Symptoms.

Invasion.—The onset is quite sudden; often a person may have been going about feeling apparently in the best of health, and is suddenly seized with pains in the joints and limbs and with shivering and fever, so that he is immediately obliged to take to his bed. The onset may be by actual rigors, but more often by chills and a feeling of cold down the back; occasionally there may be actual vomiting accompanying the chills and rigors. The pains are usually very severe, and are felt in the back, in the muscles and joints, and especially characteristic are pains in the wrists and ankles and the small bones of the hands and feet.

The onset is also accompanied in a small proportion of the cases by the appearance of an initial rash—a diffuse erythematous eruption which is most marked on the face, but may be present over the whole body. The eruption is accompanied by a certain amount of oedema of the skin, so that the patient complains that his features feel stiff, and with it there is considerable congestion and suffusion of the eyes. This initial rash is generally very evanescent, and often does not last more than a few hours. The temperature rises rapidly, and in a few hours may reach 103° or 104° , or even higher. The following morning the fever as a rule remits one or two degrees, but rises again in the evening, but usually not to the same height as on the first day; the aches and pains also subside considerably after the first twenty-four hours, so that the patient feels comparatively comfortable. The fever continues in this way for two or three days, the most usual duration being three days, but in some cases it may extend to four or even five days; and, on the other hand, it may come to an end after the first twenty-four hours. During the period of fever the tongue is coated with a thin white fur; there is also headache and almost complete anorexia. With the subsidence of the fever all the symptoms disappear, with the exception that wandering pains in the joints often persist, most frequently in the hands and feet.

After one or two days—that is, on the fourth or fifth day from the onset—the terminal rash makes its appearance. The coming out of this rash is often accompanied by some return of the fever and pain, but quite as frequently there is an entire absence of these symptoms. This terminal rash is the most characteristic feature of the disease; it consists of small, slightly-raised, dusky-red macular spots, each spot being about the size of a split pea. The spots appear all over the body, even on the palms of the hands and on the soles of the feet; they are most numerous, however, on the face and on the extensor surfaces of the knees, elbows, and wrists; in these situations the macules often run together to form continuous red patches of considerable size, slightly raised above the level of the surrounding skin; occasionally the rash may be almost universal, so that the body is covered with patches of red, with small islets of white between. This rash, like the initial, is accompanied by oedema of the skin, so that when there is much rash present on the hands the patient will often complain that his fingers feel stiff, as if they were encased in a tight glove. The terminal rash persists, as a rule, for about twenty-four hours, and then quickly disappears, and is followed by a fine branny desquamation.

Convalescence and Sequelae.

After the rash has gone convalescence is established in many of the cases, and no ill-effects remain except a certain amount of lassitude and weakness, which are recovered from in a few days or weeks. Unfortunately, in a considerable number of cases, there are various sequelae which may delay complete convalescence for some considerable time. The first, and perhaps the most troublesome, is the liability to relapses of fever; these relapses do not seem to be a return of dengue fever, but appears to be in most, if not in all, attacks of malaria; in several cases in which I have examined the blood during the relapse I have found malarial parasites, and I hear that others have had the same experience; thus it seems that the attack of dengue either wakes up malaria which has been lying dormant in the system, or else renders the patient particularly non-resistant to a chance fresh infection.

Secondly, in many cases in which convalescence seems to be established, complete return to health is delayed by a recrudescence or a continuance of the pains in the limbs and joints; the pains which are not accompanied by fever occur

as before, and may be situated in any part of the body, but they are, as in the original attack, most frequent in the wrists and small bones of the hands or in the ankles and feet; the spinal column is also not infrequently the seat of pain. These pains are often so severe as to prevent the patient using the limbs in which they are situated—thus, when they are severe in the lower extremities, the patient may have great difficulty in even hobbling about his room; the pains are often accompanied by a considerable amount of swelling round the joints or tendons where they are located. There is no tenderness on pressure or, as a rule, on passive movement, but a dull ache remains all the time, which is much increased by voluntary movement. I have also noticed that joints that have been the seat of former injury or inflammation are very apt to suffer severely, both during the actual attack of dengue and also to be the seat of election for the pains that occur during convalescence. The duration of these after-pains is very variable; in some cases they disappear after a few days, in others they may persist for many weeks; fortunately, however, they do not as a rule continue with the extreme severity that they show at their commencement, so that although still suffering pain the patient is able after a few days to get about again.

Catarrhal complications are seldom if ever seen after dengue; in one case only I had a patient whose attack was accompanied by some slight bronchial catarrh, which, however, soon cleared up. I have not seen any case which resulted in death, nor have I heard of any such.

Diagnosis.

In a typical attack of dengue there is usually little difficulty in arriving at correct diagnosis; the sudden onset, the extreme pain, and especially the situation of the pain in the wrists, hands, ankles, and feet, and the occurrence of the rash, which is very distinctive, together make the disease one which is easily recognized. On the other hand, in cases in which there is no rash, it may be very difficult to distinguish them from cases of non-catarrhal influenza, and I am sure that I should have thought several of my cases to be such had it not been for the prevalent epidemic of dengue. There is also the difference in the situation of the pains; in dengue they are nearly always present in the hands and feet, wherever they may be besides, while in influenza these joints are very seldom involved.

Treatment.

I have not much to say about this, the disease, being undoubtedly due to a specific infection, will run its course in any case. I think, however, that during the febrile stage the administration of sodium salicylate does something to relieve the pain and also to keep the temperature within bounds; a very hot bath will also often produce considerable alleviation of the aches and pains, and enable the patient to get some relief.

The pain which comes on after the febrile stage is at an end is often much more obstinate. I have had some success with salicin and potassium iodide; massage and rubbing with stimulating liniments are also very useful measures. Nevertheless, some of the cases seem to defy every method of treatment, and the pains persist for several weeks, drugs notwithstanding, then gradually die away of their own accord.

THE TREATMENT OF TYPHOID FEVER.*

By N. E. NORWAY, L.R.C.P., M.R.C.S.,
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I DESIRE to call attention to some points in the treatment of typhoid fever, and I wish at once to say that I make no claim of novelty. My drugs and methods are well known, but the combination I use, aided by intelligent nursing, seems to me to be practically specific, and my object is to persuade you to give it a trial.

I have not lost a case treated by this method, and have such faith in it, that I persuaded my partner to treat me by it two years ago, when I suffered from typhoid after a holiday in Italy.

* Read at a meeting of the South-Western Branch of the British Medical Association.

I do not claim that the treatment is specific on the ground that I have never lost a case, for it may be said that the number (about 40) is too small, or that they have been of a mild type, or that medical skill is favoured by the splendid climate of Newquay, or some other of the considerations which detract from the value of mere figures. I do, however, maintain that the practitioner will find that he has more control of the disease than can be obtained by any other form of treatment. The patient may be treated regularly, and the temperature will gradually fall, the pulse become slow, and the stools become normal. On the other hand, treatment may be stopped too soon, and the usual symptoms will recur. I was led to adopt the treatment by the following considerations:

I made and witnessed several necropsies on typhoid patients at a large London hospital, and was struck by the undigested condition of the food found in the stomach and intestines. I have removed from a stomach a mass as large as, and resembling, a Spanish onion, which consisted of laminated curdled milk. In no case did the food found in the stomach or intestines appear to be digested. Both macroscopically and microscopically the food was much as it was before it was swallowed, except that the milk was curdled and the contents of the ileum were very offensive; the colon was usually empty; the whole gastro-intestinal tract was in a congested condition, which steadily increased as the ulcerated portion was neared; the stomach was usually quite dry, and sometimes felt harsh. The cause of death in many cases seemed to be starvation, and I think it reasonable to suppose that Eberth's bacillus has the property of checking the power of digestion, either by raising the temperature of the body, or, possibly, in some more direct way. We know that the excretion of nitrogen through the kidneys, and of carbon through the lungs, is increased in fever; so, if food is not digested, the rapid wasting of typhoid patients is easily understood. The stools of severe cases in the wards were pultaceous, and consisted entirely of undigested food and mucus. Flakes of curdled milk, bearing no evidence of digestion, could often be seen with the naked eye.

In spite of the rarity with which Eberth's bacillus is found in the blood, we are now, probably, all of opinion that the multiplication of the bacillus takes place elsewhere than in the lumen of the gut, and that the ulcerations in Peyer's patches are merely the seat of election by which the bacillus endeavours to escape from its host. I may remind you that Vidal's reaction has been obtained on the fifth, and even the fourth, day of the illness, and that the bacillus has been found in the urine on the third day; while it has not been found in the stools until the ninth day. It is also found in the mesenteric glands and the spleen (9 out of 15 cases, Roux and Meisels), and has been found in the cerebral meninges (Férult); in the fetus; in the pus of abscesses; and in the sputum of typhoid patients when pneumonia intervenes (Chantemesse).

These observations seem to show that the blood stream has at least the power of disseminating the specific bacilli, and demonstrate the futility of endeavouring to combat the disease by means of intestinal antiseptics.

One is thus confronted with the salient points: (1) That the patient wastes because the food assimilated does not equal the elimination of urea and carbon dioxide; (2) the non-assimilation of food is in some way due to Eberth's bacillus; (3) the bacillus being safe from our direct attack by drugs, there remains nothing but to strengthen the resisting powers of the patient.

I have, therefore, given a mixture intended to enable my patient to digest the nourishment given, of which the following formula may represent the average for an adult patient:

R. Essen. Pepsintiae (Armour) $\mathfrak{z}\frac{1}{2}$ to $\mathfrak{z}\mathfrak{j}$, acidi nitro-hydrochlorici dil. $\mathfrak{m}\mathfrak{x}$, glycerini $\mathfrak{m}\mathfrak{x}\mathfrak{x}$, aquam ad $\mathfrak{z}\frac{1}{2}$.

The half-ounce I direct to be placed in half-a-tumbler, or more, of water, and to be sipped or taken as desired to relieve thirst. At first I give such a dose every hour, adding ten minims of spirit of chloroform if the heart seems to require stimulation beyond the powers of the pepsin. A few minims of liquor morphinae hydrochloratis may be added if pain or want of sleep at night make it seem desirable. As the temperature falls, which it usually begins to do on the second or third day of the treatment, I gradually lessen the frequency

of the dose. The mixture is, however, given throughout the illness until pain in the iliac fossa disappears, and temperature and stools become normal. I have never seen any unpleasant effects from its continuance, but have often regretted giving it up too soon. I may add that treatment is often begun by 1 gr. of calomel in powder, with 10 gr. of phenacetin, as an excipient. This may seem inconsistent with what I have said about intestinal antiseptics, but it is given on the supposition that non-pathogenic bacilli (such as the bacillus coli communis) may acquire pathogenic powers when fever alters their usual conditions of life. It appears likely that many of the complications of typhoid fever are due to "mixed infections" or to stimulation of micro-organisms which are usually inoffensive. At any rate, these powders lessen the offensiveness of the stools, and that must be an advantage.

Of course, none of the advantages of careful nursing are neglected. The patient is sponged frequently, fresh air insisted on, the feet kept warm, etc., and the better the patient is nursed the sooner he will recover. The diet consists, as far as possible, of milk (unboiled, but from a carefully selected dairy). I vary the flavour as much as possible by adding tea or coffee, the latter (without chicory) being, I think, the best cardiac stimulant we have, and useful in relieving the mental depression and headache. It is better not to give nourishment too often, but the frequency must depend on the amount which can be taken at a time. I prefer to give 5 or 6 ounces every two hours rather than half the amount every hour. Occasional meals of some form of beef-tea should be given to prevent the patient being too tired of milk. Very soon bread and milk, egg and milk, arrowroot, milk puddings, and scrambled eggs may be given, but a daily inspection of the stools can alone decide a change of diet. Diarrhoea does not cause trouble with this treatment, and to relieve constipation nothing answers better than small glycerine enemata.

I have been asked whether I consider the pepsin or the nitro-hydrochloric acid the more important drug. I do not know. Neither seems so useful in the absence of the other, and the glycerine seems to have more use than as a mere sweetening agent, and should not be replaced by a syrup. The special preparation of pepsin is probably not of importance; I have merely named the one I always use as an example of the dose to be given.

FIVE CASES OF PERFORATED GASTRIC ULCER TREATED BY ABDOMINAL SECTION AND SUTURE,

WITH REMARKS ON THE TREATMENT AND PROGNOSIS OF
THESE CASES.*

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I WILL first of all relate the course of five cases of perforated gastric ulcer which have recently come under my care, and will then make some general remarks on the prospects of surgical interference in such cases.

CASES.

CASE 1. Leakage from a Perforated Gastric Ulcer: Formation of a Perigastric Abscess: Abdominal Section and Drainage: Recovery.—F. B., a married man, aged 38, was admitted on May 12th, 1900, with symptoms of peritonitis of the upper half of the abdomen.

History.—He enjoyed good health until two years before admission. Since then he had suffered from typical symptoms of gastric ulcer with occasional hæmatemesis. Three weeks previously he was suddenly seized with violent epigastric pain, coming on ten minutes after food. He vomited once, became extremely collapsed, and for some hours was apparently moribund. Since then he has been confined to bed. He has had almost constant sickness, acute abdominal pain, and gradually increasing abdominal distension, with a hectic temperature.

Condition on Admission.—He was extremely emaciated. Temperature 102° , pulse 128. The abdomen was almost motionless on respiration. There was distinct fullness in the epigastrium and left hypochondrium. The swelling was tympanitic in front and dull in the loin. The lower intercostal spaces on the left side bulged, and there were no pulmonary sounds to be heard below the eighth rib. The heart was pushed upwards, and the apex beat was in the fourth intercostal space. There were loud pleural friction sounds to be heard on the left side. A diagnosis of a left-sided subdiaphragmatic abscess was made, due to a leak from a gastric ulcer.

* Read before a meeting of the Staffordshire Branch of the British Medical Association.