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AN

# INAUGURAL DISSERTATION

ON

*Epidemic Cholera*

SUBMITTED TO THE

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AND MEDICAL FACULTY

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## UNIVERSITY OF NASHVILLE,

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 waters it selected, being for several months about one degree a month.

During the year 1818 it extended itself beyond the boundaries of Hyndoustan into the Persian empire and other portions of Eastern Asia, and gradually passing through <sup>these</sup> extensive realms entered China in 1820 and in the following year appeared in the populous 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  
wasting 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  
Ornburg in 1828 and again in 1829  
and advancing through the southern  
provinces of the Russian Empire  
reached Moscow on the 28<sup>th</sup> 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 poor  
unhappy, yet heroic lands.

Passing from Poland it next  
invaded the Austrian dominions  
and passing through the north  
of Germany appeared on the

eastern shore of England on the 28<sup>th</sup> of October 1831. Thence it spread over the British Isles and as elsewhere falling with frightful destruction on some places and capriciously 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 prove an effectual barrier to its progress. On the eight of June 1832 it first appeared in Quebec and two days after at Montreal. Passing by untouched the intermediate on the seaboard from Nova Scotia to Rhode Island, it suddenly and unexpectedly

appeared in the City of New York  
on the 21<sup>st</sup> 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 1<sup>st</sup> of October it suddenly  
broke out in Cincinnati and al-  
-most simultaneously at Madison,  
Louisville and St Louis, and travel-  
-ling along the Mississippi reached  
New Orleans by the latter end of  
the month. Leaving the Ohio it sp-  
-read through portions of Indiana,  
Illinois, Kentucky and Tennessee.  
In its second eruption into Europe  
and America, which began about  
the year 1845 or 1846 and termin-  
-ated three or four years since it

followed very nearly the same routes geographically, and need not therefore be traced

Symptoms. The disease usually commences as a diarrhoea 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 water discharges" 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 cramps in the fingers and toes arms and legs.

Shortly after the accession of these symptoms the skin becomes shrivelled and shrunken like a washers hands after a hard days washing. There is a blue circle around the base of the inferior eyelids, also blueness of the nails, and the lips are pallid or purple. Sometimes portions 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

intense and <sup>so</sup>messant. The patient complains of great internal heat while the skin is cold as if he were 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 manifests 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 late in the disease ceases altogether at the wrists, though the heart may still be felt like a puffed drum

————— beating

Funeral 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 the extremities or perhaps the whole surface. At last the patient becomes quiet, the vomiting ceases and the stomach tolerates anything put in it, 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 patient 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. Twisting of the muscles after death is a phenomena which I believe has not been known to follow any other disease. It is very commonly observed in persons dead of Cholera. Twist one finger and the another will be drawn in; and the toes of the feet exhibit the same phenomenon. There is a quivering of the larger muscles of the limbs, and sometimes the tendons move up and down, but not so rapidly as in its natural movement. These singular post-mortem phenomena impress the ignorant and superstitious

beholder 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 imperfectly described them. The foremonitory diarrhoea 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 purging or vomiting.

When it comes on thus suddenly it is said to be generally between midnight and daybreak. Occasionally the discharges from the bowels have <sup>been</sup> presented their focal character throughout the course of the disease. All who have foremonitory 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 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 fever of a low typhoid type, the pulse reappears at the wrist, the conjunctivae become engorged and red, the blueness disappears from the surface, lips and nails, the animal heat returns, the discharges from the bowels again become fecal and somewhat mixed with

file, the cramps and vomiting cease,  
the patient is stuporid and dull,  
and a dark sordes collects on the  
teeth. This secondary fever 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 fever possessing certain  
characteristics common to all fevers  
of an adynamic type. There are not  
the diarrhoea and abdominal dis-  
tention that accompanies typhoid  
fever proper, and there is seldom  
any delirium, as in the latter dis-  
ease; there is apparently more dullness  
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 stupor with his eyes rolled back in their sockets and thus continues until again aroused or until he dies or convalescence begins. 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  
febrile stage. These are so well marked  
we need not recur to the symptoms  
by which they are distinguished.

Causes. 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 peo-  
ple were prosperous and happy,

but if the evil stars mounted above  
the good, then the people mourned.  
This superstition has not been entire-  
ly 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 ridiculous to  
require a respectful notice at our hands.  
Others have ascribed it to certain elec-  
tric 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 escaped 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 it possessed 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 prevalences 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 disch-  
arges, the absence of bile in them, the  
extreme collapse, severe cramps, &c. &c.

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. He must not be seduced into  
giving a favorable opinion by the ces-  
sation 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 trans-  
ition of the disease from a bad con-  
dition to one still worse. Whether  
we are to dread a fatal result

in the stage of Collapse or the  
succeeding 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 dura-  
tion and intensity; and should the  
patient survive it, the succeeding fever  
will be the more malignant and per-  
ilous as the collapse was more  
protracted and profound. It must  
be remembered that the degree of  
danger with which the disease is  
fringed 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 gummy

and an coagulable 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 viscera 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 treatments adapted by different practitioners and recommended by different authors in this disease is good proof of importance of them all.

Mercu was the artillery of medicine more vigorously applied in any disease than in Cholera, and but seldom with less success, except where it has been taken in its incipency. 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 collapse may be by proper medicines and measures arrested. In Cholera times, the uneducated are too apt to regard a moderate looseness of the bowels as salutary or at least unattended 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 we must use medicines to check the discharges from the bowels. For this purpose there is probably no better combination than the following.

Rj Opii pulv                    ℥i x ij  
Hydr. chlor. mit            ℥i xxiv  
Camphor Pulv                ℥i x ij

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 discharges

are arrested or assumes a healthy  
or bilious character. Various astringents  
and aromatics have been recommended  
in this stage, Kino, shatany  
and acetate of lead, piperine, capsi-  
cum &c 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  
to much. I am convinced, that many  
having passed through the stage of  
collapse have died subsequently from  
the effects of over drugging. 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 dan-  
gerous 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 patients. Nor  
do we approve the enormous doses of  
Calomel that have been given by prac-  
titioners in the South and West. 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 occurs what  
are we to do? We should use in this  
stage a modification of that we  
used in the first. We should admini-  
-ster Calomel by the mouth in  
moderately large doses, say ten or  
twelve grains every two or three  
hours, and an astringent opiate in-  
-jected per rectum. We would apply  
Cups to the epigastrium and frictions

of mustard or some other stimulating application to the surface. In addition we might use warm and stimulating pediluna. 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 consecutive fever is to be treated according to general principles modified to suit the circumstances of each particular case.