

The sanitary lessons of Indian epidemics : letter from Inspector-General R. Lawson.

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THE SANITARY LESSONS OF INDIAN EPIDEMICS.

LETTER FROM INSPECTOR-GENERAL R. LAWSON.

[To the Editor of the Medical Times and Gazette.]

SIR,—In your remarks on the paper of Dr. Cuninghame, on the "Sanitary Lessons of Indian Epidemics," in the *Medical Times and Gazette* of July 21, you object to his statement that there is no evidence to prove that cholera is caused by any special contagium developed in the bodies of the sick, and communicated, either directly or indirectly, by human intercourse, on the ground that in Europe, and from Europe to America, it has invariably followed the great routes of trade, and that in countries which have direct communication by sea only with others where it is endemic or epidemic, it has invariably made its first appearance in those seaport towns which lie on the routes of such intercourse; and as constantly among persons just arrived from infected ports abroad. As Dr. Cuninghame has left England on his return to India, and it is of especial importance, at the present juncture, that we should confine our theories of the causation and mode of transmission of cholera to what we can establish by logical inferences from ascertained facts, I venture to draw your attention to some facts bearing on this question you have inadvertently overlooked.

The epidemic of 1873 in the United States commenced at New Orleans in February, and, during the summer, extended northwards along the valley of the Mississippi, and eastwards and westwards along those of the Ohio and Missouri, respectively, but did not pass into the valley of the St. Lawrence and great lakes, or cross the Alleghany range, so that the whole Atlantic seaboard and the country south of the lakes remained exempt, save at the south-west corner of Lake Michigan, where Chicago came within the epidemic field. The earliest known case occurred on February 8, in a man who came from Pensacola two months previously, and had since resided in New Orleans; the second, on the following day, was in a man who had lived in New Orleans four years: these men lived at a considerable distance from,

Feb 25

and had had no communication with, each other. The next case occurred on February 27; and from that date to March 31, inclusive, eighteen attacks were recorded: of these, all except four were residents in New Orleans, though at points much separated from each other; of the four non-residents, two came from the Washita River above New Orleans, the other two from the country, the place not specified, but they were not recent arrivals from Europe. The Board of Health at New Orleans was most anxious to obtain exact information on every point connected with the origin of the disease, and investigated "all modes of infection and importation, as by visiting ships, the washing of clothing for persons connected with shipping, visiting sailors' boarding-houses, contaminated drinking-water, etc.," not only in these instances, but in every subsequent attack during the outbreak, and was led to the conclusion that it was endemic and had not been imported. Surgeon Van Buren Hubbard, U.S.A., who made an investigation in 1874, at the instance of the central Government, admitted, "It has been found utterly impossible to establish the arrival of individuals who were personally affected with cholera," but, instead of stopping there, he fell back on theory where facts failed him, and expressed his belief that the disease must have been introduced by emigrants from Europe, for which he offered no better reason than that quarantine had been enforced with laxity, and that cases of cholera might have passed without detection.

Three instances occurred during this epidemic in which parties of emigrants from Europe, landed at New York in good health, and proceeded to their destinations in the Western States, where, after opening the packages containing their spare clothing and bedding, which had not been exposed to the air since their departure from Europe, they were attacked with cholera; and the inference was drawn that these articles had conveyed the *materies morbi*, which, on being diffused, caused the disease among them. The first of these parties were Swedes, who had passed three weeks at Bergen, in the island of Rugen, in May, and early in June sailed for New York, where they arrived on the 26th of that month; the second were Dutch, who had left Tubbergen, on the eastern frontier of Holland, on May 31, for Rotterdam and England, and reached New York on July 5. The third were Russians, from the South; neither the exact locality from which they came, the date of their leaving it or of their arrival at New York, are given, but they reached their destination, Yankton, in Dakota, about August 25. Now, on tracing the distribution of cholera in Europe in 1873, it is found that the disease did not appear in Rugen that year at all, neither was there any in Holland

in May; in its progress from Poland and Bohemia, where it had been during the winter, it reached Frankfort, Magdeburg, and Berlin in the middle of July only, though in Hamburg the first case was met with on June 21, and in the next three weeks there were only six fatal cases. In these two instances, then, the theory of importation breaks down at the commencement, there having been no cholera at the points of departure to supply the required *materies morbi*. The want of information as to dates and places, in the case of the Russian party, prevents a specific investigation in their instance, but the Russian returns show that several of the governments bordering on or near the Black Sea were free from cholera in 1873, and most of the others had it in a very slight degree only, and comparatively late in the season; so that even the probability of infection of bedding, etc., in this case is of the most shadowy description. When it is considered, however, that the party on their way from New York had to pass through an extensive range of country actually under the epidemic at the time, it will be seen it is impossible to exclude the operation of the causes of the disease they were there exposed to, which must have been done before it could be accepted as due to *materies morbi* brought from Europe. The above details are taken from the official Report "On the Cholera Epidemic of 1873 in the United States," Washington, 1875. A notice of the Report may be seen in the *British and Foreign Medico-Chirurgical Review* for July, 1876.

Turning now to England, there were several manifestations of malignant cholera in 1865, when the disease was extending over the South of Europe as an epidemic, in which form it did not reach this country until the following year. These manifestations were investigated minutely at the time, and the results are of particular value in this inquiry. The chief outbreak was at Southampton and its immediate vicinity, with contemporaneous manifestations at Weston Common and Bitterne, places two miles from Southampton, in different directions. A case had occurred in Southampton on August 12, which Dr. Langstaffe, who treated it, first thought to be a severe attack of cholera nostras, but subsequently was inclined to consider as true Asiatic cholera. The first case, recognised at the time as malignant cholera, appeared on September 22 in a man named Rose, who resided at Brewhouse-court, five furlongs from the railway station. Rose had been affected with diarrhœa from the 17th, and died on September 24th. On the 23rd a lad named Hill, residing at Weston Common, was attacked, having had diarrhœa for two days previously; and on the 26th his father and sister were also attacked with cholera. On the 27th a man named Stanley and his son were attacked at Bitterne, the

latter having had diarrhoea since 17th, and the former since the 24th. On the 28th there was another attack of cholera in Southampton; and the disease went on until November 4, when, including all the localities named above, there had been sixty persons attacked. The late Dr. Parkes investigated this outbreak at the instance of the Local Government Board, with all the zeal and ability which characterised him, and in his narrative of it in the Eighth Report of the Medical Officer of the Privy Council (from which the above details are taken), in summing up the results, he stated:—
 “The origin by an unknown epidemic influence, alone or coinciding with local conditions, presents formidable difficulties, even if we cannot quite reject it. The origin by importation is deficient in precision of evidence.”—(Page 436.)
 In short, though firmly believing in the possibility of the cause being introduced in this way, he utterly failed to trace importation in any instance.

About this time another outbreak took place at Theydon Bois, in Essex, which, had the facts connected with it come fairly before Dr. Parkes, might have influenced his opinion regarding epidemic influences. Mr. and Mrs. Groombridge, from Theydon Bois, had been at Weymouth for their health for fifteen days, when, on September 23, the former passed some time on the hills overlooking Portland harbour, exposed to a strong breeze from the sea; while in this situation he became indisposed, and diarrhoea, sickness, and cramp ensued, from which he suffered on that and the following day. On the 25th he was still ailing, but able to travel, and he and his wife returned to Theydon Bois by railway from Weymouth to Southampton, and on to London, and neither seems to have left the station while at Southampton. On reaching home, Mrs. Groombridge (aged fifty) complained of pain in the back and some discomfort in stomach and bowels, which she attributed to the shaking of the train. On the 26th diarrhoea ensued, followed by sickness and cramps on 28th, and collapse on 29th. Reaction commenced on 30th, secondary fever succeeded, and she died on October 11. On September 30 a daughter, aged eight, was attacked with cholera, and died the same night; and in the next week six other persons of, or immediately connected with, the family contracted the disease (including Mr. Groombridge himself on October 6), and some others followed. It was subsequently found that the soil-pipe from the water-closet leaked into the well from which the water for household use was drawn, and from the appearance of the spot this seemed to have been going on for a considerable period.

Now the question arises, Where did Mrs. Groombridge contract cholera? Mr. Radcliffe was informed by the local medical practitioners and others, that neither epidemic

cholera, nor anything resembling it, choleraic diarrhœa, nor autumnal cholera, had been observed at Weymouth, Portland, or Dorchester in September, 1865 (*Transactions of the Epidemiological Society*, vol. iii., page 95). At Southampton, as already mentioned, the first attack of cholera (at this time) was on the 22nd, followed by death on the 24th, at a point five furlongs from the railway station; and a second case occurred at Weston Common, two miles from Southampton; but as neither Mrs. Groombridge nor her husband left the station or railway, communication with either was out of the question; and from Southampton to Theydon Bois no case of the disease was known. On reaching home it is highly probable that the use of contaminated water from the house-well aggravated, if it did not excite, Mrs. Groombridge's diarrhœa; but as, up to this time, no cholera evacuation could have had access to it, the so-called *materies morbi* was wanting, and the theory which would account for the attack by means of this breaks down. It may be asserted that Mr. Groombridge's attack at Weymouth was one of cholera, and that the well was contaminated by his evacuations; but, even if this were so, it only removes the difficulty of accounting for the first case from his wife to him, and the evidence is equally conclusive against his having contracted it from a previous case as with her. The evidence, then, leaves no alternative but to fall back on epidemic influence coinciding with local conditions—a combination Dr. Parkes admitted he could not quite reject. That the local conditions were unusual at the time around Theydon Bois is indicated by the fact that several cases of common sporadic cholera occurred in the neighbouring districts of Epping, Harlow, and Mitchingham, quite unconnected with the Groombridge family.

It is obvious that as the combination of epidemic influence with local causes gave origin to one case, under favourable conditions it may produce an epidemic; and, as the epidemic factor is necessary to the result, no higher claim can be made for the cholera evacuations in evolving it, than for other forms of organic matter undergoing change—such as ordinary sewage, tainted meat or fish, or overripe and acescent fruit, or even sulphate of magnesia or other purgatives, the employment of any of which is well known to be very hazardous when cholera is present, and which cannot be regarded as containing the *materies morbi* of the disease as derived from the bodies of those labouring under it. The recognition of the Epidemic Influence not only enables a rational explanation to be given of all the facts detailed above (both in America and at Southampton), but accounts for many other outbreaks of cholera for which no importation could be made out; and no theory which does

not take cognisance of it can be regarded as embracing the whole forces in operation. It may be said we do not know the intimate nature of Epidemic Influence. True; neither do we know the intimate nature of gravitation, but we recognise its existence, and have become acquainted with the conditions under which it operates, which information we employ to meet the requirements of daily life as they arise. So it must be with Epidemic Influence. Dr. Cuninghams' Indian experience has led him to certain practical conclusions involving some of these conditions, and if we in this country wish to test their correctness, we can only hope to do so, with success, by analysing critically such evidence as presents the facts in a form that admits of our excluding what is non-essential in the combination of circumstances by which they are so frequently accompanied. The analysis of facts from independent sources here made is altogether favourable to Dr. Cuninghams' views.

I am, &c.,

ROBERT LAWSON,
Inspector-General of Hospitals.

London, July 26.

[The position of the agnostic is *de facto* unimpugnable. But all that Mr. Lawson's letter proves is, what nobody denies, that in certain cases it was not possible to discover the origin of the outbreak in importation. The same might be shown in countless instances of diseases which, like small-pox and measles, are generally communicated by immediate contact with affected individuals. Much more probable is it with those which, like cholera and enteric fever, are mostly propagated by water and ground-air infected by others who have gone before. But no number of negative cases—cases in which information is simply wanting (for Mr. Lawson cannot disprove the possibility of its importation into one country when it was raging in others with which intercourse was going on),—no number of such cases can invalidate the conclusions to be drawn from numerous examples, for which we would refer Mr. Lawson to the same American report, in which the facts are positive and irrefragable—*e.g.*, that at Altenburg. But if Mr. Lawson will read page 101, he will find that the epidemic at New Orleans was by no means of the type with which he is so familiar in India, which now rages in

Egypt, or which visited Europe and America in 1832, 1848, 1854, 1865-66, and 1872-73; but resembled rather the severe diarrhoeas which prevail everywhere in hot weather among insanitary surroundings. The symptoms yielded speedily to treatment, especially morphia injection; the mortality was very small, being variously estimated at 3 to 12 per cent., and the severest cases rarely ended fatally. If so, not only Mr. Lawson's conclusions, but his premises, fall to the ground. As to the German and Russian immigrants, though it would be hard to prove that any part of Eastern Europe was entirely free from cholera, there is no need to assume that they brought it with them. It is enough that they travelled through an infected district when in a susceptible state from fatigue, and probably want and dirt. —*Ed. Med. Times and Gaz.*

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THE SANITARY LESSONS OF INDIAN EPIDEMICS.

LETTER FROM INSPECTOR-GENERAL R. LAWSON.

[To the Editor of the Medical Times and Gazette.]

SIR,—While thanking you for the readiness with which you inserted my letter of July 26 in the *Medical Times and Gazette*, I deem it necessary to offer the following remarks on one point in the observations you appended to it. You refer me to page 101 of the Report on the Cholera Epidemic in the United States in 1873, to show that the disease at New Orleans was not of the type common in India, or which now rages in Egypt, but resembled the severe diarrhoea which prevails everywhere in hot weather among insanitary surroundings; and from this you consider that not only my conclusions, but my premises, fall to the ground. Now, the disease commenced in February, and up to the beginning of April, when the weather could not be called hot, there had

been "thirty-one cases, of which two (2) were recoveries" (Report, page 97). This does not indicate a slight form of disease, to begin with, whatever it became subsequently as the usual season for diarrhoea came on.

Again, as to the relation in which the first cases stood to the subsequent spread of the disease, and as to its nature, I refer you to page 1 of the Report, where it is stated that in 1873 cholera prevailed throughout the valley of the Mississippi, commencing at New Orleans, from which it extended northwards, and became epidemic at all points attacked. The vast majority of the medical men who were engaged in combating the disease were unanimous in pronouncing it Asiatic cholera. A second class—respectable, both numerically and intellectually—recognised the disease to have been cholera in a fatal form, but of American origin; while others regarded it as a pernicious bilious or malarial form of fever. The general consensus of opinion, then, was that the disease was a fatal form of cholera—a conclusion which few who have perused the Report carefully will be inclined to doubt.

These facts place my premises regarding the outbreak at New Orleans beyond question, and I must leave your readers to form their own opinions as to whether my mode of treating these premises, or that you seem to recommend, is most in harmony with the modern spirit of research, or most likely to enable them to clear away the obscurity which now envelopes the mode of origin and of spread of cholera.

I am, &c.,

ROBERT LAWSON,
Inspector-General of Hospitals.

London, August 6.