whole of the inferior hospital staff is locked up in the premises and the staff for cholera and suspicious cases kept separate from the remainder of the staff throughout the whole length of the pilgrimage. At the gate of the hospitals there are baths, a disinfecting stove, and a laundry, so that everything can be disinfected before leaving the hospital. The linen coming from the cholera section is always steamed before being washed.

Pipe water is distributed throughout the camp.

THE RESULTS.

In order to be sure whether or not the results, apparently successful, obtained at Tor this year were due to the measures taken, it is essential to know what happened at Tor under similar conditions in former years.

The reorganization of the camp dates from 1897, and it appears from official reports that the disinfection and isolation of pilgrims were then far from perfect. The water supply, also, was likely to become easily contaminated, though there is no evidence to show that it ever was contaminated.

Within the last ten years cholera has appeared three times at Tor, namely, in 1893, 1895, and lastly this year.

The statistics of 1895 are really of no use, because cholera as such was not recognized until the epidemic had spread among the soldiers guarding the camp. All the other cases, with the exception of two, were classed with cases of diarrhoea under the title of "*diarrhée infectieuse*."

The statistics of 1893 are not more satisfactory, because the medical supervision being very defective, it is not exactly known how many cases occurred in the camp. So much, however, is known as that cases occurred in the camp nineteen days after the pilgrims had been landed, that cases occurred on board ships after remaining more than fifteen days in quarantine at Tor, and after the voyage home from Tor to Turkey and Morocco, that on one ship indeed a case of cholera occurred after more than sixty days' quarantine. It cannot be argued, therefore, that the air of Tor is in any way inimical to the spread of cholera.

The following table shows the time at which these cases occurred:

Name of Ship.	Date of Arrival.	Date when Disinfection was Completed.	Date of Appearance of Each Case of Cholera.	No. of Cases.	Deaths.	Cured.
Kamil Pacha...	1902. April 1	1902. April 1	1902. April 1	4	1	1
Fayoum ...	" 2	" 2	" 2	10	1	5
Garb ...	" 3	" 5	" 3	3	3	4
Minieh ...	" 4	" 7	" 4	3	3	11
Alexandria ...	" 5	" 7	" 5	3	1	4
Odissos...	" 6	" 9	" 6	3	2	2
Taif ...	" 6	" 9	" 6	3	1	3
Elleni ...	" 7	" 11	" 7	1	1	1
Ermis ...	" 7	" 11	" 8	1	1	1
Angora...	" 14	" 16	" 16	2	2	2
Savoie ...	" 23	" 25	" 23	2	2	2
Albia ...	" 23	" 25	" 25	1	1	1
Hodeida ...	" 28	" 29	" 29	1	1	1
Finsbury ...	May 12	May 13	May 13	1	1	1
Saccaria ...	" 21	" 24	" 21	1	1	1
				54	43	11

Number of cases occurred between the day of the arrival and the disinfection, 44. Number of cases occurred after the disinfection, 10. Namely, 5 cases one day, 3 cases three days, 1 case five days, and 1 nine days after the disinfection had been completed. It is clear that more than half these cases were already incubating cholera when admitted into the camp.

The number of pilgrims which arrived at Tor this year was 26,139, on thirty-four pilgrim ships, of which fifteen were found infected with cholera, a proportion of infected ships

almost unheard-of. Of 54 cases of cholera landed or occurring at Tor, 43 died (mortality nearly 80 per cent.), so that it cannot be said that the disease was not virulent.

Whenever a case appeared in the camp the pilgrims inhabiting the same tent as the patient, and their clothing, were disinfected in the usual way, and kept under special observation. The disease did not extend to any of the hospital staff or the soldiers forming the cordon, and according to all official reports no cases occurred on board ships after leaving Tor. Needless to say, all the ships had been thoroughly disinfected during their stay at Tor.

With regard to the extension of the disease we may add that during the present pilgrimage, life at Tor was rendered unendurable by a plague of flies. It was found impossible to keep them out of the barracks of cholera patients and out of our own tents. They were found in one's milk or coffee if the cups were left uncovered for more than a few seconds, and an afternoon sleep was out of the question, except under a mosquito curtain. In spite of this incredible number of flies, the disease spread not at all in the camp, and accordingly we cannot help being somewhat sceptical as to the supposed rôle played by these insects in the spread of cholera.

REFERENCE.

1 *Transactions of the Epidemiological Society of London*, New Series, vol. xix, Session 1899-1900, p. 25.

AN EPIDEMIC OF DENGUE FEVER.*

By F. O. STEDMAN, M.D., B.S.LOND.

Hong Kong.

DURING the last three months of 1901 a somewhat widespread epidemic of dengue fever was prevalent in Hong Kong, and I understand from hearsay that a similar epidemic attacked Macao and Singapore also. I believe that a considerable proportion of the population in the City of Victoria, Hong Kong, has been affected by the disease, but owing to the infrequency with which the Chinese seek European advice it is impossible to form any estimate as to what percentage of the community was attacked. As far as I have been able to ascertain the epidemic seems to have commenced among the Chinese, after them the Parsee community here seems to have suffered the most severely; in fact, I think a greater percentage of them than of the Chinese must have suffered from the disease; a considerable number of Europeans has also been attacked, but the proportion would appear to be small compared with the total number of the white population of Hong Kong. I have been told by doctors belonging to the military and naval services that there have been very few cases either among the soldiers or sailors stationed here. The disease has been chiefly prevalent in the city, and I have seen very few cases on the higher levels; in fact, at the Peak I have only had two or three cases under my observation.

The epidemic commenced about the middle of October and began to subside early in December as soon as colder weather set in, thus according with the textbook description of the disease, for it would appear that in former epidemics it has ceased to spread simultaneously with the onset of cold weather.

I regret that I have not seen any case in which I was able to form a reliable estimate of the incubation period, but my impression is that it is very short—not more than one or two days at the most; in one house I had four cases, three of them falling sick within twenty-four hours of the first case, but it was impossible to be sure that they contracted the disease from the first patient. I was, however, told of a case where a person landed here from a ship which was free from infection, and twenty-four hours after was attacked with dengue fever.

Infection.—There can of course be no doubt that dengue is highly infectious, yet, on the other hand, it is very remarkable in how many instances I saw only one case in a house in which there were many residents, and yet all the others in the house escaped. Moreover, out of a considerable number of medical men in this colony, most of whom must have seen cases of dengue, I only know of three who contracted the malady.

* Read before the Hong Kong Branch of the British Medical Association.

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.,
Newquay, Cornwall.

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.