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SUGGESTIONS CONCERNING CHOLERA.

MUSEUM OCT 14 1884 OF HYGIENE.

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Suggestions Concerning Cholera

FROM THE STATE BOARD OF HEALTH OF CONNECTICUT.

Asiatic Cholera has by competent authority been declared to have commenced its deadly progress westward. The same authority has announced that its spread over the European continent is a certainty so far as human foresight can determine. The flight of tourists and terrified citizens who can afford to leave their homes is added to the multitudinous risks for the spread of the disease arising from the commerce and intercommunication between all civilized countries. The history of cholera in America shows that its reappearance is more than probable as the facilities and possibilities for its introduction have increased rather than diminished. The immigration from the Mediterranean ports has rapidly increased and is now a constant source of danger. The ocean has never been a sufficient barrier, and the resources of sanitary science are too much disregarded in times when no epidemic threatens to be suddenly made efficient. Observers who carefully watched the progress of cholera in Europe in 1865, and its invasion of the United States, affirm that the same threatening aspects are presented as in August of that year. While the duty of guarding against the admission of cholera devolves first of all upon the quarantine officials of the states bordering upon the Atlantic, yet

the lesson of the outbreak in 1873, in an inland state, from the contagion conveyed in the clothing of immigrants, is not to be forgotten. The disease appeared, two days after the clothing was unpacked, in one of their children who had previously been in perfect health. We have already called the attention of the quarantine officers in this state to the importance of a careful inspection of all vessels that sail from an infected port or from those adjacent, nor should their vigilance be relaxed because a clean bill of health is required prior to sailing for this country, for the disease may break out after the vessel has started. The efficiency of the service will very probably be tested, and untiring vigilance is demanded.

It has been generally believed that cholera originated always in a province of India, from which it was spread to other localities, the general direction of its course being westward. In a recent official report it is stated that it is the almost universal belief of the physicians in government service in India that cholera originates in any part of the East where the essential unsanitary conditions exist. While it is possible that a visitation of cholera may be escaped this year, it is the part of wisdom to be prepared. If all reasonable precautions have been taken the public will be less likely to be seized with that unreasoning fear and panic that predisposes to the disease, and is a powerful adjunct to its spread. It is also true that all sanitary improvements are of lasting benefit, and if we escape invasion the results of the sanitary work accomplished will be seen in a better state of the public health, less sickness, and a lowered death rate, so that the former neglect of these unsanitary conditions will seem to have been almost criminal.

The value of action before disease appears is beyond all comparison greater than that taken in the presence of an epidemic. Public safety will be best secured by such preparation as is known to be the most effective, before the approach of the foe. Fortifications cannot be erected while under attack by the enemy. The sanitary barriers which defend from fatal disease are the same, whether it be Asiatic Cholera or any other infectious malady. The watchword of protection is *cleanliness*. If we make ourselves

clean, and our surroundings clean, the Cholera may come, but it will fail to find an abiding place.

HOW CHOLERA SPREADS.

The *contagium** or virus of cholera may be carried from place to place by a person suffering from the disease, however lightly. It is disseminated by the excretions of the patient, both solid and liquid, chiefly the former. As the disease can be scattered by a person suffering from a light case, that is, where a choleraic diarrhea is the chief symptom, the facilities afforded by railroad travel for the spread of cholera over a wide area are evident. While the *contagium* of cholera can be thus freely scattered it is not repropagated outside the body except in unsanitary localities. Vile, filthy, undrained or unsewered tenements, filth-saturated soil from leaky drain-pipes, an atmosphere reeking with the gases of decay, soil polluted with the putrefactive compounds from garbage, kitchen slops, sink drains, shallow, over-flowing privy-vaults, and the over-crowded haunts of vice and crime, in which misery compels the poor also to seek shelter, furnish in the most inviting form the essential conditions for the repropagation of the *contagium* of cholera. Less aggravated instances of unsanitary conditions are proportionately dangerous. A warm, moist atmosphere, into which putrefying organic matter is discharging the gases of decay, is favorable to the development of the germs of cholera. The water from wells polluted by filth from closely-adjacent vaults or drains, and other sources of water supply defiled by sewage, if also infected with the specific contagion of cholera, has long been recognized as one of the most active agents in the spread of this disease. Impure water prepares the system for the reception of cholera, and renders it less able to resist its course.

LAW OF INFECTION.

Cholera is not contagious in the same sense that scartlet-fever and small-pox are contagious; it is not what is commonly called "catching." If disinfection and other proper precautions are

*Modern research teaches us that the contagium of cholera is a bacillus. This disease germ is of the one-celled variety which multiply rapidly.

used, there is scarcely any risk that the disease will spread to those that nurse, or otherwise closely attend upon the sick. With the essential conditions of filth, moisture, and warmth, the germs are reproduced so rapidly that "the disease extends over the whole contaminated region as if by an explosion." Our control over the spread of cholera is complete, as the laws which govern it are so well understood. Were it not that from neglect, and indifference, unsanitary conditions have been, and are, allowed to become so extensive and complicated that they cannot at once be remedied, there would be no reason to fear this scourge. The contagion of cholera can be destroyed, whatever its essential nature may be, and the disinfectants that destroy it are well known and easily used. The factors for an epidemic of cholera are:—

The specific contagion.

Moisture and warmth.

Filth.

If the specific contagion be not excluded by quarantine it can be destroyed by disinfection. The filth factors can be removed, or purified. While warmth and moisture are essential for the multiplication of the germs, they can be preserved for an indefinite time in a dry state, and again become active if the proper conditions for their development are supplied. The limits of the contaminated area mark the boundary of the spread of cholera. With pure air, pure water, and an uncontaminated soil, an epidemic of cholera could not be developed. Cases might, indeed, occur, but the disease would be readily controlled. The nearer this standard is reached, the less the danger from cholera, as well as the longer the average duration of life. Cholera is a stern teacher of the importance of public hygiene. It is "the world's great nuisance searcher, as well as a relentless destroyer, silently invading and smiting the people that have left open the door for such a visitation."

The law makes the selectmen and justices of the peace the board of health in every town where no other organized body exists for the care of the public health. The health boards are the guardians of the people, and it is their duty to see that these avoidable causes of disease are removed. Let no town be caught

furnishing the essential filth conditions to start an epidemic that will sweep the State. To prevent this, a careful attention to conditions hitherto neglected will in many cases be required. We would call the attention of health authorities in the cities

To the public streets.

To the gutters where garbage is thrown, and those near hack and express stands, etc.

To domestic animals in city limits.

To alleys, lanes, and back-yards, and the disposal of garbage.

To the disinfection of all foul places, cellars, and underground quarters.

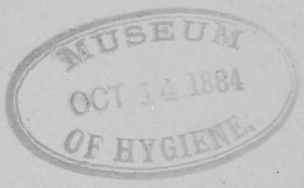
To sewers and house drains.

To privies, dumping-grounds, and sewer outlets.

The special attention of health officers in the country should be directed to privies, cesspools, and sink-drains; garbage-heaps, swill-barrels, etc.; pig-pens and farm yards; and in consequence of these, polluted wells, to cellars, and stagnant water, and to slaughter-houses. Disinfectants should be used freely, and no new accumulations of filth allowed.

Householders should carefully inspect their dwellings and surroundings, and see that everything is in a sanitary condition. If possible, remove all filth, and then disinfect; if impossible, in every instance use disinfectants liberally. Allow no foul spot for the germs of cholera to find a resting-place; for it must be remembered that these germs multiply in moist filth. A single fecal discharge from a cholera patient would infect the contents of a full privy vault, as was illustrated in Kentucky in 1873, when nearly every person that entered the infected privy, if once only, was seized a few days thereafter with cholera, although it had been used but once by a cholera patient, who was found in it in a state of collapse. After thorough disinfection no further sickness was caused. Every vault used by a cholera patient should be disinfected, and the places he may have visited should be traced by the health authorities. The fluids vomited, or a single discharge from the bowels of a cholera patient, if thrown without disinfection into a privy vault, cesspool, or sewer, would infect their contents, and spread the disease extensively. In like

manner undisinfected discharges may pollute wells, springs, or other sources of water supply. It is a duty every one attending upon these cases owes to the community, as well as for self-protection, to enforce the disinfection of all excretions from cholera patients. The copperas solution is a cheap and efficient disinfectant.

Should the cholera appear, plain and practical instructions for its management will be issued by the Board.

The circular of the Board on Disinfection will be distributed free to all applying to the secretary, Hartford, Conn.