized by pain, increased on pressure, generally about the right iliac region, the tongue becoming red and shiny at the apex and edges; the bowels becoming relaxed, and passing into a dysenteric state, with frequent and scanty dejections, almost made up of mucus streaked with blood, giving them a currant jelly appearance, and having but little true fæcal matter in them

The sudden occurrence of pain of an acute character, with a state of collapse, will indicate the rare termination of this disease in perforation of an ulcer of the intestine, and subsequent peritonitis. Although in some localities the diarrhœa is very troublesome, and difficult to check, yet when accompanying remittent fever in this country, it seldom proceeds to such extreme symptoms, and Dr. G. Bird says, "in sixteen in-patients, and nearly seventy out patients, there was scarcely an instance of important derangement of the gastro-intestinal mucous membrane; certainly none which could be regarded sufficient to play any part in the development of the disease"

Case XVII.—*Intestinal Fever, succeeded by perforation of the intestine—"Peritonitis from fæcal effusion."* See Post-mortem Examination Books, Guy's; reported by Dr. Hodgkin.

December 31, 1831.—E. F., æt. 11, a healthy looking girl, admitted nine days for apparently simple fever, but preceded by costive bowels for three days; the febrile symptoms continuing *varying* in severity during the entire week, but without exciting alarm, though the alvine evacuation had become frequent and offensive.

8th day.—There were violent abdominal pains, said to have subsided during the night. In the morning the abdomen was tense and tender, and there appeared to have been an involuntary stool, which was followed by violent vomitings: the pulse became exceedingly feeble, and she sank.

Sectio cadaveris two days after—A brown opaque watery fluid, manifestly fæcal, was found in the peritoneum; scanty fibrinous effusion; there was vascularity of peritoneum and bands of lymph; a single ulceration was found amidst a patch of glands, about six inches from the cæcum, vascular, and communicating with the peritoneum; aggregate and solitary glands were much developed and slightly vascular.

IV. *Mesenteric Disease.*

Scrofulous disease of the mesenteric glands is sometimes induced by the chronic form of remittent fever. Dr. Locock considers it a most common complication, caused by irritation which takes place in the course of this disease. In the acute and well-marked forms of fever in children there will be no chance of mistaking it for mesenteric disease; but in the chronic form there may be. After chronic fever of a gastric character has continued for some time in a child, and the original symptoms become less definite, and there is general pain in the abdomen complained of, together with the presence of a tumid and prominent condition, and an absence of dysenteric symptoms, and sweats, and emaciation, and other indications of hectic also exist, we may suspect scrofulous inflammation of the mesenteric glands being set up; and after a longer time the symptoms of mesenteric disease would become more manifest, and the original affection would be merged into the subsequent.

According to Dr. Locock, the diagnosis between the two diseases consists in the appetite being voracious in mesenteric disease; the motions peculiar, white, and chalky—rarely fœtid and slimy; the general permanent rapidity of the pulse, and hectic exacerbations, but no regular remitting paroxysms, and no *picking;* in griping pains about the navel, increased by deep pressure, with regular recurrence of deep pain in the abdomen for three or four hours; the frequent detection of large glands in the umbilical region by manual examination; and he quotes Maunsell and Evanson, that "in mesenteric disease we find wasting, but it is slow and regular, not variable and rapid, as in bowel complaint."

Dr. Coley draws a careful diagnosis between inflammation and enlargement of the glands of the mesentery and remittent fever; but his chief distinction seems to be in the circumstance of the fever of mesenteric disease being "hectic."

Rilliet and Barthez say of mesenteric disease, "the symptoms are by no means definite; for the functional disturbances to which it gives rise are common to it with many other affections: hence, until the glands have acquired so large a size as to be perceptible through the parietes of the abdomen, the diagnosis is attended with difficulty."

Dr. West considers tabes mesenterica a very rare disease, but carefully describes tubercular peritonitis, which is almost analogous to it. According to his account of tabes mesenterica, he considers there is no special symptom before the enlarged glands can be felt through the abdominal walls.

A reference to the statistics for the

mortality of 1840, 1843, 1844, shows that in the metropolis, in the year 1840, the deaths registered from tabes mesenterica were very few; whilst in 1843 and 1844 they were very numerous, and those from gastro-enteritis proportionably decreased: thus pointing out most practically that this disease, which seldom exists without being combined with other diseases of a fatal character, is doubtful of diagnosis, and sometimes registered under one name, and sometimes under another.

In those cases where tubercular inflammation of the peritoneum is set up, there are more general and frequent pains, of a flying character, about the abdomen, and the child complains of "belly-ache," and draws the legs up to abdomen.

CASE XVIII.—*Mesenteric Disease after Remittent Fever, followed by Tubercular Peritonitis.*

L., æt. 5 years, male, beginning of April, 1846; residing in Lambeth, a low, damp situation, but is chiefly up stairs, and is well fed; a highly strumous constitution. A sister, about 20 years of age, died last autumn of phthisis; and another child died, some years since, of hydrocephalus, coming on after partial recovery from remittent fever.

This child has been ailing for some time, apparently, from the account of the mother, having suffered from chronic remittent fever. The abdomen has been increasing in size, and, for about the last three weeks, has complained of pain, crying out that he had got the "belly-ache." The bowels were sometimes relaxed, at other times confined, and the motions pale and of a clay colour, with scarcely any bile; the urine scanty; face thin and pale, indicating pain, and a flush on one cheek occasionally; the superficial veins of the abdomen well marked; has slight cough; no physical signs of chest disease; the abdomen is much enlarged and prominent, not painful on pressure; increased dulness in the right hypochondriac region, and a doubtful sense of fluctuation. The pulse varied from 100 to 120 and 130. ℞ Hyd. c. Cretâ, Pulv. Rhei, Sod. Sesquicarb. aa. gr. iv.; Pulv. Ipec. co. gr. iiss.; Fiat Pulv. iv.; j. bis die s. ℞ Liq. Potass. ʒss.; Pot. Iodidi, gr. vi.; Syr. Croci, ʒj.; Aquæ ad. ʒiss. M. 1-6th ter die.

This case I considered as one of mesenteric disease following upon chronic remittent fever. The child, although not having been under my care previously, was frequently seen by me, and I supposed peritonitis was arising, consequent upon the mesenteric disease.

The preceding plan of treatment had been persevered in for some time, with the occasional omission of the mercurial; but the child emaciating gradually more and more, the abdomen at the same time getting somewhat less in size.

The child took but little nourishment—viz., about half a pint of milk, and a little sago or arrowroot, in the course of the day.

21st.—The child was seen by Dr. Hughes, who, confirming my opinion of the actual condition of the child, objected to the use of iodine and mercury internally, for fear of producing diarrhœa, recommended Liq. Potassæ in large doses, with Dec. Cinchonæ. Bowels open twice during yesterday, and once in the night; motions more yellow in colour, loose; pain in the abdomen four or five times in the day, lasting about fifteen to twenty minutes. Has taken his nourishment better the last few days; sleeps tolerably well; becomes feverish towards night. ℞ Liq. Potass. ℥xiv.; Dec. Cinchon. co. ʒss. ter die sumend. ℞ Hyd. c. Cretâ, gr. i.; Pulv. Ipec. co. gr. iss. o. n. s.; Ung. Iodin. Comp. o. n. abdom. infricandum.

25th.—Tendency to diarrhœa continuing, the Hyd. c. Cretâ omitted; takes his nourishment better, but, according to his mother's statement, gets daily thinner, the abdominal pain continuing much the same.

July.—Towards the end of this month the child's mother noticed a slight oozing from the umbilicus. Since the last report the child had not been under my care, but only occasionally seen by me.

18th August.—The oozing from the umbilicus has a fæcal smell, and I think there is no doubt as to its coming from some part of the intestinal canal: although the smell is fæcal, it is somewhat different from that of motion passed per anum.

In some of the discharge I observed a raspberry seed from a tart which the child had eaten. There is usually more discharge after taking nourish-

ment, which he now takes freely. Sometimes, if drink is taken, and in the erect posture, it will come forth in a slight stream from the umbilicus. His bowels are open three, four, or five times a day; is only taking the Pulv. Ipec. Comp. in doses gr. ij. to v., as required. His countenance is emaciated greatly these last few weeks, and is indicative of great distress; he sits in the semi-erect posture in bed, his legs drawn up to the abdomen, which is very tender, and will not allow it to be examined.

28th.—During the last few days the discharge has almost ceased, the child continuing in the same condition, and with no perceptible change to his parents, except that last evening he would not eat his supper—a most unusual thing, as he had been hitherto voracious. The night was passed quietly, but without sleep, and about 9 A.M. he died, the pain in the abdomen having been more severe the last 36 hours.

Autopsy.—29th, 12 A.M., 23 hours after death—Weather hot.—Abdomen not much distended; an increased hardness around the umbilicus; decomposition advancing rapidly; the abdomen alone permitted to be examined.

By an incision from the ensiform cartilage to the pubis, not through the umbilicus, but allowing that to remain in an oval form, connected with subjacent structure.

The peritoneum covering the muscles was universally adherent to that of the intestines, and could only be separated by force and tearing away. There appeared a double false membrane—namely, one attached to the peritoneum lining the abdominal walls, and another to the peritoneal covering of the intestines. Tubercles of the size of a small pea were in a small number on the peritoneal surface of the intestines, with effusion of firm coagulable lymph binding the intestines together. The mesenteric glands were enlarged and tuberculated; on cutting them, they were seen softened in the centre.

The liver was much enlarged, having tubercles in its substance, and also in its covering, and was firmly adherent to the adjoining parts

There was effusion of fetid pus gravitating towards the lumbar and pelvic regions, and the left side of the intestines had some yellowish matter on them, similar to the cheesy contents of the tubercles: it did not appear to have a fæcal smell.

By careful examination we could not discover any opening externally from the umbilicus to the anterior of the intestines; a probe only passed through the skin, and the intestines were so matted together that they tore on endeavouring to separate them. Most probably there was some minute opening in the intestine which we could not discover. There were some small ulcers of the mucous membrane of the intestine.

The kidneys were somewhat tuberculated, but had no tubercles in them.

V. *Brain Affection.*

Of all the diseases with which remit tent fever may be confounded, or of the complications which may arise in its course, brain affection, in whatever degree or form it occurs, is the most important, whether we regard it in reference to the diagnosis, the treatment, or the probable termination of the case.

A. *Sympathetic disturbance.*—As I have previously remarked, disturbance of the nervous centres is met with, in the majority of cases, in the mildest cases,—merely as starting in the sleep, talking, and slight delirium; but in younger children, and in the acute form, the disease occasionally commences with an attack of convulsion, as sometimes occurs in the exanthemata (see Case XIX). In the more severe cases, together with the delirium, stupor ensues; and these require to be detected from the more serious signs of cerebral disturbance. In general, there will be no great difficulty in this; for, as Dr. West says, "the stupor of fever is so different from the coma which supervenes on brain affection, and the insensibility which characterizes it is so much less profound, that one can hardly be mistaken for the other." The delirium in remittent fever is generally during the night, or, if otherwise, when the paroxysm of fever is present: this circumstance, together with the absence of other symptoms, will tend to distinguish this state from more decided signs of inflammation. But at this time the greatest care is necessary in watching the child, especially if there is any family tendency to brain disease; for sometimes cases terminate fatally, and little or nothing is found to account for the

cause of death. This is noticed by Dr. West. Dr. Willshire also gives a case in point, of a boy, aged two years, with remittent fever, who, having some slight brain symptoms, died, and only slight meningeal congestion was found.

CASE XIX.—*Acute Remittent Fever, with Convulsion at onset.*

In Sept. 1847, a boy, æt. 7, came under my care, residing in East Street, Walworth, an unhealthy locality; at the time, fever of a peculiar type was prevalent, both among children and adults. It was characterized by loaded white tongue, afterwards having a shiny tip, and much gastric and intestinal irritation, as evinced by nausea, vomiting, and diarrhœa, and much jactitation of limbs, soon becoming typhoid, and requiring the use of wine and stimulants. This boy had been ailing for some few days, with a tendency to diarrhœa, and he was badly fed, when he was suddenly attacked by convulsion. This convulsion was repeated: together with this there were some cerebral symptoms, as headache, nausea. Although debilitated, I applied two leeches to the temple, which were repeated. The fit did not return, and in the course of the next day the disease developed itself more clearly as the fever, which was at that time both epidemic and endemic. The spirit lotion was applied to the head; the diarrhœa attended to. Effervescing mixture with ammonia was given, and afterwards ammonia and serpentary wine, and quinine, and he eventually recovered in about five weeks from the time of his attack.

CASE XX.—*Acute Remittent Fever, with Gastric Disturbance and Head Symptoms.*

J. R., æt. 7. Female. March 9th, 1849. Residing in Rotherhithe: has been ill one week: according to her mother's account, she has been ailing and feverish, the fever coming on regularly towards evening, during the last week. She was first attacked with nausea, vomiting, and headache. Her present appearance is languid, eyes heavy, aspect dull, great heat of skin; pulse very quick, scarcely to be felt. Her mother says her motions have been very offensive, like corruption. She complains of much pain over the forehead, with nausea, but no vomiting. The tongue is furred, loaded even to the apex, the papillæ raised and reddened. She is roused with much difficulty. The head to be kept cool by evaporating lotion, and the soda mixture every six or eight hours.

13th.—Tongue much cleaner.—Liq. Ammon. Acetat., with Infus. Serpentary, t. d.

14th.—The remissions becoming more evident.—Quiniæ Disulph., gr. j., t. d.

She became convalescent in a fortnight from the beginning of the treatment.

Diagnosis from Hydrocephalus.

Before considering the diagnosis between remittent fever and hydrocephalus, it will be well to understand rightly what we allude to as constituting hydrocephalus, for even at the present time it is a term upon which the opinion of authors varies. The old authors always referred those cases to hydrocephalus where, after death, effusion was discovered, either in the ventricles of the brain, or under the arachnoid membrane. After a time, however, it was shown that many children died of symptoms of hydrocephalus, and yet this effusion was not present, or perhaps any important lesion whatever, in the cranium.

In 1840, Dr. Bennett remarks that Rufz, Gherard, Dance, and Piet, observed the pia mater sprinkled with hard grey or yellowish semi-transparent granulations, which by some have been considered to be enlarged glands of Pacchioni, by others coagulable lymph, or miliary tubercles. In his own experience he says—"where he has observed these bodies in children dying under meningeal inflammation, he has found in *every* instance tubercles in other organs." This remark, however, shows that at that time the existence of tubercles in *all* cases was questionable, or at least their nature and appearance were not known so well as in every instance to be detected.* Dr. Hope† described hydrocephalus under the term of "meningo cerebritis," and said "it

* A case is related by Dr. Cheyne, of remittent fever, terminating in scrofulous hydrocephalus, where, besides inflammatory appearances of the brain and its membranes, and effusion to a large extent, tubercles in the liver were found, "and several little papulous eminences" (tubercles ?) "over the plexus choroides."—P. 205, Dissection ii.

† Library of Pract. Med., vol. ii., art. Inflammation of the Brain.

is to be regarded only as a modification or variety of cerebral inflammation."

Latterly we find authors restricting the term hydrocephalus to scrofulous inflammation, where tubercles have been discovered after death, either in the membranes or substance of the brain (Rilliet and Barthez, West).

Churchill, in his great work, says—"an attempt has been made to distinguish between simple acute, and tubercular meningitis, but, I think, without success, except in extreme cases." Considering the avowed difficulty in determining whether cerebral inflammation is of a simple or scrofulous nature, I shall not make the distinction, but merely remark that the supervention of hydrocephalus is more frequent and more to be suspected in scrofulous children.

B. *Diagnosis between Acute Remittent Fever and Acute Hydrocephalus.*

The difficulty of diagnosis between these two forms of disease in some cases is very great, and has been insisted on by many; not so, however, by others. As before remarked, in speaking of the nature of the disease, different authors have described different forms of the disease, and hence their diagnosis is different; for while one (West) draws a diagnosis between the acute form of both diseases, another (Locock) says—"in the acute form of either disease the mistake is unlikely to occur." This may, I believe, be accounted for by regarding Dr. Locock's "infantile remittent fever" as a different form of disease to acute malarial remittent fever.

Dr. Joy considers the rapid form of hydrocephalus "bears so strong a resemblance to fever as to have been confounded with it."

Cheyne also says—"this is the form (the acute) in which there is the greatest resemblance between the two diseases." Again: "Hydrocephalus resembles several forms of fever, but none so much as acute infantile remittent fever," and draws his distinction "by the regular and complete remissions, and the fetid, dark, and brown mud stools of the latter;" and further remarks—"We must particularly attend to the *train* of symptoms, the *gradual* commencement of hydrocephalus, the more regular remissions, the dyspeptic symptoms, the nature of the excretions, particularly the dark, glairy, and unnatural stools, the aversion to light, and the whole expression of the disease, the peculiar pains in the head in hydrocephalus differing so much from fever."

Dr. Sims "believed, under five or six years of age, the diagnosis was often impracticable until within a few days of death."

Dr. Copland thus draws the diagnosis between acute hydrocephalus and acute remittent fever:—the former is characterised by somnolency, knitting of the brows, great irritability of stomach, which is increased by motion and the erect posture, by the raising of the hands to the head, throwing back the neck, the excitability and irregularity of the pulse, the peculiar character of the evacuations, and obstinate costiveness; by the pains shooting in various parts, and the overpowering headache, the starting peculiar scream, and the expression of anguish when the child is waked by it from dozing. The latter is distinguished by the absence of the above symptoms, by the expression, by the regular morning remissions, by the peculiar and more easily procured evacuations."

Dr. West points out most carefully the following diagnostic distinction between the two acute affections:—"The *vomiting*, which indicates approaching hydrocephalus, is often *absent*, even at the onset of remittent fever; it *soon* ceases, and is not followed by that *abiding nausea* which is so frequent in hydrocephalus. In remittent fever the bowels are often relaxed from the first, or speedily become so, and the evacuations present no resemblance to the scanty, dark, or many-coloured motions of hydrocephalus, but are watery, fæcal, and of a light colour." There is "tenderness of abdomen in remittent fever, in contra-distinction to the flat belly of hydrocephalus." "In hydrocephalus there is a distaste for drinks as well as food; in remittent fever there is a desire for drink, especially cold, even though the appetite is gone."

In hydrocephalus the temperature is seldom much increased, and there is great dryness of the surface: in remittent fever the heat of skin is pungent, and greater than in hydrocephalus.

In remittent fever the pulse is quicker, and remains quick throughout, and never becomes unequal or irregular, while its frequency is in direct propor

tion to the elevation of temperature of the surface.

In remittent fever the child makes few complaints about the head, and delirium is of early occurrence, especially at night. In hydrocephalus, on the contrary, true delirium hardly ever occurs till the advanced period of the disease, and occasionally is absent altogether.

"In remittent fever, as the name implies, there are distinct remissions and exacerbations of symptoms; whilst, though there are many fluctuations in hydrocephalus, we observe no definite period at which the symptoms remit, or are increased in severity."

Nevertheless, with the preceding minute and carefully described directions, it must not be forgotten that, in the acute form of remittent fever, cases sometimes occur which, in the onset, have many of the usual symptoms of hydrocephalus; and in such cases our diagnosis will fairly be put to the test, more especially if there is, in addition, great sympathetic disturbance of the sensorium; for the early symptoms of hydrocephalus are so little to be relied upon, as almost every symptom may occur in other diseases. As Dr. Bennett says:—"For the most part, they only indicate derangement of the nervous system and general health, and are not peculiarly pathognomonic of hydrocephalus." The symptoms common to the two diseases at the commencement are fever, quick pulse, vomiting, and cerebral disturbance; but, in the majority of instances, there are distinctive marks which I shall now endeavour to explain.

We find in hydrocephalus the fever and heat of skin are much less than in remittent fever: the pulse in both is quick; but in hydrocephalus it is often vibrating, and occasionally intermitting and irregular in its action, frequently quick at one time and slower at another: sickness, which is not a constant but merely an occasional symptom of remittent fever, is almost constant at the onset of hydrocephalus. In this latter there is much greater pain in the head, as indicated by screaming, aversion to noise and light, and contracted pupils, than in remittent fever; in hydrocephalus the anterior fontanelle is often prominent. In the one the countenance is of an anxious appearance; in the other, it partakes more of a stupid aspect. In hydrocephalus there is, in the early stage, constipation, which is persistent, and with difficulty overcome; whilst, in remittent fever, there is rather a disordered condition of the bowels, not necessarily nor generally accompanied by great constipation, but, on the contrary, at times with diarrhœa. In remittent fever the stools are those of depraved secretion, generally pale, and deficient in bile; whilst in hydrocephalus, when the bowels do act, there is a peculiar character of stool which is so characteristic as to have been called "hydrocephalic stools," of a dark, green, slimy consistence, and compared to chopped spinach, and frequently having with them small portions of hard scybalous matter, the size of a small marble. In remittent fever the disease assumes mostly a decided and well-marked remittent character, or at least has a tendency to a remittent form; whilst in hydrocephalus, although the condition of the patient varies, there is no distinct and regular periodical character to the disease.

As the case advances, if it is one of hydrocephalus, more decided symptoms will set in, so as to leave less doubt as to its nature; such as convulsion, paralysis, coma; the piercing and characteristic "cri hydrencephalique," the drawing of the head backwards, the constant and unremitting "boring" of the occiput on the pillow or the nurse's arms, the alteration in the character of the pulse, which, from being quick, now becomes slow; while, on the contrary, if it be remittent fever, the further development of the disease, and the more regular periodic nature, will aid us in our diagnosis.

It is not frequent that we shall be doubtful in our diagnosis in the typhoid form of remittent fever; for here the prostration of strength, the dull vacant aspect, the sordes on the teeth and gums, the tongue becoming dry and brown, the supine posture, will sufficiently prevent us in mistaking it for hydrocephalus.

CASE XXI.—*Illustrating the diagnosis of Hydrocephalus and Acute Remittent Fever.*

Mrs. R.'s child, male, æt. 3½. Two weeks since the child fell into a stinking tidal ditch, since which time he has not been well. His appearance is dull and heavy; constant frowning; much

inclined to sleep; has frequent sickness; pulse 120. There is not much fever, and no delirium at night; the bowels have been acted on by medicine. Being somewhat in doubt whether this attack was cerebral, or one of fever from his immersion in the ditch and residence close by it, I was induced to treat it as cerebral, from the frequent sickness, frowning, and contracted pupils, together with the absence of fever and delirium. A mercurial purgative was given, and Hydrarg. Chloridi, gr. j. every three hours, with cold lotion to the head and warm foot-bath. The powders were continued for 48 hours, and then given less frequently, and he was convalescent in a week. At the commencement the diagnosis was doubtful, but the result justified the diagnosis and treatment.

A case of acute remittent fever, coming on after a child fell into a stinking ditch, was pointed out to me in Guy's Hospital by Dr. Golding Bird.

Case XXII.—*Acute Remittent Fever, with Hydrocephalic Symptoms.*—Abridged from Cheyne's Essay on Hydrocephalus.

A boy, æt. 2, fat, lively, delicate, blue eyes, much neglected in diet.

August 29th (third day of attack).—Flushed, with quick full pulse; breathing very labouring, 76 in the minute, the diaphragm violently heaving, and the chest much raised by inspiration; alternate paleness and flushings; he is quite lethargic, and sleeps with his eyes half closed; in sleep he starts and moans; when taken out of bed he vomited some dark green bile; has a cough, not frequent, and unattended with any pain in the chest; breath offensive; belly costive; stools dark and fetid. Strong calomel and jalap purges were given.

4th day.—Seven or eight dark slimy stools, not fetid; in one there was a lumbricus. Pulse 120; flushed; still dozing, and not roused by lifting him out of bed; picks his nose and grinds his teeth. Calomel and aloes exhibited, but was vomited; then calomel and jalap.

5th day.—Grinding his teeth and lying awake; eye heavy; tongue white and dry; vomiting ceased during the night; had several hydrocephalic stools.

7th day.—Had tartar emetic given; several stools, dark green, more fetid, and mixed with bile.

9th day.—The last two days appeared to be convalescent, but his stools were again become scanty; night restless, often feebly tossing his hands in restless anxiety; skin hot; tongue dry.

12th day.—Worse; no stool for three days, nor urine for 18 hours. Pupil much dilated; supposed to be blind the last three days.

13th day.—Passed much liquid fæces, quite black and intolerably fetid; pulse 140; eye again expressive, and pupil contracting.

15th day.—Seven or eight dark green fetid stools; and convalescing.

This case is described as one of acute remittent fever, in which there was lethargy, brought on solely by a disordered state of the abdominal viscera; and, as the cathartic medicines acted, bile was poured out, and the comatose state subsided.

To me it appears rather a case of acute hydrocephalus from the first, or grafted on the fever, and, by his active treatment, recovered.

For the sake of comparing the symptoms of remittent fever and hydrocephalus together, I have drawn out the following table, that, by juxtaposition, the distinction may be more fully seen.

Remittent Fever.	*Hydrocephalus.*
Head, slight pain in.	Head, violent pain in; tossing of; drawn backwards, and bored in pillow.
Delirium at night frequent; convulsion rare—sometimes at onset.	Delirium seldom; convulsion not early—more towards end of disease; aversion to light and noise.
Easily aroused.	Roused with difficulty; stertorous breathing; squinting; paralysis in late stage.
Cry fretful, if any.	Cry peculiar, sharp and shrill; frequent sighing.
Hands usually thrown about bed (Coley).	Hands tossed towards head.

Remittent Fever.	*Hydrocephalus.*
Countenance heavy and dull; vacant expression, as of fever in adult.	Countenance sometimes anxious, sometimes dull.
"Neither knitting of brows nor pupil of eye affected."	Knitting of brows; wakefulness; pupil of eye contracted in early stage,—sometimes oscillatory, afterwards dilated.
Senses of sight and hearing often dull.	Senses of sight and hearing often acute in early stage.
Pulse quick throughout the disease.	Pulse quick, but irregular in its action and force in early stage; often beating of carotids, and pulsation and prominence of fontanelle; pulse afterwards becomes slow, but, on raising the child, again quickened.
Bowels occasionally constipated at first; frequently relaxed.	Bowels constipated, and very difficult to move.
Motions various; often clayey and deficient in bile; very offensive.	Motions peculiar and characteristic—dark green, and slimy, like chopped spinach.
Vomiting occasionally at first, but never continuous.	Vomiting early in first stage; often very constant, especially on assuming the erect posture or sitting up.
Pain often in iliac regions, particularly the right.	Pain occasionally at hypochondrium.
Abdomen in advanced stage sometimes tumid.	Abdomen drawn in in advanced stage.
Appetite mostly destroyed; will not take anything.	Appetite sometimes good; will take food.
Thirst often great from commencement.	Thirst not great in first stage; often in latter stage great avidity for constant drink.
Tongue often loaded with yellowish-white fur, in gastric form, and elongated and injected papillæ, giving it a "strawberry appearance;" red, dry, and occasionally brown, in malarial form.	Tongue white; nothing indicative.
Skin, very great heat of, sometimes equal to exanthemata or pneumonia; abdomen generally hotter than head; picking of skin, especially of nostrils, corners of eyes and mouth.	Skin, increased heat of, but not great—less than in remittent fever; afterwards becomes cold; head the hottest part.
Paroxysms pretty regular; exacerbations towards night, remissions in morning.	Varies in intensity, but without any regularity.
Age, seldom occurs under three years, more frequent after fifth year; not influenced by sex or constitution.	Age, frequent under third year; seldom after fifth year; more frequent in boys and in scrofulous constitution; hereditary.

C. *The liability of Hydrocephalus to arise in the course of an attack of Remittent Fever.*

This is a not unfrequent occurrence, and one which all bear testimony to, and which our every-day practice illustrates, occurring more especially in the course of the chronic and gastric forms.

A child, in whose family there is perhaps an hydrocephalic tendency, gets an attack of remittent fever, and, owing to a variety of circumstances, it becomes chronic; or it may be the cerebral mischief is excited during the early and more acute stage of the disease: as the case progresses, the delirium which occurs at night is changed for a degree of stupor, which gradually advances to a partially comatose condition; the patient does not, as in the delirium of fever, arouse on slight efforts, but requires every effort on our part to arouse him; nausea supervenes, or, if before present, becomes more troublesome, and is especially brought on by raising the child, so that but little is retained on the stomach; and at the same time, if the child is old enough, he complains of headache, or, if younger, there is screaming, and this screaming is of a peculiar sharp character; he frequently raises his hands to the head, which is

preternaturally hot, and often drawn backwards; and we have our attention drawn to the symptoms, which now indicate that the disease is about to be complicated with, or is passing into, hydrocephalus. Of all the symptoms, those most indicative of such transition are, "the raising the hands to the head," "vomiting," and "drawing of the head backwards," "spasmodic twitchings of muscles, and contraction of the thumbs and great toes:" these symptoms often occur before there is any tendency to coma, and indicate, perhaps, the commencement of irritation of the membranes of the brain.

Dr. Joy alludes to a symptom omitted in most descriptions of remittent fever —namely, "stiffness in the neck, and intolerance of pressure in the upper part of the spine, with a general increased sensibility of the surface of the whole body," and remarks that the first did not escape Heberden's observation, who said,—"in fevers of children the face is often drawn to one side." Dr. Joy had often seen it, but never knew it continue after the fever was cured. The increased sensibility of the surface is also alluded to by Dr. Willshire. I have repeatedly observed it in cases of cerebral irritation, and am inclined to believe that Dr. Joy's cases in which it occurred were complications of remittent fever with cerebral irritation, and that the increased cutaneous sensibility and drawing of the head to one side were diagnostic of it.

Dr. Hennis Green considers "headache is the most important symptom in tubercle in the brain;" while Rilliet and Barthez attach more importance to convulsion and headache, as a symptom of cerebral tubercle, and regard it as a more frequent symptom. Dr. West lays great stress on the persistence of vomiting: "In any case which you had thought to be one of merely gastric disorder, the persistence of vomiting must be looked upon with suspicion, and this even although the bowels act, and there be no obvious indication of mischief in the head." So, also, Dr. Duke, who says,—"he has more than once observed *vomiting* two or three times a day, with languor and altered manner, to be the *very earliest* indication of the approach of cerebral disease."

I have thus particularly dwelt upon the symptoms indicating the approach of hydrocephalus, as it is confessedly of great importance. Dr. Cheyne alludes to the fact of remittent fever terminating in hydrocephalus, and adduces cases in point, and, referring to the insidiousness of its approach in these cases, says,—"The child almost *imperceptibly slips* into hydrocephalus, and there are scarcely any acute symptoms." "We are led," says he, "to suspect some deeply seated evil of the brain from the frantic *screams*, and complaints of the *head and belly* alternating with stupor, or rather lowness, and unwillingness to be roused, and we are struck with the great irritability of stomach which exists in a degree beyond the fevers of this country, retching and vomiting being brought on by every attempt to sit up in bed."

Dr. Copland also remarks, "when it (hydrocephalus) appears during remittent fever, ... it often steals on so imperceptibly as not to be recognised until dilated pupils, strabismus, convulsion, or paralysis, and other symptoms of the advanced stage, are remarked."

Dr. Locock also particularly refers to this "tubercular meningitis" and disease of the brain in scrofulous children, and functional disturbance running into organic being likely to arise from disturbance of the digestive organs: and, again, Dr. G. Bird alludes to the occurrence of obscure brain affection being developed in the course of gastric remittent fever. Many more extracts might be adduced to shew the frequency of the development of the one in the course of the other disease.

The following cases are abbreviated from Cheyne, with a view of showing those symptoms indicative of hydrocephalus:—

CASE XXIII. *Bowel Irritation followed by Hydrocephalus.*

Female, æt. 18 months (page 192 Cheyne's Essay). Had fallen away; sickly yellow complexion; relaxed bowels; belly full.

5th day.—Sawing of right hand; comatose; lost her sight.

CASE XXIV. *Remittent Fever followed by Hydrocephalus.*

Male, æt. 2½ years (page 193). Convulsion at onset; in it passed loose clayey stool, with dark slimy streaks, and ex-

ceedingly *fœtid*. Convulsion returned; pupils dilated; face pale (ulcerous stomatitis and fever previously). Next day skin hot; tongue loaded; *never had sickness or headache;* frequent fits; pulse hurried and vibrating.

3rd day.—Pupils greatly contracted; subsultus; large *green and slimy* stools.

4th day.—Amaurotic; three green shiny stools (Hydrocephalic?).

5th day.—Death.

CASE XXV. *Remittent Fever followed by Hydrocephalus.*

Female, æt. 4 (page 196). The mother of this child and two other children had remittent fever previously, and one child had symptoms of head affection afterwards. Remittent fever followed by *vomiting* and *purging; coma* supervening; pulse 200; constant restlessness; tossing about in bed, and grinding her teeth; blind; breathing irregular; breath sickly; constipation. Death 4th day. Arterial congestion of the surface of the brain; serous effusion under the arachnoid, and one ounce in the ventricles, which were not enlarged; abdomen not opened.

CASE XXVI. *Remittent Fever followed by Hydrocephalus.*

Female, æt. 7. Three children in the same lane were affected. Continued fever, with remissions in the morning, followed by head symptoms; pupils dilated; iris paralytic; amaurosis; sighing and every symptom of hydrocephalus "*except stools*," which were fœtid and dark red brown: convulsions and death third day.

Dr. Cheyne (page 201) adduces these four cases as remittent fever terminating in hydrocephalus.

CASE XXVII. *Gastric Fever followed by Hydrocephalus.* (CASE V. of Dr. Bird. See Guy's Hospital Reports. Male, æt. 4.)

5th Jan.—Ill five weeks; pain in abdomen, with purging of dark and offensive matters: for one week there was febrile exacerbation each afternoon, *followed* by marked and *increasing stupor.*

On admission, respiration hurried and jerking; chest apparently free from disease; *head large; forehead projecting;* slight squint of eye (congenital); face pallid and puffy; tongue, white fur, red tip and edges; abdomen flaccid, not tender.

6th.—Motions dark, offensive, scybalous; urine having an abundance of urate of ammonia; expression of face is that of quiet stupor.

8th.—Drowsy appearance unchanged; *headache; slowly* answers; no fever; no intolerance of light.

9th.—Tossing about in bed; pulse 140, small: blisters behind the ears.

10th.—Sudden collapse, followed by screaming and slight convulsion; pulse imperceptible; legs drawn up; abdomen flat; gnashes the teeth; pupils largely dilated; very sluggish.

Hyd. Chloridi, gr. ii. 2dis horis.

15th.—Died comatose.

Post mortem appearances of brain.—Brain dry at surface; convolutions flattened; ventricles full of serum; fornix softened; serous infiltration at base, where arachnoid was opaque and thickened; a few tubercular deposits on arachnoid; mesenteric glands enlarged; all other viscera healthy.

Treatment.—Head shaved; cold lotion and leeches to mastoid process.

Emp. Lyttæ pone aures; calomel; and fever mixture.

CASE XXVIII. *Hydrocephalus supervening upon Chronic Remittent Fever.*

R., female, æt. 7 years, pale, anæmic, deficient in growth, and very delicate, with an hereditary tendency to tubercular disease: had formerly lived in the country, but latterly in London: had been ailing for some time, at one time better, at another worse; her ailment being stated as fever of an intermittent character, when, having been somewhat better for a day or two, and not sufficiently ill to keep her bed, in the afternoon, without any premonitory symptom, she was attacked with convulsion which lasted for some hours: this passed off, but returned again toward night, and she died comatose the following morning. No inspection allowed.

This case was communicated to me by a friend, and I understand there was no suspicion or symptom of cerebral disease just before the convulsion, but she had been the subject of strabismus since two years of age.

D. *Hydrencephaloid disease supervening upon Chronic Remittent Fever.*

Besides the occurrence of true hydro

cephalus in the course of remittent fever, symptoms stimulating hydrocephalus may arise from sympathy with the gastro-intestinal irritation, and not depending upon tubercle or irritation of the brain. Dr. Pemberton has referred to this:—"In very young children bowel irritation is so great as to produce convulsions, and during the fit it is totally impossible to determine whether the source of convulsion be the head or intestines." So, also, Dr. Locock:—"In chronic remittent fever the child is often reduced by bold treatment, and symptoms resembling the hydrencephaloid affection of Gooch and Marshall Hall are not unlikely to occur." It is in the more protracted cases of remittent fever, accompanied by much gastro intestinal irritation, that these symptoms more frequently occur; they will be observed arising under different circumstances to hydrocephalus, and although great irritability, aversion to light, and noise, and even convulsion may be present, together with increased heat of the head, yet we usually find the countenance of the child pale and blanched, its surface cool, the fontanelle depressed, and if it is placed in the erect posture indications of syncope appear; it is, also, usually, accompanied by a relaxed state of the bowels, in contradistinction to the confined condition of bowels, and the peculiar motions of hydrocephalus, It is of the greatest importance to diagnose this state of pseudo-hydrocephalus, as upon our right judgment the treatment and the recovery of the child will mainly depend.

Statistics.

But slight information can be gained from the statistics which we possess of remittent fever, or fever in general in children. I have, however, made such selections from the annual reports of the Registrar-General as bear upon the subject.

We find, in a summary of the London returns of mortality for the eleven years 1838 to 1848, that the deaths from "Infantile Fever," "Remittent Fever," and "Typhus Fever," were as follows:—

Table I.

	1838.	1839.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.
Infantile fever . . .	11	18	22	23	17	25	26	32	55	48	45
Remittent fever . . .	24	29	29	16	17	23	33	32	71	96	96
Typhus fever . . .	4078	1819	1262	1151	1174	2083	1696	1301	1796	3184	3569

But, of the latter two diseases, we require to know how many have occurred under the 10th year of age, or, in other words, in children.

Of this the Annual Reports do not furnish any very substantial information; but the following I have gathered from them:—

In the 1st Annual Report remittent fever is not mentioned, either in reference to adults or children.

In the 2d Annual Report it is mentioned—not, however, alluding to ages.

In the 3d Annual Report (mortality for 1839) it alludes to only *one* (male) death by remittent fever, which occurred in Manchester, between the ages of 5 and 10 years; also 1 male, from ague, under 1 year: but we have more information respecting typhus among children, for Table F shows that—In Manchester, the mortality from typhus was 51 under the 5th year; in Liverpool, 46; in Birmingham, 47; and of these respective numbers, Manchester 26, Liverpool 27, Birmingham 29, were under the 3d year.

This shows that there is a fever registered as "typhus" among children which has a high rate of mortality.

In the 4th Annual Report (mortality for 1840) we find the following remark:—"Infantile remittent fever is, according to some pathologists, a sub-inflammation of the intestinal tube." And (page 360), in the Summary of the Weekly Tables of Mortality in the Metropolis for 1841, we learn that "Ague

and remittent fever are included under the head of typhus." And again, in the 6th Annual Report, we are told that "remittent fever" only alludes to those cases similar to the remittent fever in tropical climates, and so rare in England."

I think it doubtful if the cases registered in the subsequent reports as remittent fever under 10 years of age, or even above that age, are in accordance with the before-mentioned opinion of the Registrar-General; but that, under the heads of "Ague," "Remittent Fever," "Gastro-enteritis" (which is a very fatal disease among children, and often the cause of death in remittent fever), "Worms," and "Mesenteric Disease," are included many cases commencing as and analogous to infantile remittent fever, but which have become complicated, and terminate in the secondary disease.

In the 5th Annual Report (mortality for metropolis 1842), table, page 272, 15 deaths are recorded under 10 years of age from remittent fever; consequently they may be termed infantile remittent fever. Of these, 8 were males, 7 females; and 6 were under 3 years: 5 were from 3 to 5 years (this the most frequent), 4 were from 5 to 10. There are also recorded 348 deaths from typhus under the 10th year. Of these, 173 were males, 175 females, and 26 were under 1 year; 75 were from 1 to 3 years; 106, from 3 to 5 years (this the most frequent); and 141, from 5 to 10 years; the deaths in the two sexes being about equal; but the 3d to 5th year, as in remittent fever, being the highest in the rate of mortality.

At page 377 in the 5th Annual Report is a note:—"2 males, aged 3 months and 7 months; and 3 females—2 aged severally 1 year, and 1 aged 4 years—are included under the head of "Digestive Organs," but died of "infantile fever."

In the 6th Annual Report (page 510), referring to the mortality for 1842, a note says:—"Infantile remittent fever, 6 males and 6 females—6 under 1 year, one 1 year, 4 respectively 2 years, and one 4 years, included under the head of 'Worms.'"

In the 7th Anuual Report (mortality for metropolis 1843—table, p. 46, and following), 9 male deaths are recorded from remittent fever at all ages; and of these, 5 are under 5 years of age; 8, under 10. Females: 13 at all ages; 6 under 5 years; 8 under 10; which makes, male and female, 32 deaths at all ages; 11, under 5 years; 16, under 10 years.

There are also recorded 479 deaths from typhus fever under 10th year. Of these, 232 were males, and 247 females.

Table II.

	Under 1 year.	1 to 3 years.	3 to 5.	5 to 10.	
Males	25	56	55	96	= 232
Females	23	50	76	98	= 247
	48	106	131	194	= 479

Thus giving rather a preponderance to the female sex.

In this report we are again told that remittent fever only alludes to the fever as it occurs in the tropics; but, from a notice of the ages, I doubt not that cases of genuine infantile remittent fever have been reported and placed under this head.

The following tables have been drawn up from the 5th and 7th Annual Reports of the Registrar-General, with a view of showing the mortality from various diseases of children which may be mistaken for infantile remittent fever.

In the 5th Annual Report (page 288) table of the mortality for 1840 in 24 town districts in the following diseases of children:—

TABLE III.

		Under 5.		5 to 10.		
		M.	Fem.	M.	Fem.	
Feb. Remittens.	Under 1 yr., 2 1 to 3 yrs. 9 3 „ 5 „ 7	6	12	4	1	None over 10: hence they must be infantile remittent fever.
Hydrocephalus.	Under 1 year, 394. 1 to 3 yrs. 539 3 „ 5 „ 206	617	522	110	91	Then much diminishing.
Ague		5	3	2	3	Only six above 10.
Gastro-enteritis.		565	428	53	32	Far most prevalent under 3d year.
Tabes mesenterica		19	13	3	1	Only 7 registered above 10.
Worms . . .		28	37	7	6	Only 2 above 10.
Dentition. . .		682	600			
Consumption .		935	918	181	176	
Typhus . . .	Under 1 yr. 85 1 to 3 yrs. 283 3 „ 5 „ 212	281	299	154	177	

In the 7th Annual Report (mortality for the metropolis 1843) :—

TABLE IV.

		Under 5.		5 to 10.		
		M.	Fem.	M.	Fem.	
Feb. Remittens.	Under 1 yr. 2 1 to 3 yrs. 5 3 „ 5 „ 4	5	6	3	2	1 male above 10; 5 females „ „
Hydrocephalus.	Und. 1 yr. 580 1 to 3 yrs. 743 3 „ 5 „ 257	956	624	115	62	But few above 10.
Ague	. . . . .	4	5	2	1	5 males above 10; 5 females „ „
Gastro-enteritis.	. . . . .	236	37	192	20	
Tabes mesenterica	. . . . .	224	160	17	21	5 males above 10; 21 females „ „
Worms . . .	. . . . .	12	9	3	1	None above 10.
Dentition. . .	. . . . .	507	448			
Consumption .	. . . . .	446	517	100	118	
Typhus . . .	Under 1 yr. 48 1 to 3 yrs. 106 3 „ 5 „ 131	136	149	96	98	

In the 7th Annual Report (mortality for the metropolis 1844—see pages 54 and following) :—

TABLE V.

		Under 5.		5 to 10.		
		M.	Fem.	M.	Fem.	
Feb. remittens .	Under 1 yr., 2 1 to 3 yrs. 14 3 „ 5 „ 9	12	13	3	Nil.	2 males above 10; 3 females „ „
Hydrocephalus .	Under 1 yr. 536 1 to 3 yrs. 754 3 „ 5 „ 235	865	660	84	89	33 males above 10; 32 females „ „
Ague	. . . . .	5	2	2	Nil.	9 males above 10; 10 females „ „
Gastritis . . .	} {	7	9	4	1	
Enteritis . . .	} {	191	162	22	25	
Tabes mesenterica	. . . . .	229	178	17	16	15 males above 10; 7 females „ „
Worms . . .	. . . . .	13	19	3	Nil.	1 male above 10; no female „ „
Dentition . . .	. . . . .	392	332	2	Nil.	
Consumption .	. . . . .	394	384	79	115	
Typhus . . .	Under 1 yr. 43 1 to 3 yrs 123 3 „ 5 „ 115	143	138	106	120	

The preceeding extracts and tables show the inaccuracy of the classification of the disease, and of the registration of the cause of death; they, however, tend to confirm opinions which are generally admitted,—namely, that infantile diseases, and among them infantile remittent, or fevers of any type, in children are more fatal in the metropolis than in the country, but that the mortality is greater in large manufacturing towns than in London, and in low marshy, than in high and well-tilled country districts.

It also appears that among the registered deaths, more females die of remittent fever than males; the same also applies to typhus in children (the difference, however, is so slight, that no deduction can be drawn from it); that more female children die of consumption than males, whilst more males die of hydrocephalus than females; that the greatest amount of mortality from hydrocephalus is under the third year, whilst the greatest mortality from remittent fever (under 10 years of age) and infantile typhus is from 3 to 5. This circumstance is of some service in our diagnosis and prognosis, for we may, *cæteris paribus*, consider hydrocephalus the disease of early, whilst remittent fever is rather that of advanced childhood; so likewise, on the supervention of cerebral symptoms in any given case of remittent fever, we should more fear the development of hydrocephalus in the male than in the female, and, on the contrary, we should fear phthisis more in the female than in the male child.

The great amount of mortality registered, even in the very early age of infancy, from typhus fever, would lead us to doubt whether there has been sufficient accuracy in detecting the cause of death, and whether some of the affections of childhood, in which fever is a prominent symptom (for instance, pneumonia) and in which a typhoid state has supervened, have not been registered under that term. Such high rate of mortality does not accord with the statements of authors, nor with my own experience, in fever of any type among children. I would suggest, therefore, that in future, fever occurring in children should be registered merely as "Infantile fever, giving the age, as "2 to 5," "5 to 10," and not specifying remittent or typhus under that age.

Note.—It would be curious and satisfactory to learn if remittent fever often occurred, and if so, the mortality in the various large establishments for children in this country, as the asylums, pauper farms, &c.

In the Fifth Annual Report, we find that in Norwood Pauper Asylum, out of 101 deaths in 5 years, there were only three from remittent fever, and this in

an establishment of upwards of 1,000 children. The situation is healthy, being high and dry.

A consideration, however, of the mortality, which is slight in proportion to the frequency of the disease, does not enable us to draw any conclusion as to the more frequent time of its occurrence, or the proportion of fatal cases; for, as Caspar observes, "Where there are the fewest deaths, there is often the greatest amount of illness," a remark applying especially to this disease, which is often epidemic, and seldom terminates fatally, except in the production of other disease.

In the Medical Report of the Infirmary for Children, 1846-7, the relative number of cases at the respective ages were as follows:—

Table VI.

	Under 1 Year.	2	3	4	5	6	7	8	9	10	
Cases of Remittent Fever	13	24	23	28	24	17	11	15	9	1	= 162
„ Fever . .	14	34	21	28	28	19	17	16	15	11	= 203

thus showing the greater number of cases occurred in the 4th and 5th year.

In a table of cases, amounting to upwards of 100, which have been under my own care, the most frequent age was from the 5th to the 7th year.

Dr. Bateman's Report, previously alluded to, and which extends over a period of nearly twelve years,—viz., from 30th November, 1804, to 31st August, 1816, shows the relative number of cases occurring in the four quarters to be as follows: in the autumn quarters there were, 128; in the summer, 112; in the spring, 92; and in the winter, 91 cases; thus showing its greater prevalence in the autumn.

Prognosis.

The prognosis of remittent fever is favourable, the concurrent testimony of all authors being that it is rarely fatal; and when it is so, it is from one or other of the affections which arise in its course, as ulceration of the bowels, hydrocephalus, phthisis, or mesenteric disease. Hence, when fever occurs in scrofulous children, it is more likely to terminate in one of the three last named affections, and the prognosis would then be less favourable. In the simple and the acute forms, it usually terminates in convalescence; those, however, who see it among the poor, will occasionally meet with a fatal case in the typhoid form of the disease: in the chronic and gastric forms a fatal termination is rare, except by one or other of the complications.

In judging of any individual case, we must be led to form our opinion by the concomitant circumstances,—as the previous health of the child, the habitation, cleanliness, and ventilation, as we have frequently noticed the almost sudden improvement in fever in a child, when it has been removed from its own badly ventilated and unhealthy home, to the wards of an hospital, and its skin got into a clean state.

Indications of an unfavourable termination are,—the fever assuming the typhoid form, the tongue becoming dry, cracked, and brown; severe abdominal pain increased on pressure; or, in fact, those symptoms which would indicate the supervention of cerebral and abdominal mischief; and these have been so fully entered upon that it is unnecessary to recapitulate them. The tongue becoming clean and moist, the excretions becoming more natural, the paroxysms of fever being of less duration, the skin becoming cool, and gently perspiring, are indications of returning health.

In Rilliet's and Barthez's observations, 29 terminated fatally out of 111 cases; Dr. West only refers to two fatal cases, and attributes the large amount of fatal cases by Rilliet and Barthez to the unfavourable circumstances in which patients are placed in the Hôpital des Enfans.

The prognosis appears to be very unfavourable when the disease occurs in hot climates, for Dr. Copland states, "that many children born of European parents in hot climates, are cut off by it before they reach their sixth or seventh year;" and Dr. J. Bird also remarks, that it proves "so fatal to infants and children of newly arrived European regiments."

In Dr. Golding Bird's report of 86

cases, there are only two reported to have terminated fatally,—one by hydrocephalus, and one by phthisis; and in the cases which occurred in his ward, at Guy's Hospital, during the spring and summer months in 1849, there was not a fatal termination: the same remark also applies to the cases under Dr. West, at the Infirmary for Children, during the same period.

In my own practice I have only had three fatal cases,—one a typhoid case, one terminating in cancrum oris, and one in mesenteric disease. The first was a genuine case of malarial fever, the second occurred after measles, and was one of a gastric intestinal nature, and in the last, all trace of the original affection was gone.

Underwood has remarked, "that the disease is remarkable for being always devoid of danger."

Dr. Locock does not, however, quite agree with him, and says, he has never met with it fatal in the acute form; when death has occurred it has been from dysentery, or gastro-enteritic inflammation.

Drs. H. Davis and Willshire are also of opinion that "simple remittent fever is rarely fatal;" and certainly even the severe typhoid cases, requiring wine, and a free use of stimulants, we have seen recover, although after a long and tadious course.

Although it does not coincide with the statements of the Registrar-General, I believe that fever occurring in a healthy child is very rarely fatal.

Two symptoms are alluded to by Coley as auguring unfavourably,—viz., "a discolouration and separation of the skin" in the advanced stage of the disease; they are not mentioned by other writers, nor have I ever met with them: perhaps they may be classed with petechia, as indicating a low state of vitality.

The following table, compiled from some of the Weekly Bills of Mortality, is interesting, in showing the more frequent fatal termination of fever in children at one portion of the year; that brain mischief is the more general cause of such fatal termination; and that under the different heads of "Remittent fever," "Infantile fever," and "Typhus," are placed cases, which are of the same character, and essentially the same disease:—

TABLE VII.

Week ending.	Sex.	Age.	How registered.	Duration.	Fatal termination.	Duration.
1850 .						
Mar. 16th,	M.	6 months	Inf. remittent fever.	2 months.	Hydrocephalus.	14 days.
April 6th.	M.	14 years	„ Rem. fever.	3 weeks	Congestion of brain.	6 days.
„ „	M.	7 „	„ Rem. fever.		With mesenteric disease.	
„ 13th	F.	6 „	„ Rem. fever.	14 days.		
„ „	M.	4 months	Do.	10 days.		
„ 27th	F.	7 years	Tubercular dropsy 3 months, rem. fever	8 days.	Hydrocephalus.	24 hours.
May 4th .	F.	4 „	Remittent fever.		Bronchitis and Phthisis.	
„ „	M.	3 „	Remittent fever.	13 weeks.	Bronchitis 2 weeks.	
„ 11th.	F.	1½ „	Inf. fever.	3 months	Convulsion.	8 hours.
„ „	M.	8 weeks	Inf. rem. fever.	3 weeks.	Convulsion.	1 day.
„ „	M.	5 months	Do.	3 weeks.	Congestion of brain.	6 days.
„ „	M.	2 years	Remittent fever.	8 days.	Congestion and effusion of brain.	3 days.
„ „	F.	4 „	Remittent fever.	14 days.	Pneumonia.	6 days.
„ 18th.	F.	4 „	Remittent fever.	7 weeks.		
„ „	M.	6 „	Remittent fever.	15 days.		
„ „	F.	7 „	Do.	5 weeks.	Convulsive fit.	2 hours.
„ 25th.	M.	?	A young boy of intermittent fever.			
June 1st .	F.	8 years	Fever.	3 weeks.		
„ „	F.	2 „	Inf. rem. fever.	7 days.	Meningitis.	9 days.
„ 9th.	M.	2 „	Remittent fever.	8 days.	Encephalitis.	5 days.
„ „	F.	1 „	Remittent fever.			

Post-mortem Appearances.

Few as are the recorded post-mortem examinations, they tend to confirm our opinion, that, whether primarily or secondarily—*i. e.*, whether the disease has arisen from a direct exciting cause of gastro-intestinal irritation, or from malarial influence—lesions of the gastro intestinal mucous membrane are very frequent, and are often the immediate cause of death.

Pemberton has given the account of the examination of a case of remittent fever. "The intestines were exceedingly distended, and the mesenteric glands a little enlarged, but no inflammation of peritoneum, bowels, or other viscera, existed, nor any effusion into the peritoneum."

According to Dr. Joy, this enlargement of the mesenteric glands and inflammation of intestines was noticed by Hoffman.

Dr. Locock alludes to softening and abrasion of the mucous membrane; and where there have been dysenteric symptoms, ulcerations in the cœcum, colon, ilium, and rectum, have been observed

Rilliet and Barthez's conclusions, drawn from twenty-nine fatal cases, are—

"1st. That the lesions of Peyer's folds, isolated follicles, and mesenteric glands, are the same as in the adult; but the ulcerations were generally smaller, fewer, and less deep.

"2d. That the form of the alterations of the folds, in a very large majority of cases, is that described under the name of 'plaques molles.'

"3d. That ulceration did not necessarily follow inflammation, which might terminate in resolution.

"5th. That cicatrization proceeded with rapidity (they had seen it complete on the thirteenth day: at the third month the cicatrices were still manifest).

"6th. That ulcerations of the membranes are rare (once they found the peritoneum perforated; and in another instance the lesions of the glands approached true gangrene).

"7th. That the alterations in the spleen are far from constant.

"8th. That the blood is oftener fluid, or in blackish clots, and the vessels are often coloured, as of red wine.

"The alterations in other organs were—

"The pia mater was injected in those who died from the seventh to the twenty-first day; the subarachnoid tissue was infiltrated; the ventricles did not contain any great amount of fluid.

"Twice the heart had a degree of softness without cadaveric putrefaction being far advanced.

"The liver was often increased in volume; occasionally was pale and red: the character of the bile offered nothing constant.

"The kidneys were much congested in infants.

"In the spleen, when any alteration existed, it consisted principally in an increase of size, and softening of its tissue."

Dr. West mentions enlargements, tumefaction, and ulceration of Peyer's glands, as one of the most frequent morbid appearances. The changes these glands are found to undergo are more advanced and more extensive, in proportion to their nearness to the ileo-cœcal valve. The mesenteric glands are swollen, enlarged, of a deep red colour, and manifestly increased in vascularity; while the softened state of the spleen, gorged condition of the lungs, and congestion of the membranes of the brain, are appearances in both diseases —viz., infantile remittent fever, and continued fever in the adult.

Dr. J. Bird, in an account of the disease as he met with it in India, considers it analogous to the tropical remittent of adults, and remarks, "that the post-mortem appearances are the same, —as morbid enlargement of the muciparous and mesenteric glands, congestion of the liver, softened and enlarged condition of the spleen, and vascularity of the mucous membrane of the stomach and intestines: engorgement of the lungs, congestion of the brain, and serous effusion into the ventricles, are observed after death." It happened either as a primary disease, caused by malaria, or as a secondary one proceeding from gastric irritation produced by cold, damp weather, improper food, and teething. Like other fevers, he has found it terminate in mesenteric enlargement and marasmus, or occasionally in albuminous nephritis, with effusion into the abdomen, and anasarcous swelling of the legs.

Dr. Löschner, physician to the Children's Hospital at Prague, in eight fatal cases says there was a greatly enlarged and highly injected state of the mesenteric glands, more constant than ulcerations of Peyer's, and on this builds an

hypothesis that what is called typhoid fever is acute scrofula.

When fever proves fatal by its complications or sequelæ, as hydrocephalus, phthisis, mesenteric disease, or cancrum oris, the post-mortem appearances peculiar to these diseases will be noticed; and as these are not essential to remittent fever, their description is not required in this place.

The two following cases, with which I have been favoured by Dr. West, will serve to illustrate the post-mortem appearances in this disease.

CASE XXIX.—*Acute Remittent Fever, terminating in Cancrum Oris.* (Communicated by Dr. West.)

A boy, æt. 8, was attacked by febrile symptoms, October 1st: treatment began Oct. 8th; delirium about Oct. 17th, and was a prominent symptom throughout.

26th.—There was swelling of face, the child being then much exhausted; and there was ulceration of the left cheek, which extended, and was accompanied by blackening of the surface of the cheek, but not going on to actual perforation, and terminated fatally November 1st.

Post-mortem Examination.—In addition to the ulceration of the cheek, the blood was generally fluid; the right lung was healthy; the left had its lower lobe in the first stage of pneumonia, and partly in the second.

The mesenteric glands were enlarged, softened, dark, livid, and congested. In the whole lower third of the ilium there were enlarged Peyer's glands; and for about eighteen inches of the lower end there was ulceration of each. Close to the ileo-cæcal valve, and partly involving it, there were two large oval, deeply ulcerated patches, and a small vascular ulcer a little below the cæcum.

The spleen was dark, soft, and large.

CASE XXX.—*Remittent Fever, with Head Affection, becoming Typhoid, and terminating fatally in Gangrene of the Left Cheek.* (Communicated by Dr. West.)

M. J., female, æt. 6½; resides in the New Cut.

February 20th, 1846.—Had been ill three days with constipation and pain in the head. On the 22d the case had assumed much more distinctly the character of severe remittent fever, the symptoms being referred to the abdomen quite as much as the head; there was more oppression of the intellectual powers than usual, and less tendency to diarrhœa, but the head grew much clearer under a generally stimulant plan of treatment, of which, for some days, wine formed a part, and which included the æther and acid mixture of Steiglitz. A blister to the abdomen was followed by marked diminution of the abdominal pain and tenderness, and up to the 6th of March the patient improved; her tongue began to regain moisture, and the general state grew more and more improved.

March 8th.—The child considerably better; but there was considerable swelling on the left side of the cheek, being about the angle of the jaw, and the skin was rather red and shiny; this had been noticed by the father on the evening of the 6th: inside the mouth there was evident gangrene, though not extreme, and the first lower molar was laid bare, and almost dropped out. Hydrochloric acid was applied four times, and the chlorate of potass freely given internally; but the gangrene extended, and the child died on the 15th, at 1 A.M. There had been difficulty of deglutition, but no respiratory disturbance or croupal breathing at any period.

Thirty-eight hours after death.—Weather temperate, but wet.—Gangrenous odour horrible; child extremely emaciated; nearly the whole left cheek was swollen, of a dark, livid hue, and pitted slightly on pressure; the gangrene involved chiefly the lower lip; the slough had not separated—was altogether about the size of a crown piece, and the whole thickness of the cheek was affected; the cellular tissue was infiltrated by a sanious dirty serum; the facial artery was plugged by a clot.

The œsophagus coated with moderately firm yellow, false membrane.

The trachea was free from disease; but some ill-formed patches of false membrane lay on different parts of the larynx.

The stomach was quite healthy, as were the abdominal viscera; the mesenteric glands in the neighbourhood of the caput coli were of an intensely red colour—seemed swollen and infiltrated; the whole tract of intestine was examined, and, with the exception of the last three feet of the ilium and the cæcum, was found healthy. In the ilium several patches of Peyer's glands were ulcerated: the ulcers, however,

were not numerous, nor extensive, nor deep; their edges were not sharp; there was no great vascularity about them, but a small yellow slough at the bottom of a few of them. It appeared as if the disease in the intestine was not extending; but there was not power enough for its reparation In the cæcum were several solitary ulcers in a similar condition.

In the chest was no disease. Lungs pale, bloodless, rather than congested; heart pale, containing a small black coagulum in its left auricle, which extended for some distance into each pulmonary vein; also a small fibrinous coagulum in the right auricle.

Treatment.

The treatment of infantile remittent fever depends on the form which we have to deal with.

(1.) Where there has been evidence of its arising from improper or over feeding, a brisk purgative will be necessary if the bowels are confined; and for this purpose, calomel, combined with rhubarb or jalap, or by itself, followed by a senna draught, or castor-oil in a younger child, may be given.

After free action of the bowels has been produced, a simple saline mixture, composed of liq. ammon. acetatis, with spirits of nitre, or the solution of citrate of potass, should be given three times a day. If sickness or nausea are present, the effervescing mixture is preferable, to which a drop of the dilute hydrocyanic acid may be added; generally, however, if there is no nausea, I give the sesquicarbonate of soda, in doses of five to ten grains, three times a day in any vehicle. The bowels may be afterwards regulated by a combination of hyd. c. cretâ with rhubarb, given occasionally.

In some cases the commencement by an emetic is useful, as by this means we more effectually clear out the entire intestinal canal.

(2.) In the mild form of the disease the preceding plan of treatment may be adopted, with the exception of substituting for the brisk purgative two or three grains of Hyd. c. Cretâ, followed in the morning by a drachm or two of castor oil.

(3.) The acute form, when uncomplicated, does not require anything further in the shape of medicine, as I believe it is the best rule not to use any active remedies unless a clear and sufficient indication calls for them.

(4.) When the disease is epidemic, and can be fairly traced to malaria, it will be our first object, as far as possible, to remedy these conditions (remembering that the disease once fairly established cannot be cut short, and our object is to guide the patient safely through it) by having the room well ventilated, clean, cool, and free from extraneous articles of dress: these precautions are equally necessary in all forms of the disease where the character or habits of the patient's friends require it.

The warm bath should be used about 100 to 110 degrees Fah., and repeated every or every other night; it acts not merely by cleansing the skin and promoting its healthy functions, but also by quieting the nervous system, as frequently I have seen fractiousness and irritability relieved by it, and a more refreshing sleep follow its use. The soda mixture, or the other salines, may be given, and, as soon as the tongue becomes clean, a mild bitter, as the infusion of calomba with soda, or quinine may be substituted. Dr. Golding Bird, as soon as the remissions are well marked in this form, gives the disulphate of quina, in two grain doses, as an ante-periodic remedy: latterly, he has used the sulphate of bebeerine instead of quinine with, I believe, much success. Quinine in smaller doses, simply as a tonic, is very useful; perhaps the more strictly malarial is the attack, and in proportion as it is free from gastric disturbance, the more decidedly useful is quinine.

(5.) If obstinate constipation is present a repetition of the purgative must be had recourse to. Drs. Butter, Pemberton, and Locock, allude to the fact of most powerful and repeated purgatives being required. Pemberton relates the case of a child, aged three years, taking twelve grains of calomel and scammony, and twelve grains of the extract of jalap, but at the same time cautions that they should not be carried to a great length, but merely to remove the contents of the bowels. It is but rare such powerful purgatives are required; and, as Sydenham remarks, we must be careful lest "Sæpius ægro non nisi morte medebinur."

(6.) If diarrhœa is present the chalk mixture may be given, to which a small quantity of syrup of poppies, or one or two drops of tincture of opium, may be added. If at the same time the motions are clayey, and deficient in bile, two or

three grains of Hyd. c. Cretâ, or the Pulv. Sodæ Compos. of the Guy's Pharmacopœia, in four or six grain doses, may be given every or every other night. When there is pain, increased on pressure, in the iliac regions, or in any part of the abdomen, and the diarrhœa assumes the character of dysentery, repeated hot linseed meal poultices should be applied, and may generally be relied on for relief. The mustard poultice might also be tried in the first instance; and in some few cases it might be advantageous to apply two or three leeches or more, but I have never found it necessary in my own practice. The Hyd. c. Cretâ, gr. ½, or gr. j., with Dover's powder, gr. 1½ or 2½, may be given at bed-time, or repeated twice a day, according to circumstances, together with the chalk mixture. The starch enema, with the addition of half a drachm of syrup of poppies, or four minims of the tincture of opium, is a very useful remedy in these cases.

(7.) In the chronic form, where the secretions are depraved and the appetite bad, the combination of the sulphate of potass with rhubarb is a most useful aperient; and the Mistur. Rhæi Comp. (P. G.),—namely, a combination of rhubarb, soda, and calomba, is often of the greatest service. If a mild mercurial alterative is required, Hyd. c. Cretâ with rhubarb may be given every other night.

Drs. Locock and Willshire speak highly of the mineral tonics in this form of disease. Where stomatitic or aphthous ulcerations are present, the chlorate of potass, in five grain doses, three or four times a day, is an admirable remedy, applying also to the part a weak solution of the nitrate of silver, and using a lotion of borate of soda.

(8.) If worms are present, a brisk purgative of calomel and scammony may be given to dislodge the long thread worms, or an enema of lime water for the small thread worm; but, as they depend on the deranged condition of the mucous membrane of the intestines, the object of the treatment will be to remedy that deranged condition, and as it is restored to a more healthy state, and convalescence becomes established, the worms will usually disappear. The compound rhubarb mixture, or the infusion of gentian, may be given two or three times a day.

(9.) For the slight bronchitic symptoms frequently present, the addition of ipecacuanha wine to each dose of the mixture is all that is required. If acute bronchitis or pneumonia should supervene, they must be treated according to general rules. Frequently the indications of circumscribed pneumonia, as shown by dulness and slight crepitation, exist: for them nothing in general is required beyond desiring the nurse to turn the patient frequently. This has been pointed out by Dr. G. Bird, who considers it arises from congestion, and usually vanishes as the patient recovers.

(10.) Should indications of tubercular disease of the mesenteric glands or of phthisis develope themselves, they must be treated accordingly: for the former the liquor potassæ internally, and counter-irritants, as the iodine ointment externally, should be had recourse to; for the latter I have not much to recommend, except perhaps, when the stomach will bear it, the regular and continued use of cod-liver oil. In impaired general health, after gastric disturbance with fever, I have seen it of the greatest service.

(11.) The cutaneous affections which sometimes are present require no modification in treatment. The more chronic skin diseases must be treated according to the rules laid down for such disorders: we may remark, however, that they will be chiefly benefited by those means which tend to improve the general health.

(12.) The typhoid form of this disease will require more general support, and ammonia, with the infusion of serpentary, quinine, or ammonia and decoction of bark. Drs. Locock and West speak highly of a mixture of æther and hydrochloric acid (Steiglitz's mixture), but of this I have had no experience. Wine, beef-tea, arrow-root, animal jellies, will also be required. If the patient gets no sleep, a few grains of Dover's powder may be given at bed time with great advantage. Care should be taken that the bladder is not allowed to become distended; if there is retention or involuntary discharge of urine, the catheter should be passed. If bed-sores occur, the liquor plumbi diacetatis may be applied, by means of a camel's hair brush, every morning, and the part dressed with simple cerate or a weak solution of nitrate of silver (gr. ij. to ℥j.), or sulphate of zinc (gr. iv. to ℥j.) may be used in a similar manner.

(13.) For the sympathetic cerebral symptoms that are usually present, all that is required is to have the hair cut

close or shaven, and apply the cold spirit lotion; for, as Dr. G. Bird says, "the delirium and great irritability are part of the disease," and require no active interference. Cheyne, however, recommended antimonials with calomel in those cases of remittent fever where the sensorial functions are much attacked, as also in the commencement of febrile attacks of a less definite nature, which are liable to degenerate into hydrocephalus, and considered that, if more frequently used, the termination in hydrocephalus would be less frequent.

(14.) If symptoms denoting more than functional disturbance of the brain arise,—for instance, pain in the head, constant vomiting, and nausea,—it will be advisable to apply a few leeches, either to the temples or the mastoid processes, and give mercurials, as small doses of calomel or Hyd. c. Cretâ two or three times a day, or oftener if the cerebral symptoms are urgent, avoiding all undue irritation of the bowels; for hydrocephalus supervening on remittent fever will not bear the more antiphlogistic remedies required when it arises idiopathically: in short, although the head affection requires our attention more than the original disease, inasmuch as it is more fraught with danger, we must always remember that the patient's health has been in some measure exhausted by the previous disease. The cold lotion, or a bladder of ice, should also be applied to the head, the room kept dark, cool, and quiet. If a convulsion should occur, the child may be placed in the warm bath, and at the same time a douche of cold water applied to the head. Sinapisms to the soles of the feet or calves of the legs may also be had recourse to.

(15.) When the head symptoms are insidious, and loss of blood contra-indicated, a blister on the nape of the neck, or the application of Acetum Lyttæ, afterwards dressed with the Ung. Hydrarg. Mitius, should be used, with small doses of mercurials, endeavouring to avoid irritation of the bowels. Among counter-irritants, which are very serviceable in proportion as the symptoms are chronic, is the repeated use of the tartar emetic ointment to the scalp, which is sometimes attended with marked benefit.

(16.) When we consider the cerebral symptoms present depend not on any amount of activity or inflammation, but rather on want of power, denoting what has been termed "hydrencephaloid disease," the remedies before mentioned must on no account be had recourse to, as they would aggravate the mischief, but a few drops of spirits of Ammon. Fœtida may be given three or four times a day; ammonia in solution, or a small quantity of wine, may be required, and the free use of nourishment. In these cases of exhaustion a grain and a half to two grains of Dover's powder at bed-time will be found of the greatest service

(17.) In general, a light diet, as cold water, toast water, or barley water to allay the thirst, thin arrow-root, or milk and water, is all that is required in the simple and acute forms in the early stage of the disease; afterwards beef tea, veal, mutton broth, light animal jellies, isinglass dissolved in milk and water, may be given: in the typhoid form they are required earlier, and in a more nutritious state,—the addition of wine to the jelly, or diluted with water, to the amount of one, two, or more ounces in the day. By degrees, light bread pudding, bread and milk, fish, may be given; but the return to ordinary diet should be postponed for some time, as relapses are sometimes produced by it, or the patient rising too soon from his bed and mixing with the other members of his family.

(18.) As the patient improves, nothing tends so much to restore his general health and strength as a change of air, particularly sea air; and in fact, when the disease has arisen, as it most usually does, from malaria, or general endemic causes, this change should be had recourse to earlier, as it not only affords means for the recovery of health, but also removes the child from the direct source of disease.

(19.) In conclusion, I have but *sketched* out the plan of treatment in head affection supervening on remittent fever, but would remark that on a correct diagnosis the success of our treatment depends; that it is of the utmost importance, when our diagnosis is determined, to act energetically in the treatment of inflammatory affection of the brain; and it is equally important to avoid those energetic measures in sympathetic irritation, or in *pseudo* hydrocephalus.

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