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International Health Exhibition,

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ON THE TREATMENT OF CHOLERA EPIDEMICS IN INDIA.

By SURGEON-GENERAL JOHN MURRAY.

CONFERENCE ON TUESDAY, JULY 22, 1884.

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ON THE TREATMENT OF CHOLERA EPIDEMICS IN INDIA.

IN the present state of excitement and panic in France and on the Continent, and with the prospect of cholera soon appearing in England, I think it would be useful, and tend to avert similar unreasonable acts, to give a short account of how cholera epidemics are treated in India, where absence of epidemic attacks is the exception to the rule in ordinary years, and where the mortality is recorded by hundreds of thousands, and in 1877 amounted to 627,579. An annual mortality exceeding 100,000 is not uncommon; but, were cholera not restrained by the measures pursued by Government, it would be much greater.

Panics are very dangerous in depressing the spirits of the individual, and leading in many instances to the neglect of attendance on, and attention to the sick, and even to the desertion of the dying and the dead. These panics arise from ignorance of the disease, combined with want of trust in the administration of the Government, and lack of faith in the executive or doctor. The disease is very fatal, and in many instances medical aid is of no avail, especially when late in being applied; but experience shows that when applied in the earlier stages of the disease very simple remedies will check, and generally cure, a large proportion of the cases. It is on this point I wish particularly to call your attention to the practice in India. This is not a time or place to argue on the various theories of the disease, and whether Dr. Koch's microbe is the true cholera microbe, or only one of the legion of microbes visible in cholera evacuations, which further research may find in many situations unconnected with cholera; nor to

discuss M. Pasteur's hope of cultivating the germ, and producing a milder form of cholera, which, like vaccination in small-pox, might prove a protection from the disease. In so far as a severe attack of cholera affords no protection from subsequent attacks, it is not probable that a milder attack of cholera would be more efficacious. There are one or two practical points which guided the measures of Government in 1861 which will elucidate the practice then enforced, and which still prevails. The first is, the early recognition of the presence of the disease. Up to that date the stage of malaise was not usually recognised, while the second stage of diarrhœa was loudly denied by many, who stated that cholera could only be recognised when collapse and suppression of urine were present. It is my opinion that those who do not diagnose cholera till the stage of collapse has arrived, will sacrifice many sick who might have been saved. The earlier the disease is diagnosed, the simpler and milder the remedies required to assist Nature to conquer it. The medicine recommended and generally used in India is a mild carminative pill, which if taken needlessly will do no harm, but which when taken early has checked the disease in tens of thousands of cases. If the cholera pills are not given till collapse has supervened they are powerless, as well as the strongest stimuli. I do not consider the chemical ingredients of these pills as antidotes to the poison, but they are stimulants to the stomach whilst its sensibility, though impaired by the presence of the poison, is not paralysed, as it is in collapse. The action of the medicine is to promote the action of the stomach in the secretion of the gastric juice, which is known to be the most powerful agent in destroying all the microbes, or lower vitalities, which accompany or produce putrefaction or fermentation. The excessive rapidity with which these lower vitalities increase when unrestrained is a fact of natural history; they multiply by tens of thousands in a few hours. The stomach and intestines appear to be the primary seat of the germ. Should this view be correct, it would explain the extinc-

tion of the disease in the earlier stages without critical evacuations, by the increased flow of gastric juice, caused by the carminative action of the medicine causing their destruction and digestion. When cholera runs its course the inner or involuntary life becomes paralysed, whilst the outer or voluntary life continues in action, and the mind remains clear till life slowly fades away. The practice in India, to which I now allude is, the general distribution over the infected country of the carminative cholera pills referred to. They are distributed through the police, with instructions for their use, and an earnest command for their early application. The success of these measures is reported by all the civil authorities as most satisfactory, whilst any want of success is equally attributed to delay in their use till the disease had advanced to the stage of collapse. The treatment of the disease after this stage can only be conducted by the members of the medical profession, and only effectually by those who have assiduously studied the disease and observed the action of the different remedies in aiding Nature to overcome it. With regard to the prophylactic treatment, the measures employed are directed to restrain the dissemination or spread of the disease from the sick to the well by the isolation of the affected, and by the removal of causes which experience has proved to facilitate its development, such as non-sanitary states, of crowding, impure air, water, &c.

The question of the communicability of cholera through human intercourse was answered by the Official Reports of the Hurdwar epidemic of 1867, when an assemblage of 2,800,000 pilgrims was attacked in April, and in returning to their homes progressively spread the disease in all directions for 500 miles over the N. W. provinces and the Punjaub, and extended it for 500 miles further to the west in Scinde. This point was confirmed by the Hurdwar epidemic of 1879 when 800,000 pilgrims were assembled and attacked in a similar manner; and again spread the disease all over the country, where it appeared at nearly the same dates, concomitant with the arrival of

the pilgrims. The chief difference was that it arrived a few days earlier in some of the distant Punjaub districts and two months earlier in Scinde, as the railway which was used by the Pilgrims in 1879 was not constructed in 1867, and many of the dead and the sick from cholera were removed from the trains along the line. In none of these places was the disease present previous to the arrival of the pilgrims, and in some parts of the Punjaub it had not been present for ten or twenty years. I have, therefore, no doubt that the disease is communicable, but the channel by and through which it is communicated is often doubtful. Our experience in India shows that personal contact is not the ordinary channel, as proved by the relative exemption of hospital attendants, and more clearly by the great proportion of villages attacked in severe epidemics in which only one death is recorded, or when only two appear, as in many instances these were two affected pilgrims or visitors. In four late epidemics (1877-8-9-80) there were 154,986 villages attacked. In 58,972 of these there was only one death, and in 20,596 only two deaths, and yet in these years the total mortality was 1,380,226.

A thorough knowledge of the channels through which the disease leaves the body, as well as the channels through which it enters, and also of the changes through which it passes when outside the body, and what develops or impedes its action, and to what articles it most readily attaches itself, are important questions, a knowledge of which is essential to those who legislate for the protection of the people from this fatal disease, but they are not points suitable for discussion here, even if time admitted it.

The practical part of the subject, which I should like to allude to now, are the means employed by the Government of India for protection from the disease.

For troops and prisoners the measure that has proved most beneficial has been removal into camp, with the isolation of the affected, and prompt treatment. But these measures are not applicable to the civil population of large towns, and hospitals are there provided for the

treatment and isolation of the sick and proper medical attendance. Medicines are distributed all over the towns by the hands of the police, with instructions as to their use, and the necessity of early application is enforced, as a delay for one or two hours in many cases involves the safety or death of the affected. Similar measures are applicable here should the disease reach London, and a knowledge that the authorities are prepared for its advent would ward off a panic, such as now spreads so rapidly in other countries.*

* The medicine most generally used is composed of one part opium, two parts asafœtida, three parts black pepper, made into 5 gr. pills. This will generally cure, or at least it will delay the course of the disease, till medical aid can be procured. These pills relieve the *spasms* which obstruct the flow of bile through the hepatic duct. In fatal cases the gall bladder is always found distended with dark bile, which is entirely wanting in the intestines. Experiments prove the bile to be the most powerful in restraining the development of all the lower vitalities, including those found in cholera evacuations.

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