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*2nd Edition*  
DENGUE AND ITS TREATMENT

BEING

THE SUBSTANCE OF A LECTURE

DELIVERED AT

A MEETING OF THE NATIONAL SOCIETY,

HELD ON THE JUNE 9, 1872.

BY

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*Licentiate in Medicine and Surgery.*

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INSECT DAMAGE

## PREFACE.

THE substance of the following pages on dengue was read before the NATIONAL SOCIETY, at a meeting held on the 9th June last. It is more out of a sense of duty and obligation, than of any notion of my own importance, that I was induced to undertake the onerous task, of giving an account of the present epidemic, which is just passing over Calcutta and the adjoining villages, and rapidly spreading in all directions throughout India.

Though fully aware of my inability to do justice to the subject, an anxiety to discharge a "debt immense" to the profession, and an humble desire to inform my countrymen of the symptoms and progress of the disease, and the mode of treatment calculated to afford relief, have been the sole objects of my present endeavour. When these pages were written for the society, I had not the remotest idea of its publication. Should, however, the published results of my experience serve to be of any practical utility to my countrymen, and should they be considered by my co-labourers to furnish an exact history of the epidemic in its present form, especially among the native population of Calcutta, I shall feel myself amply repaid.

I am afraid, there may be remarks and observations embodied in these pages, to which some of my medical brethren may not subscribe. But I am open to correction.

CALCUTTA, CHOREBAGAN, July 1, 1872.

B. M. S.

## DENGUE AND ITS TREATMENT.

MR. PRESIDENT AND GENTLEMEN,—

THE subject, on which we have met together this evening, is one of great practical interest, *a propos* to the topic of the day, and which has absorbed the attention of all classes of people from one end of the country to the other. The disease is rapidly spreading without sparing either sex, age, or complexion. The infant and the aged, the weak and the robust, the rich and the poor, the male and the female, the dark and the fair-skinned, have been all alike subject to its attack. From Reports lately received from Rangoon and Surat, it appears, that dengue does not spare even the lower animals. Most of the cattle in these places have fallen victims to it.

From the reports of isolated cases among the Europeans, it seems, the disease made its appearance in Calcutta in the beginning of the cold season, but broke out in the form of an epidemic, with the advent of the hot weather. The May number of the *Indian Medical Gazette* contains a very plausible account of the circumstances under which the disease made its way into this country.

“It appears, that the Indian Foreign Department received a Report from Aden, as far back as August, to the effect, that an epidemic fever was prevalent

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Among the European troops, and that it had extended into the interior. A further communication was received by Government on the subject, dated the 26th August, in which it was stated, that the epidemic continues among both Europeans and Native inhabitants; probably 80 per cent of the population have already been attacked. In fact, few of the inhabitants have escaped an attack; and on the 24th of October, news reached the Government of India "from the Muscat Political Agency (from the 18th to the 29th of September 1871) stating, that at the town of Muttrah, a species of epidemic fever, apparently similar to that of Aden and Zanzibar has been prevalent, but it is now disappearing." This is the first account we have of the dengue fever, now working its way gradually over the whole of Hindustan. We may form some idea of the way it reached India, from the following narrative, communicated by Surgeon Major Fletcher, Garrison Surgeon, Cannanore, to the *Madras Medical Journal*: It seems, that the steam ship "Dalhousie" was at Aden during the latter months of the year, and on her return voyage to Bombay, dengue broke out among the crew. Evidently the disease had been contracted at Aden. The disease was confined to the lascars, the European portion of the crew escaping. The vessel was cleansed and painted, but not disinfected, as the authorities at Bombay did not consider the disease contagious. On the 26th of December, a draft of 35 men of the Royal Artillery from England and some volunteers were put on board the "Dalhousie" at Bombay, and sailed at once for Cannanore, where they arrived on the 2nd January. On this voyage, Captain Hewett and all the other officers of the ship,

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with one exception, were attacked with dengue, and also the European part of the crew. The troops landed on the day of arrival, and there was no case of sickness among them; but they had hardly disembarked, before several men were suddenly seized with dengue, and by the 18th of January, nearly the whole of the detachment had been reported sick, four men only having escaped. They were at once isolated and kept in strict quarantine, and so far as we know, the disease has not spread, only two of the residents of the station having been affected; the one was the General Commanding, and it is remarkable, that the Assistant Surgeon in charge of the detachment of troops on board the "Dalhousie," called on the General on the day after his arrival. This medical officer was himself seized with dengue two days subsequently to his visit to the General, and a gentleman with whom he was residing also contracted the disease."

This evidently shows that the disease is contagious, and carried from one man to another by direct communication. The circumstance of its spreading from one neighbourhood to another, and the fact of most of the members of a family catching it one by one, would lead us to believe, that the disease spreads both by contagion, as well as through the medium of the air we breathe. The disease is evidently extraneous, having been brought to this country from foreign shores, and it does not seem to have been generated in Calcutta from local causes. However, there is difference of opinion among medical men, as to the contagious nature of the disease.

On perusing the account, given in the *Indian Medical Gazette*, of the way in which the disease made its



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advent into this country, one cannot set too high an importance on the observance of strict quarantine laws to prevent the spread of epidemics.

The following quotation from the above *Gazette*, will fully corroborate my assertion:—

“This story of dengue at Aden, its spreading to the crew of a vessel in the port, and being then conveyed to Bombay, and from thence to Cannanore, is a good illustration of the mode by which contagious diseases are permitted to extend themselves over this country. It must be difficult, with the number of small native trading vessels, sailing from the coast of Africa and Arabia to India, to enforce quarantine laws, nevertheless, those who have suffered from the racking pains of dengue would have blessed the Government, who could have protected them from the inconvenience and misery they have undergone, arising from a disease which is clearly communicable from man to man, and which was evidently by man brought from the coast of Africa into this country.”

In their *Nomenclature of Diseases*, the Royal College of Physicians have adopted the same peculiar name *dengue*, which was given to the disease by the negroes. The word “dengue” has a Spanish origin, being a modification of the word “dandy.”

An American author gives a very plausible solution of the Spanish corruption—“This disease,” he says, “when it first appeared in the British West India Islands was called the dandy fever, from the stiffness and constraint which it gave to the limbs and body. The Spaniards of the neighbouring Islands mistook the term dandy for their word dengue, denoting prudery, (stiffness of manners) which might also well

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express stiffness, and hence the term dengue became at last the name of the disease.”

We are indebted to the writings of physicians who practised in this country, like Drs. Mellis, Kennedy, Cavel, Twining and Mouat for the earliest history of the disease in India. A similar kind of fever visited Calcutta once before in 1824-25, during the hot and rainy months, and is said to have attacked almost every one both Native and European.

This was known among the natives of Calcutta about forty-eight years ago by the name of *Magaie Jor*, and is still well remembered and described by persons above fifty-five years of age.

Another similar epidemic, though differing from this in many respects, has been noticed by Dr. Edward Goodeve, which broke out in Calcutta in 1853, and was popularly styled as Goodeve's Red Fever.

The following account, which occurs in the American Cyclopædia, will give a very good idea of the nature, course, and progress of the disease since its first outbreak.

“Dengue called also Dingee, Dunga, Dandy, Bouquet Fever, Bucket Fever, Breakbone Fever, &c., is a peculiar febrile epidemic, which at varying periods has pervaded in the East and West Indies and the southern and middle States of the United States. Its first known appearance was in 1780, when it broke out in Philadelphia suddenly in autumn, and raged for two or three months. Both sexes and all ages were affected by it; and in the district where it occurred, hardly any one was exempted from its attack. It was named by the people, Dr. Rush states, the breakbone fever. Its next appearance was in Calcutta in 1824-25. In 1826,

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it seems to have occurred in a form at Savannah and perhaps elsewhere. In the autumn of 1827 it appeared in the West Indies, occurring, as before as a universal epidemic. In St Thomas the negroes gave it the name of the dandy fever, from the stiff gait and appearance of those affected by it. When it appeared in Cuba, this name in undergoing the Spanish pronunciation was changed into dunga which it has since retained. It appeared again at Savannah in 1827, and in the autumn of 1828 raged through most of the southern cities. It disappeared in the winter. A few cases were seen in 1831. In 1844, it appeared at Mobile and in 1848 at Natchez; in 1850, it again appeared over the southern States and presented the same characteristics as in the previous epidemics."

Dr. Aitken in the first volume of Reynold's *System of Medicine*, has given a detailed account of the fever; but his definition does not correspond with the present epidemic nor with those of 1824-25.

He defines the disease to be "a febrile affection, *sui generis*, commencing suddenly, and associated from the commencement with severe pains in the large and small joints. About the third day, a peculiar cutaneous eruption or efflorescence appears upon the palms of the hands, rapidly spreads over the body, and rarely continues beyond twenty-four hours. A distinct remission succeeds, but relapses are numerous, and the disease may thus persist about two months, marked by prostration and cachexia, its course being characterized by intervals of remission, and the exacerbation marked by rheumatic or neuralgic-like phenomena."

Dr. Aitken gives the following synonyms of the disease:—

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*Synonyms.*—Scarlatina Rheumatica, *Cock*; Exanthema Rosalia Arthrodynia, *Cock*; Dandy Fever, *Natives of West Indies*; Dunga Bouquet; Bucket; Epidemic Inflammatory Fever of Calcutta, *Mellis*; Eruptive Epidemic Fever of India; Toohutia, *Natives of East Indies*; Three-day Fever, *Natives of East Indies*; Rheumatic Fever with Gastric Irritation and Eruption, *Furlouge*; Eruptive Articular Fever; Eruptive Rheumatic Fever; Plantaria; Febris Exanthematica Articularis; Giraffe, on account of the stiff holding of the neck; Anomalous Disease, *Stedman*; Peculiar Epidemic Fever; Colorado, on account of the red spots; Exanthema Arthrosia, stiff-necked fever; Broken-wing Fever; and Break-bone Fever.

*Invasion and Progress.*—The attack is very sudden in the majority of cases; persons in good health get the attack at any time without any premonitory symptoms. Very occasionally, however, the attack is preceded by slight febrile symptoms and general uneasiness for days together. The description given by Dr. E. Charles, of the sudden nature of the attack is graphic, and I am induced to repeat his words—"A merchant goes to the opera, and during the performance is obliged to leave the house. A lady at her devotions in church is seized, while kneeling during a short prayer. Two young women jump into a swimming bath; they both are in their element and experience much enjoyment; they leave the bath, and both of them go directly to bed in the tortures of dengue; another lady goes into her own bath-room quite well, and after bathing cannot dress again as the disease is upon her. A young delinquent falls under the chastisement of his father, and is carried to bed with dengue."



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Sudden attacks of similar nature are every day met with. The fever is preceded by a feeling of languor and lassitude, and followed by more or less chilliness all over the body. The disease is in some cases ushered in with shivering, not amounting to actual rigor. I have not met with any case attended with well marked rigor, though this symptom is described to have been present in former epidemics. The face becomes flushed, countenance dejected, and a general diffused redness like a rash, spreads over the face, ears, neck, and the upper part of the trunk. This rash, called the *initial*, sometimes disappears in a few hours, but in most cases persists and changes to the *terminal* rash. It is sometimes so intense as to simulate the rash of scarlatina. This initial rash, which appears almost simultaneously with the fever, is often absent or slightly marked; but when it does occur, it is quite characteristic of dengue, and serves to distinguish it from the other eruptive fevers. On pressing the skin with the finger, the redness disappears and immediately returns on removing the pressure. In one case, instead of this rash, I met with a papular eruption in small red pimples, scattered all over the body, especially on the trunk, appearing along with the fever. The face becomes red, bloated and shining, as if besmeared with oil. The eyelids become swollen with red edges, and the conjunctivæ red and shining.

The pyrexia or the hot stage of the fever is not only a constant symptom, but is similar in nature almost in all cases of dengue. The temperature gradually rises and the surface of the body becomes intensely hot and dry. The patient complains of restlessness, burning of the body, thirst, headache, (though not a

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constant symptom but very troublesome when present) sleeplessness, intolerance of light and loss of temper; some are fretful, others talkative, speaking nonsense at random; some again are quite listless, as if comatose. Delirium is rare in adults; but delirium, convulsions, and even coma are occasionally met with in children and infants. Children during the period of dentition, are most susceptible to convulsions, when attacked with dengue. In severe cases, this complication brings on grave symptoms, and sometimes proves fatal. Perspiration is often a constant symptom, occurring several times during the hot stage, either profuse or sufficient to make the skin simply moist. The temperature is reduced for a time, but after a short interval, it reappears with greater intensity. The fever cannot be called *Remittent*, in the proper sense of the word, but marked periods of exacerbation are observable at indefinite times. The hot stage continues for three days or 72 hours, though the symptoms begin to abate after 48 hours. On the 4th day, the skin becomes cool, the fever goes off, and the patient feels much more comfortable. The pulse is full, but in comparison to the other alarming symptoms, not so rapid as in other fevers. It becomes weak and feeble, after the subsidence of the fever.

The fever sets in with more or less *Pain in the Joints*, both large and small, and this symptom is so constant and well marked, that it is quite characteristic of this peculiar kind of eruptive fever. In a very few cases, this rheumatoid affection is absent. In some cases, the pains are confined to the joints on one side of the body, either the left or the right, but more frequently the left. The larger joints, especi-



ally the knees, are more frequently affected with greater severity. When the smaller joints are affected, the fingers and toes are stiff, and the patients can hardly take hold of things, or place their feet on the ground. Occasionally, the soles of the feet become very tender. The pains in the joints are very severe and most distressing. The patients can hardly move their limbs without extreme suffering. They feel as if their limbs were broken. Persons of rheumatic diathesis and with weak joints, suffer much more from the pain attendant on this fever, and the weak joints are more painful than the sounder ones. Sprained or dislocated joints are similarly more troublesome during an attack of dengue. Sometimes the joints become swollen and pit on pressure. In four or five cases, I met with inflammatory swelling of the joints, leading to suppuration, and relieved by operation. Along with the joints, the muscles of the limbs are also affected. They become tender and painful on pressure. Colic pains, and pains within the chest are occasionally complained of. In one case, there was severe pain of the diaphragm, which made a strong healthy man roll on the floor for hours together, in extreme helplessness. The pains abate gradually but continue for long, after the patient is better in other respects.

Catarrhal implications of the mucous membranes of the nose, throat, and bronchi are rare in dengue; very few cases of bronchial catarrh and sore throat have occurred in this epidemic, and one or two cases have fatally terminated by the latter complication.\* Deafness

\* Babu Surja Kumar Surbadhicari in his practice, as he remarked after the reading of this paper, met with two cases of hæmoptysis terminating fatally within twenty four hours.

is another troublesome complication. Diarrhoea sometimes sets in with the fever, or appears on the second or third day. Numerous bilious stools are frequently passed, which by inducing constant movements, aggravate the pains already so severe. In some cases the stools are watery, and symptoms of cholera are developed in the course of the disease. Occasionally the evacuations are bloody.

Vomiting is another troublesome symptom, which either sets in with the fever, or closely follows it, and continues for three or four days, until the febrile stage subsides; sometimes blood is vomited, but this is very rare. Frequently the febrile stage is attended with occasional nausea, owing to extreme biliousness.

Loss of appetite, inaptitude for food, and extreme bitter taste in the mouth, are invariably complained of. The edges of the gums are red and swollen, the mucous membrane of the oral cavity thickened, and a peculiar viscid secretion accumulates in the mouth, emitting a nauseous disagreeable smell.

The appearance of the tongue is almost characteristic of the disease. It is covered with a thick white fur with red tip and edges, and some bright red papillæ anteriorly. The tongue is usually moist, the redness and the papillæ disappear with the febrile stage, but the white thick coat may persist for some time, especially in cases of disordered bowels, and in such, where there is a tendency to relapse.

The urine is generally high-colored and scanty, as in other fevers. Some observers have found it to be copious and light-colored. The urine may be clear and abundant in some cases for the first twenty-four

hours, but latterly, it generally becomes scanty and high-colored.

Utter prostration of strength is a constant symptom complained of in dengue. People who have suffered from it, generally state, (and I do fully subscribe to their statements) that they have often suffered from fevers and many other serious maladies, but have never felt such extreme helplessness as in this.

Abortion among females who are *enciente*, is sometimes a very serious complication, and this unfortunate occurrence takes place, either during the pyrexia, or during convalescence.

Epistaxis, though not a constant symptom, is sometimes met with in this disease. I have seen a few cases of bleeding from the nose in the course of my practice, but have heard of many others from my brother practitioners.

Salivation though rare in dengue is extremely distressing. I have met with only one case of profuse salivation, which lasted for three days after the subsidence of the febrile stage. Redness, swelling, and tenderness of the gums are however often met with.

On the fourth day, with the subsidence of the febrile stage, a second eruption makes its appearance, called the *terminal* rash; sometimes it appears on the fifth day, and even so late as the seventh. This peculiarity of the eruptive period developing itself when there is no pyrexia, serves to distinguish this disease from the other eruptive fevers. The rash generally appears first on the neck, then on the face, chest, trunk, and gradually spreads over the body; the eruption is generally like measles in appearance, to which it bears such a close resemblance, that elderly

women would hardly be convinced of its being anything else. When the disease first broke out, many of us mistook it for measles from the nature of the eruptions. In dengue, the eruptions are not distinctly crescentic in shape, nor so diffuse and closely set as in measles. Sometimes, but very rarely, vesicular eruptions like *bullæ* break out all over the body, much to the inconvenience of the patients. They burst and leave bad ulcers. I have seen five or six such cases, and all in children under three years. In the majority of cases, fever re-appears with the eruptions, but it is not so strong as the first fever. This rash is a constant symptom, appearing almost in all cases; sometimes it escapes detection, owing to its slight and evanescent character. This rash takes from three to eight days to disappear. In well marked cases, minute bran-like scales come off the body, as in the desquamation of measles, leaving an ugly mottled appearance of the skin, which remains for many days after the disappearance of the rash. The epidermis or the cuticle has a tendency to come off after an attack of dengue. In one of my patients, I found the whole cuticle covering the face, palms of the hands, and soles of the feet, to come off, *en masse*, leaving the parts red and tender. In many cases, however, small patches of the cuticle come off from the palms and soles, leaving an irregular worm-eaten surface. From what I have seen of this epidemic, I am led to surmise, that in cases attended with severe pains of the joints, slight or no eruptions make their appearance; and when the pains are slight or absent, copious eruptions are developed. This however does not hold good in all cases.

One attack seems to be protective against another,



though relapses are not uncommon. The fact of persons above fifty-five years of age, having generally escaped the present epidemic, will probably be explained, by their having been subject to it in 1824-25, which previous attack may have protected them from any on this occasion. Irregularities of diet and previous malarious taints might tend to bring on relapses, but these ought to be reckoned as exceptional cases; I know of persons having had three or four relapses within a month.

*Sequelæ.*—Utter prostration and general debility are the principal complaints after an attack of dengue. Inaptitude for work, both mental and physical, is observed almost in all cases; sometimes the prostration is so great as to bring on weakness of sight and deafness. Dimness and haziness of vision, and occasionally muscae volitantes are complained of. Pains of a rheumatic or neuralgic character, and lameness of joints, are very common after the attack. The acuteness of the first pains subsides on the fourth or fifth day, leaving behind the after pains, which though not so severe, are very annoying and intractable. These pains are often persistent and obstinately continue for weeks and months together. People generally despond, and lose all hopes of getting rid of the pains, as they continue for a long time without abatement. People with previous rheumatic or gouty taints, suffer more severely from these pains. Pain lingers in sprained and habitually weak joints longer than in sound ones. Fresh cicatrices of wounds and ulcers become red and tender, and sometimes burst into new ulcers after an attack. The pains are not so acutely felt when at rest, but the suffering is great, when attempts are made to rise

or move the limbs. The sufferer sadly laments his condition within himself, vainly expecting to meet with much sympathy from his friends, as he looks pretty well in other respects. These pains are erratic in their nature, shifting from one joint to another. Pains in the chest and back are sometimes very troublesome.

Occasionally, the joints are swollen and the limbs œdematous. I have met with a case of general anasarca of the whole body but which gradually disappeared without any treatment.

Inflammatory swelling with suppuration is sometimes met with. I have had three cases of suppuration of swellings round the ankle joints, one of pelvic abscess and another of unusually large diffuse abscess in the sacral region. Several cases of abscess in the arms and other parts of the body are met with especially in children after an attack of dengue. The bowels are usually not disordered after the attack. Ophthalmia, and eruptions round the edges of the eyelids are sometimes very troublesome.

*Similarity* of the present to the former epidemics of dengue.—There is a close resemblance between this and the epidemic of 1824-25, and what prevailed in the West Indies. The suddenness of the attack, the nature and duration of the fever, the rheumatic affection, and the rash, are the symptoms common in these epidemics.

The epidemic of 1853, which Dr. Goodeve described as Red fever, differs from the present one in many respects. In the former, the rash was scarlatinial, and the pains in the joints and muscles were almost entirely absent; there was extreme redness of the mucous membrane of the oral cavity; whereas,



in the present epidemic, the characteristic features, are the measly or rubeoloid nature of the rash, the extreme painful affections in the joints and muscles; and the want of redness in the oral mucous membrane.

*Non-resemblance* of dengue with measles, scarlatina and rheumatism.—In measles, the attack is generally accompanied with catarrhal symptoms, and the fever is often increased, when the eruptions begin to develop; there is no rheumatic affection of the joints; the rash is more diffuse, and the patches crescentic and more closely set; diarrhoea is almost a constant sequelæ. In dengue, the catarrhal symptoms are entirely absent, the eruptive period is singularly devoid of fever; the rheumatic affection of the joints is characteristic; the rash, though measly, is not so diffuse or in circular patches; and disorder of the bowels is a rare symptom *after* the attack. In scarlatina, the rash is of a different nature, and it appears during intense pyrexia; much redness and inflammation of the oral mucous membrane and the fauces, absence of rheumatic affection of the joints, albumen in the urine, and the fatal nature of the disease, are characteristic of scarlatina. In the early stage of the fever, the temperature rapidly attains to a maximum in both the diseases, but in scarlatina, the hot stage is prolonged for days, whereas in dengue, it subsides in three days. In rheumatism, only the large joints are affected, whereas in dengue, both the large and small joints are implicated; besides, the rash which is characteristic of dengue, is never found in rheumatism.

The characteristic symptoms of dengue may be thus summed up:—

The suddenness of the attack, the distressing pains in the large and small joints and the muscles, the measly rash, and its appearance in the absence of fever; the three-day duration of the pyrexia, utter prostration of strength, and the favourable termination in general.

*Prognosis*—is generally favourable. The disease though alarming and extremely distressing, is destitute of danger to life; cases of death are rare, and this was also the characteristic in former epidemics. To adults in tolerably good health, the disease is rarely fatal, but it occasionally brings on grave symptoms, and even proves fatal to infants and children, especially during dentition. My impression is, that the disease was less in virulence in the beginning of the epidemic, but lately, it has assumed a more serious aspect, and has even been dangerous to life in some cases. I have seen four cases ending fatally within twenty-four hours, but have in none had the opportunity of making proper observations or studying their exact nature.

*Treatment*.—The most interesting aspect of the disease is its treatment. It is a peculiar disease, very alarming in its symptoms, and uninterruptedly runs a certain prescribed course, at times attended with serious complications. No medicine can avert its course, or has any influence in modifying the type of the disease, if it happens to be a serious one. In my experience, the less we interfere, the sooner and the better, the patient comes round. In the first hot stage, cooling drinks, as iced water, lemonade or sodawater, cocoa-nut water, lemon syrups &c, are very agreeable to the patient; cold applications on the head, relieve the headache, and mitigate the sufferings to some

extent; thin arrowroot or sago, with or without milk, should be freely given as nourishment. In especial exceptional cases, with marked symptoms of extreme biliousness, and fullness of the bowels, mild doses of gentle purgatives might be administered with benefit, but much caution should be observed in the selection of the cases. In no case, a routine treatment should be resorted to, as is done in ordinary fevers. In cases of relapse, and where malaria is mixed up with dengue, a few doses of quinine might prove efficacious. The complications when urgent must be treated according to their nature and severity.

I have found the expectant mode of treatment to be the best in cases of dengue; we should never be alarmed by the symptoms, nor be over-zealous and hasty in administering medicines, in the hope of relieving the symptoms, or mitigating the sufferings; but should always patiently watch the progress of the disease, with more confidence in nature, than in the efficacy of our healing art. I have often remarked, that patients, in addition to their intolerable sufferings, are sometimes put to further troubles by our officiousness.

Belladonna has been lauded by many practitioners, as very efficacious in diminishing the sufferings in dengue. I am sorry to tell you, that having given a fair trial of the drug, I have not been able to realize its efficacy in dengue. Among the practitioners, who advocate the use of belladonna, there is much difference of opinion, as to its real mode of action; some say, it has the power to relieve the severe pains, but has no effect on the headache; some again, are of opinion, "that it acts beneficially in relieving or moderating the intense headache," and that, "it

does not appear to have any effect on the muscular and articular pains, but it puts the patient to sleep, and thus tides over many painful hours; it has no effect in shortening the fever;" others again believe, that it diminishes the fever and relieves the head and brain symptoms.

Some practitioners recommend the use of Bromide of Potassium and Conium in convulsions in dengue. I can say nothing against them, not having used them in dengue. Convulsions in children, are often dependent on the irritation of teething, and when this complication occurs in dengue, the gums should be freely lanced, and the child kept in a quiet cool room, tightly covered, and cold lotions applied on the head. Though convulsions in children are very alarming, we need not apprehend much danger during an attack of dengue. Having seen fatal results in cases drugged in the ordinary way, I am not very sanguine, as to the value of therapeutic agents in these cases. We are often consulted to relieve the after-pains, which trouble the patients for long. I seldom prescribe any medicine as the pains generally pass off without much medication.

Various liniments, containing opium, belladonna, chloroform, ammonia, cajuputi oil, and turpentine especially, are prescribed with more or less benefit. My impression is, that if any advantage is derived by the application of these liniments, it is attributable to the friction caused by the rubbing of the parts; and to the fact, that patients with blind hopes of cure, continue the friction for days and weeks together, and the pains by virtue of their nature, having run a certain course for a certain period, gradually subside.



irrespective of the liniments, to which the cure is attributed.

I wish to impress on the mind of every one, that early recourse to habitual diet and cold ablutions is likely to bring on relapses, and make the convalescence more prolonged and tedious. Many from mistaken notions, take their habitual diet and bathe in cold water on the fourth or fifth day, soon after the subsidence of the hot stage of the fever; generally eruptions come out in such cases on the same or the following day attended with fever, and the pains and other symptoms are aggravated; as the usual duration of the disease is from eight to ten days, every precaution should be taken to keep the patients on light nourishing diet, and to prevent them from having recourse to cold bathing within this period.

My impression is, that dengue hardly requires any treatment, and nature is quite competent to complete the cure single-handed. Nature holds the helm of the disease in her own hands, and cautiously and patiently steers its course along the stream of time, and successfully overcoming the various complications, that now and then come in its way, as so many shoals and sandbanks, at last finds for it a safe anchor in the harbour of health. Dengue is a good field for all sorts of practitioners to reap the credit of the cure, and show to advantage the efficacy of their respective drugs. We must be too ungrateful not to allow nature, her due share of credit, which she justly deserves in the management of this disease.

In conclusion, I have to remark, that having suffered myself severely from dengue, and closely watched with special care more than fifteen hundred cases, in

this epidemic, I am led to believe, that beyond simply watching the patient, we are not required much to do in cases of dengue. There are however, exceptional cases attended with serious complications, in which, we are induced to interfere, more out of confidence in the efficacy of our healing art, than in the working of nature, and we are often compelled to adopt such a course, to gratify the universal desire of people for medication. With regard to the after-pains, they seem to baffle all our treatment, and nothing but time and patience can cure them. It would be more wise on our part, to confess our inability to cure the pains than to gain the discredit of failure, after feeding our patients with hopes of cure, and thereby putting them to unnecessary trouble and expense.

Relapses are found to be more common now than in the beginning of the epidemic, most probably owing to the damp weather. My impression is, that relapses are owing more to lack of care on the part of the patients themselves than to the nature of the disease *per se*. People generally have recourse to their usual diet and cold bathing, no sooner they get rid of the fever, and many from their irregular habits, modes of living, and vocations are obliged to expose themselves to the vicissitudes of the weather and to fatigue and over-work themselves, which tend to weaken their system and bring on relapses, which are not fresh attacks of dengue, as many are led to believe, but are merely the continuations of the first attack. Persons who have suffered from dengue, must be very careful to protect themselves from sudden changes of temperature, to observe strict attention to diet, to abstain from all stimulating or



intoxicating drinks, and to avoid overwork, both physical and intellectual. In some cases, the patients become very weak and anæmic and drag a tedious convalescence from constant relapses; in such cases, vegetable bitter tonics, with quinine, iron, port wine, strychnine &c, can be prescribed with advantage.

In cases of acute inflammation of the joints, attended with redness, swelling, and the most agonizing pains, I have found counter-irritation with weak solutions of nitrate of silver, to have much effect in reducing the inflammation and preventing it to run on to suppuration.