AN INAUGURAL DISSERTATION
ON
Epidemic Cholera
SUBMITTED TO THE
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FOR THE DEGREE OF
Doctor of Medicine.
BY
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OF
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Epidemic Cholera.

Of all the diseases which have spread dismay and death through every grade of human society, none has more truly and terribly entitled itself to be called "The pestilence that walketh in darkness" than Asiatic cholera. In whatever aspect
we view it, whether in respect of its origin its essential nature or the mode of its propagation, it is alike mysterious and unaccountable. The first distinct and reliable account we have of it is in the year 1817 when it appeared in the Delta of the Ganges and during the two succeeding years it spread itself throughout the extreme length and breadth of the Indian peninsula, moving in lines more or less diverging and attacking in succession places more and still more distant from the seat of its origin and situated in various directions from it; but passing by many districts located between its different lines of movement. It moved with a
Wonderfully uniform progress along the water as it selected, ling for several months about one degree a month. During the year 1828 it extended itself beyond the boundaries of Hyndoustan into the Burman empire and other portions of eastern Asia, and gradually passing through extensive realms entered China in 1820 and in the following year appeared in the islands that constitute the Indian Archipelago. In 1821 it crept along the shores of the Persian Gulf and during this and the succeeding year invaded portions Arabia, Persia, Mesopotamia, Syria and India and threatened the eastern boundaries of Europe. It appeared in the South Eastern
territories of Russia, attacking and
ruining several of its cities and
provinces, and then pausing awhile
in its dreadful march as if to
gather strength for the terrible work
it had to do. it reappeared in
Orenburg in 1828 and again in 1829
and advancing through the Southern
provinces of the Russian Empire
reached Moscow on the 28th of Sep-
tember of that year. passing through
Russia it traversed Poland adding
the last bitter drop of misery to
the already overflowing cup of sorrow
in happy, yet heroic lands.

Passing from Poland it next
invaded the Austrian dominion
and passing through the north
of Germany appeared on the
eastern shore of England on the 28th of October 1831. Thence it spread over the British Isles and as elsewhere falling with frightful destruction on some places and capriciously by passing by others. But the march of the pestilence did not end here. Crossing the British Channel it ravaged France and Spain and spread to Italy and the northern coast of Africa. Nor did even the broad Atlantic shore an effective barrier to its progress. On the eight of June 1832 its first appearance was observed in Quebec and two days after at Montreal. Passing by unnoticed the intermediate on the seacoast from Nova Scotia to Rhode Island it suddenly and unexpectedly
Appeared in the City of New York on the 21st of June. Spreading in various directions The disease visited Albany, Troy, New Brunswick, Philadelphia and Rochester in July, and Baltimore, Boston and Washington in August. About the 1st of October it suddenly broke out in Cincinnati and almost simultaneously at Madison, Louisville and St. Louis, and traveling along the Mississippi reaches New Orleans by the latter end of the month. Leaving the Ohio it spread strong portions of Indiana, Illinois, Kentucky and Tennessee. In its second eruption into Europe and America, which began about the year 1845 or 1846 and terminated three or four years since it
followed very nearly the same route geographically, and need not therefore be traced.

Symptoms. The disease usually commences as a diarrohea which continues for a greater or less length of time, accompanied for the most part with some degree of languor and nausea with other sensations of uneasiness in the stomach and bowels. After these premonitory symptoms have continued for a greater or less length of time, violent vomiting sets in and the discharges from the bowels become more copious and of the character which has caused them to be called "rice watery discharge" and consisting of a turbid whitish fluid with white
flakes floating in it. During the existence of these symptoms, the patient is usually attacked with violent pain in the abdomen and extremities and dreadful edema in the fingers and toes, arms and legs. Shortly after the accession of these symptoms, the skin becomes shriveled and shrivelled like a washerman’s hands after a hard day’s washing. There is a blue circle around the base of the inferior eyelids, also blueness of the nails, and the lips are swollen or purple. Sometimes portion or the whole of the extremities are blue, and the blueness has been observed to occupy the whole surface of the body. The secretion of urine is suppressed, and the thirst becomes
intend and meansank. The patient complained of great internal heat while the skin is cold as if he was dead. Even the interior of the body is greatly reduced in temperature notwithstanding the patient complains of burning up. A thermometer placed in the mouth has shown the temperature to be from ten to sixteen degrees below the healthy standard. The tongue is cold and the breath, if the weather be warm is colder than the external air. Generally in the commencement of this stage the patient manifested extreme restlessness, but as the disease advances he subsides into a state of amazing indifference, although conscious of everything around. The tongue assumes a leaden hue, or is covered with
a "leathery" coat. The pulse is feeble and rapid, and later in the disease ceases altogether at the wrists, though the heart may still be felt like a snuffed drum.

Funeeral marches to the grave;
The breathing is also greatly accelerated, rising sometimes as high as thirty-six in a minute. A cold clammy sweat bathes this the erysipelitis or perhaps the whole surface. At last the patient becomes quiet. The vomiting ceases and the stomach tolerates anything sent in, and the cramps subside and the patient shows no desire to move or exert himself. The anxiety which was before depicted upon his countenance gives place to a more tranquil
appearance and the face sinks seems to be waiting without solicitude the moment of dissolution. Just before death the temperature of the body has been observed to rise and continue even after death. Twitching of the muscles after death is a phenomenon which I believe has not been known to follow any other disease. It is very commonly observed in persons dead of Cholera. First one finger and then another will be drawn in; and the toes of one exhibit the same phenomenon. There is a quivering of the larger muscles of the limbs, and sometimes the tongue sways more up and down but not so rapidly as in its natural movement. This singular post-mortem phenomenon involves the ignorant and superstitions
be holden with a more horrid idea of the disease than any other, even the frightful train of symptoms that herald the approach of death. The symptoms are not always exactly as we have imperceptibly described them. The premonitory diarrhea and nausea are occasionally absent, and the patient is suddenly seized with the more decided symptoms of the disease and passes rapidly into a state of collapse sometimes without either surging or vomiting. Then it comes on thus suddenly it is said to be generally between midnight and daybreak. Occasionally the discharges from the bowels have presented thin fecal character. Throughout the course of the disease. All who have premonitory symptoms do not
necessarily go into the collapse, indeed when Cholera prevails most persons suffer some derangement of the bowels. Some are unusually constipated at that time. 

A large majority of those who get into complete collapse never get out of it, though occasionally do, but but before they reach the goal of health they have to pass over another stadium in the terrible race for life. They slowly pass from the stage of collapse into a form of a low lymphoid type. The pulse susceptible at the wrist, the conjunctivae becomes engorged and red, the blindness disappears from the surface, lips and nails, the animal heat returns, the discharges from the bowels again become fecal and somewhat mixed with
ile, the cramps and vomiting cease, the patient is stupored and dull, and a dark sordes collects on the teeth. This secondary form is scarcely less fatal to those who pass through the collapse than the latter is to those who enter it. It has been called a typhoid fever, but it is not to be understood to be identical with the disease properly so-called, but a low grade of fern possessing certain characteristics common to all forms of an adynamic type. There are not the diarrhoea and abdominal distention that accompanies typhoid fever proper, and there is seldom any delirium, as in the latter disease; there is apparently more inactivity than any positive
alteration of mind. The patient may be aroused and will then give sensible answers to your questions, but so soon as you cease to force your conversation upon him he lapses back into a state of stupefaction with his eyes rolled back in their sockets and thus continues until again aroused or until he dies or convulses. Of course in a large number of cases there will occur all grades of severity from one so mild as to be attended with little or no danger.

The most superficial reader will not fail to observe that the symptoms of a fully formed case of cholera are widely different from those which usually mark its invasion.
And that those which succeed upon reaction are totally distinct from both.
Hence the disease has been properly divided into three stages, the incipient,
the cold or collapse stage and the feverish stage. These are so well marked
we need not recur to the symptoms by which they are distinguished.

Causa. Of the real exciting
cause of this most frightful malady
we know absolutely nothing. The
astrologers of old pretended that
they could by observing the motions
of the heavenly bodies divine the
destinies of men and of nations and
the affairs of men were supposed
to be ruled by stars; if the good
stars were in the ascendant the people
were prosperous and happy.
but if the evil stars mounted above the good, then the people mounted. This supposition has not been entirely abandoned, for there are not wanting those who would attribute this terrible scourge to the influence of comets in the neighborhood of the earth. The idea is too seductive to require a respectful notice at our hands. Others have ascribed it to certain electric disturbances in the atmosphere by which a substance called ozone is generated and which is supposed by them to be the exciting cause and the disease has been treated with medicines supposed to possess the power of neutralizing this noxious agent. Others again observing that particular districts of countries
possessing certain geological characteristics, its depredations have attributed it to a gas or other poisonous material, requiring certain geological conditions for its evolution. Again it has been alleged to depend upon the existence of vast swarms of microscopic organisms animal or vegetable floating about in the atmosphere. This hypothesis we regard as more consonant with the history and character of the disease, than any other that has been proposed, but it has not sufficient evidence in its favor to entitle it even to the rank of a theory. It is at best but a vague hypothesis. The question of its contagiousness would require too much space were we to undertake to discuss it.
The majority of physicians who had to grapple with its processes some other and more rapid mode of passing from place to place.

In regard to the predisposing causes we may say in general terms that whatever tends to debilitate the system and depress the mind may be set down under that head; and that the intemperate use of ardent spirits and the state of alarm and fear which the forewarning of the disease begets in the minds of those exposed to it are two of the most potent.

Bad diet, filthy habitations and crowded rooms are said to render people more liable to it.

Diagnosis. There is but little danger of mistaking this disease for any
other. It may be known by its occurring as an epidemic, by the rice-water discharge, the absence of bile in them, the extreme collapse, severe cramps, etc.

**Prognosis.** A favorable augury can seldom be pronounced of this disease, but the danger is to be estimated by the degree of the collapse in the cold stage. It must not be reduced into giving a favorable opinion by the cessation of the cramps and vomiting while there is deadly coldness of the skin and absence of the pulse at the wrist and the respiration continues laboured and frequent; for these symptoms often indicate the transition of the disease from a bad condition to one still worse. Whether we are to dread a fatal result
in the stage of Collapse or the preceding fever, the intensity of the former of these stages is the measure of the danger; because the danger of the collapse is in proportion to its duration and intensity; and should the patient survive it, the succeeding fever will be the more malignant and protracted and profound. It must be remembered that the degree of danger with which the disease is fraught is by no means proportioned to the intensity of the spasms and the irritability of the stomach.

Post Mortem. Appearances. The arterial system is usually found empty while the venous system is gorged with dark gums.
and an uncoagulable blood, which is also deficient in serum and salts. The surface of the alimentary canal is found pale or sometimes congested in spots or along continued surfaces. The whole surface is denuded of its epithelium which appears in shreds resembling false membrane. The abdominal veins are also more or less gorged with dark venous blood. The bladder is contracted so much that it resembles a small ball and is entirely empty.

Treatment. The great varieties of treatment adopted by different practitioners and recommended by different authors in this disease is good proof of importance of them all.
Now was the art of medicine more vigorously sollicited in any disease than in Cholera, and but seldom with less success, except where it has been taken in its incipiency. If taken in the beginning there is but little doubt that great good may be done. Many cases which would otherwise run on into fatal colliquums may be by proper medicines and measures arrested. In Cholera Tunes, the unmedicinal are too oft to regard a moderate looseness of the bowels as salutary or at least inattended with danger. This error should be sedulously combated and as far as possible overcome, so that people laboring under these premonitory symptoms may apply for assistance without delay.
When thus applied to what shall we do. First we must make our patient go to bed, and remain there until his symptoms has subsided. He may say he is not sick enough to go to bed, but we must insist on it and endeavor to show him the importance of our instructions. Next he must use medicines to check the discharges from the bowels. For this purpose there is probably no better combination than the following.

\[ Py \text{ Opium } 9 \times 4 \]
\[ Hyd. chlor. mit. 9 \times 24 \]
\[ Camphor P. Alto. 9 \times 4 \]

Make into 12 pills. One to be administered every two three or four hours according to the urgency of the case, and to be kept up until the discharge
are arrested or assumes a healthy or bilious character. Various astringents and aromatics have been recommended in this stage. Kino, thany, and acetate of lead, laevulin, caposic and others have all been used mostly combined in some form with Opium, but the formula we have given is perhaps the best. But suppose in spite of our measures the patient goes into the state of collapse what are we to do? Aye there's the rub. From all I have been able to gather from the books and other sources I am of opinion that no plan of treatment yet proposed has materially if at all diminished the average mortality of the disease. Are we then to give up the patient so soon as a collapse
comes on, and attempt to do nothing for him. Better to do that than do too much. I am convinced that many having passed through the stage of collapse have died subsequently from the effects of over-dragging. The administration of large doses of opium as recommended by Hawthorn of Liverpool and practiced by many practitioners in this country we cannot in our own opinion too heartily condemn, for while it does not make the collapse stage less dangerous it must make the stage of fever infinitely more so. There is always a decided tendency to coma of those who have come out of this condition and the presence of these enormous doses of opium in the stomach and bowels
cannot but add danger to the already perilous condition of the patient. Nor do we approve the enormous doses of colonel that have been given by practitioners in the fourth and fifth. The amount that has been administered in some instances is truly incredible, but we believe this heroic practice as it was called has fallen into merited disrepute. The question recurs what are we to do? We should use in this stage a modification of that we used in the first. We should administer colonel by the mouth in moderately large doses, say ten or twelve grains every two or three hours, and an astringent astrigent is injected for retention. We would apply cups to the epigastrium and friction.
of mustard or some other stimulating application to the surface. In addition, we might use warm and stimulating treatments. We are aware that many other measures are recommended, but we believe them to be utterly impotent and therefore do not choose to notice them. The concentric form is to be treated according to general principles modified to suit the circumstances of each particular case.