

WOODWORTH (J.M.)

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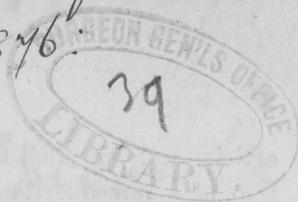
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## Reviews.



*The Cholera Epidemic of 1873 in the United States of America.*  
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THE cholera epidemic of 1873 in the United States of America presented a great opportunity for adding to our knowledge of the disease. The area is large, the medical profession is widely represented over the country, and the people are intelligent, quite able to observe facts, and to aid materially in their collection. Such a state of things differs greatly from what we have to deal with in this country, where there is often but one qualified medical officer among many hundreds of thousands of the population, where the people through ignorance or apathy concern themselves but little with what is going on, and where there is more or less unwillingness to tell what they know, lest it should, in some mysterious way, be afterwards turned to their disadvantage. The circumstances in the States were thus peculiarly favorable for an extended and thorough enquiry. The matter moreover was taken up by Congress, the assistance of the Surgeon-General of the army was called in, and from numerous civil practitioners also aid was obtained. The whole result is given in the volume of more than 1,000 pages which is before us. The work consists of several sections by different authors. The first is entitled "The Introduction of Epidemic Cholera into the United States through the agency of the mercantile marine with suggestions of measures of prevention;" then follow chapters on the clinical history, the etiology, the prevention of cholera and on the origin of the epidemic, with narratives of the cholera in different States and in the army. Next comes a history of the Travels of Asiatic Cholera in Asia and Europe, by John C. Peters, M.D., of New York City, and, lastly, there is a section devoted to the bibliography of cholera. It would be impossible to discuss all these points in the present

article, and we shall therefore confine ourselves to a consideration of a few questions connected with the origin and spread of cholera as illustrated by the facts of this epidemic. And here we cannot avoid expressing our great regret that the authors of this report did not adhere more closely to the facts, instead of wandering so largely as they have done into the realms of theory. A brief abstract of the whole evidence showing how far the events, as chronicled by the different reporters, support any conclusions would have been most useful, but there is no attempt at any thing of the kind. The opening chapter, while it states that "no attempt is made in this summary to decide questions which are yet *sub judice*, to discuss mere theories," plunges at once into a series of propositions which are mere theories and nothing else, that "malignant cholera is caused by the access of a specific organic poison to the alimentary canal, which poison is developed spontaneously only in Hindoostan, that this poison is contained primarily in the ejections, vomits, stools, and urine of a person already infected with the disease," and so on. The mere re-enunciation of such dogmas, unsupported as they are by any evidence of the smallest value, does not make them any nearer the truth than they were before. The first proposition is very much the same as the first proposition of the late Vienna Conference, but if it be dissected, what does it amount to? When we speak of disease arising spontaneously, we do not mean that it arises without a cause, but merely that it is not the product of a previous case of the same disease; in other words it is the result of a condition or combination of conditions, some it may be in the persons, and some in the place. The proposition in other words means to say that the condition or conditions capable of producing cholera exist only in Hindoostan, but what is this condition or combination of conditions, and where are we to draw the line defining their habitat? In the Upper Punjab, cholera is a very rare disease, when compared with lower Bengal. Certain places in India are notorious for the violence with which they are attacked by cholera:

others are equally well known to suffer comparatively little. We do not know the condition or conditions which produce cholera or regulate its intensity, and until we know what they are, it is merely begging the whole question to assert that they can never appear except in India. If, with all its assumption of wisdom, the proposition means merely to express the writer's belief that out of Hindoostan the propagation of cholera is due to contagion and contagion only, we enter on a new phase of the question, and the matter becomes one entirely of evidence. The would be scientific dress with which it was clothed has disappeared. It is very far from proved that there is any one specific cause of cholera, still less that it is organic, or that it acts by access to the alimentary canal, or that it is spontaneously generated in one part of the world and not in others. Equally unsatisfactory is the second proposition that this organic poison, the very existence of which is assumed, is contained primarily in the ejections. The statement is repeated again and again in the course of the different reports of which the volume is composed, but satisfactory proof of any such fact is altogether wanting. The case for the virulence of the discharges, and in fact for all the propositions as given in Chapter II under the head of "the Etiology of the Cholera Epidemic of 1873," rests not on the facts of 1873 but on the collected literature from all parts of the world. Indeed so far as it adds any new facts, this chapter might have been written just as well before the epidemic occurred. Macnamara's book on Cholera is largely drawn on, and more especially the particular instance in which nineteen men are stated to have drunk water containing the dejecta of a cholera patient, and five to have been attacked by the disease. The whole account of this remarkable event occupies but a few lines in Macnamara's treatise, and yet it forms the basis of a great part of his own conclusions, and has been accepted in Europe and now again in America as crucial proof of the infective nature of cholera discharges. The statement did not attract serious attention in Calcutta, nor would it be

deserving of any notice now, but for the ready acceptance which it has gained among even high authorities in all parts of the world. There are few things more remarkable in the literature of cholera than the unquestioning manner in which this acceptance has been rendered. The facts were doubtless very convincing to Dr. Macnamara, but before they can be accepted as evidence of any value, it is essential that they shall all be thoroughly sifted so as to avoid all possibility of mistake. The date and precise place of occurrence, the history of cholera in the vicinity, the previous history of the persons afterwards attacked, the precise symptoms of the patient from whom the dejecta which found their way into the water had been derived, the exact character of the ailment from which those attacked suffered, whether it was true cholera or not, the number who died, and many other details must be carefully scrutinized before the accuracy of the statement can be admitted or any conclusions based on it accepted. In any other department of science such a course would have been insisted on before a bare assertion, no matter how positive, was received as a fact, but in medicine there is far too little of strict logical induction and statements if they but chime in with the doctrines of the day are very readily not to say greedily devoured. Even if all the facts were substantiated beyond a shadow of doubt, there still remains the very intricate question how far the attack of the five men is to be ascribed to the water contaminated with cholera discharges. Was this the one only condition which distinguished these persons from all the others living beside them, and even if it be so, what proof have we, that similar results might not have been produced equally well if the water had been contaminated only with ordinary organic matter in a state of decomposition? The other evidence on which it is sought to show the specific poisonous character of cholera discharges is of no more value than that adduced from Macnamara. Thiersch and Burdon Sanderson's white mice are brought to the front just as if Ranke had not shown that similar results may

be obtained by feeding these animals on slips of paper unimpregnated with cholera dejecta or any thing else. Professor Högye's experiments are adduced to show that rabbits exposed to cholera discharges which had not been disinfected, died of cholera, and Professor Botking is quoted to prove how specially virulent is the urine of a cholera patient. We confess we never heard of Professor Botking. Urine is not generally secreted by cholera patients, and he must have had some difficulty in performing his experiments. But all such statements are of no moment compared with the careful and continuous experiments which have been carried on by Drs. Lewis and Cunningham in Calcutta during the past seven years. They have shown that so far as can be judged by injections into dogs cholera discharges cannot produce cholera, and that the effect they do produce, differs in no respect from that produced by ordinary faecal matter. They have shown in fact that cholera-matter beyond containing a large proportion of corpuscles not unlike the white blood cells in appearance, contains nothing specific that can be discovered by the highest microscopic powers or by experiments, and that neither vibrios nor bacteria are distinctive of it; but in this report all the old fallacies are reproduced just as if Drs. Lewis and Cunningham had never carried on their researches, and the only passage from their writings which is quoted is a few lines which taken by themselves seem to favor the specific nature of cholera discharges to which doctrine their labors as a whole are diametrically opposed. The evident tendency throughout this report to cite every thing favorable to contagionistic views and to keep in the back ground every thing which tells against them is very marked and it is most discreditable. The Indian reports are referred to only in so far as they support the doctrines adopted by the writer, and the whole mass of facts which it is so difficult to reconcile with contagion is quietly ignored. Drs. Lewis and Cunningham's carefully recorded facts are left out, but Dr. Murray's *opinion* which rests on no facts that "in some instances the cholera poison enters the system through the skin,"

and that "the profuse cold perspiration of a cholera patient from its peculiar and characteristic odor is an evidence of the elimination of the disease by the same means," receives prominent notice! In Chapter III on "the Prevention of Cholera," another effort is made to support the truth of the propositions, but it rests on a merely theoretical basis and not on the results of experience. We are told "the safety of a community threatened with an outbreak of cholera is to be found in the full recognition of the infectiousness of the disease," and that in thorough disinfection of all cholera-matter and of all places in which a cholera-stricken person may have been, must especial reliance be placed, but we are not favored with any instances to prove that such measures ever cut short an outbreak. Our experience in India on this point is not in accord with this theoretical teaching. There is no community in the world which is more carefully watched and cared for than a European regiment in this country in time of cholera. Every suspicious case is watched for and removed to hospital without delay, all discharges are sedulously treated with disinfectants, every precaution is taken to isolate the sick, to vacate the affected quarter immediately, and to cleanse it thoroughly before it is occupied again, and it is very proper that such precautions should continue to be taken. But there is no evidence that such of them as are directed against personal contagion and not against locality have ever cut short an outbreak of cholera: on the contrary the disease has continued in spite of them, and instead of diminishing has acquired increasing strength. Individual cases no doubt occur, but they are to be found just as frequently in villages where no disinfection can be practised as in barracks and hospitals where it is carefully carried out. The only lessons taught by Indian experience as to the best mode of dealing with cholera are, that a good sanitary condition affords the best chance of escape, but that once cholera appears in an epidemic form, the only resource likely to prove of real benefit is removal from the affected locality.

From the uncompromising way in which opinions are advanced in this report, it would naturally be supposed that the whole medical profession of America are at one on the many vexed questions connected with cholera, that they are unanimous in their testimony as to contagion, communication, the presence of a specific poison residing in the dejecta, and, what is still more important, that the facts recorded by them, and which occupy more than four hundred pages of this work, all go to support these doctrines. But it is not so; the opinion in many cases is reserved, in not a few it is altogether opposed to such ideas. For example, Dr. Quinn, the Health Officer of Cincinnati, writes thus (page 342) :--

“Cholera was in New Orleans as early as February 9th, 1873. It has been pretty conclusively proven by the health authorities of New Orleans that the epidemic of 1873 was not imported into that city by vessels from any European or Transatlantic port. From New Orleans the disease travelled as far north as little Rock, on the Arkansas; Davenport, on the Mississippi; Yankton, on the Missouri; and Pittsburgh, on the Ohio Rivers; following, apparently, the larger water-courses, and up the tributaries of the Ohio into the interior of Tennessee and Kentucky. It also visited interior towns situated upon small streams of water, and made its appearance in Chicago and Cleveland, upon the southern borders of our large lakes. In its travels northward it frequently avoided one commercial point to settle in another and more distant one, although steamboats from infected districts had landed at, or passed by, the avoided towns, and although communication by other modes of travel was uninterrupted. At later periods it broke out at some of the points which had been thus passed. It was in Louisville eight days before it broke out in Evansville. It passed Owensborough, Ky, two months before it broke out at that place. It made its appearance in Burlington, Iowa, on the same day as in Saint Louis, passing by Hannibal, where it did not appear until nineteen days afterwards. It was in Chicago nearly two months before it was in Cleveland, and one month before it was reported in Saint Louis. \* \* Although constant and daily communication was kept up from the first appearance of cholera in New Orleans between

Cincinnati and cities on the Mississippi and Ohio Rivers where the disease was prevailing, the first fatal case in Cincinnati occurred on June 14, only two days after the disease broke out in Evansville, three hundred and fifty miles below."

Again he says :—

"No connection can be established between the first fatal cases of cholera and any steamboat landing, railroad depôt, imported cholera patient, or person from a locality where the disease had been prevailing.

\* \* Full histories of the first fatal cases were obtained at the time, or soon after their attacks ; and the fact was well established that the parties were unacquainted with each other ; resided in different parts of the city ; had not visited abroad ; received no visitors from places where cholera had been prevailing ; and associated with no persons who had diarrhoeal symptoms of any kind. Inquiries into the histories of the subsequent cases revealed, for the most part, a similar state of facts."

The epidemic is spoken of generally as the epidemic in the United States, but its virulence appears to have fallen chiefly on the valley of the Mississippi. On this point, however, exact information is wanting. There is nothing to show the precise area over which the disease appeared. The statistics of prevalence either in individual states or in the cities and towns which lie within them when given are meagre, and in many instances they are not given at all ; the population is seldom stated, so that it is impossible to form any accurate estimate of the general distribution of the cholera or of its comparative incidence in different places. The facts regarding different outbreaks are so wanting in details that they are of little value as evidence. For example we are told that in Tevanon Wilson county on "July 17th three Negro women, who had been at Nashville, were taken with cholera ; two died within twenty-four hours, one made a tedious recovery." The next cases were seven on the day following. But when did these women leave Nashville ? When did they arrive in Lebanon ? Had they come back together or at different times ? What was the exact hour each was attacked, and what connection, if any, had the subsequent

seven cases with these women? Numerous examples of the same kind might be given. Many instances no doubt are cited in which members of the same family were attacked, but nothing is said to show how far these cases might with reason be ascribed to the fact that all were living in the same place and under similar conditions. The mere statement that travellers were often the first to suffer, although the fact is well deserving of attention, is in itself no proof of spread by importation. Travellers are often in the very condition to succumb to unhealthy influences. They may also be more liable to be affected by being brought suddenly in contact with epidemic causes to which the ordinary inhabitants have become gradually accustomed, and which have not yet acquired sufficient strength to affect them. However this may be, the susceptibility of travellers to attack has long been observed quite apart from all vexed questions of contagion. The reporters speak very positively of the disease having been carried over the country by human intercourse, but the evidence in this point is very far from convincing. Not only are the narratives as we have already said wanting in precision, but grave doubt attaches to the statements made. In Chapter I, the author while stating without any qualification that the disease was carried northward, admits that considerable discussions prevailed in the States as to whether the disease was of Asiatic or American origin, and adds "the key note to this discussion will be found in the obscurity which surrounds the infection of the initial cases." This remark, while illustrating very forcibly the purely theoretical point of view from which the whole subject is discussed, also fully bears out what has been already said. Great obscurity certainly does attach to these initial cases. Even the first seizures in the country, those of February at New Orleans, are by no means traced to importation, and the further progress of the epidemic is far from proved to have been dependant on human intercourse. Credit is taken for quarantine as having saved New York from the importation of the disease by sea, but in what way is

it to be explained that it was not imported into the city by land? The States, we are told, are traversed with railways like a gridiron, and land traffic could not possibly be controlled by any system of medical inspection. The portability of cholera is a question which must still be regarded as *sub judice*, but the question can never be settled by such imperfect data as those which are contained in this report. The American epidemic presents the same mysterious anomalies as are so often observed in India. Human intercourse is very constant and rapid over the States, and yet there were areas of great prevalence and areas of exemption; cases in which cities suffered much in particular quarters and escaped in others; instances in which the violence of an outbreak fell on one section of the community, and left others almost unscathed. If the report had mapped out these areas, if it showed all the facts in a clear concise form distinct from opinions, if it had weighed the evidence for and against the various current opinions of the day in a calm and impartial manner, a great benefit would have been conferred on the profession and the public. As it is, a grand opportunity has been lost. Indeed it has been more than lost, for imperfect and one-sided representations of facts, such as it contains, only do mischief.

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