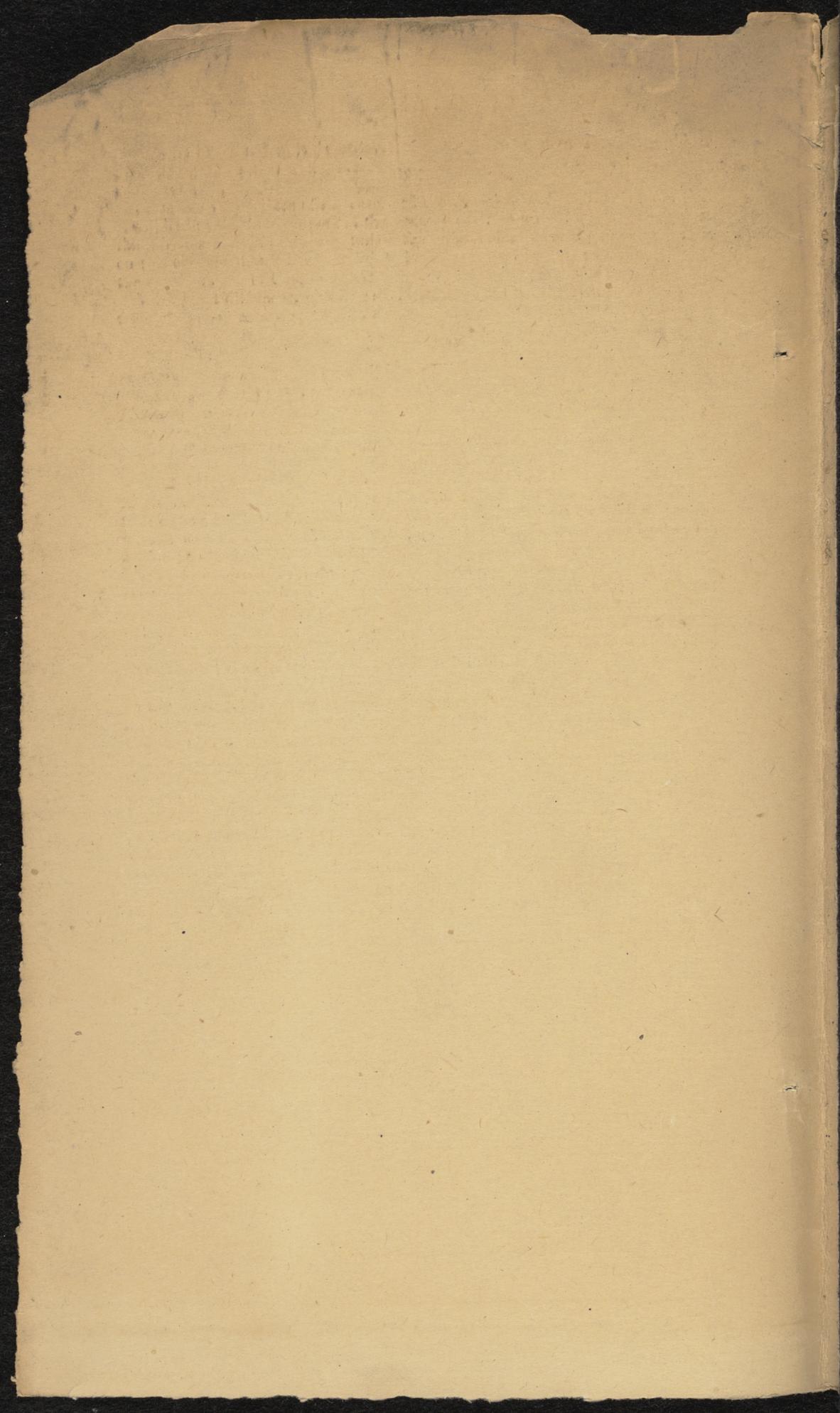


EVANS (John)

Memorial ++

praying the establishment of a
system of quarantine regulations
for the prevention of the spread of
Cholera ~~~~~



MEMORIAL
OF
DOCTOR JOHN EVANS,

PRAYING

The establishment of a system of quarantine regulations for the prevention of the spread of cholera.

FEBRUARY 23, 1866.—Referred to the Committee on Commerce and ordered to be printed.

To the honorable the Senate and House of Representatives in Congress assembled :

Your memorialist would respectfully call attention to the importance and feasibility of preventing the threatened invasion of this country by the Asiatic cholera by the enforcement of a general system of quarantine regulations.

The great importance of a measure that promises to accomplish the object indicated, by which the lives of the people and the prosperity of the country shall be guarded from this terrible scourge, needs no elucidation.

To show the feasibility of arresting the progress of the disease by quarantine, I would respectfully call attention to two facts :

1. Where carefully observed, it is found uniformly to spread along the lines of intercommunication and travel, but never faster than their regular course.
2. It has been kept at bay by the intervention of quarantine regulations.

In support of these propositions, I respectfully refer to the facts set forth in the accompanying copy of a history of the spread of cholera, especially as it invaded this country in the year 1849, which was published in the Northwestern Medical and Surgical Journal, for September of that year; also to the report of the proceedings of a recent meeting of the commissioners of health for the city of New York.

It will be observed that the disease appeared at the quarantine station on Staten island, New York, on the 2d day of December, 1848, and after prevailing extensively on the island for a month it completely subsided, without affecting the great city in its immediate vicinity, and without spreading beyond that island.

It will also be observed that, on the 11th day of the same month, it was brought by the ship Swanton to the wharf of the city of New Orleans, where no quarantine interfered, and that it rapidly spread, first, to the shipping and throughout that city, and thence regularly, as boats ascended the Mississippi river, from point to point across the entire country along that stream and its tributaries, and by the lines of railroad, until it was spread to all parts of the country from that point of its introduction.

And it is worthy of remark that, while the disease spread along this extended line by regular steps, the country away from its immediate course remained unaffected by the disease.

While, in 1849, medical men were so divided in opinion on the question of the contagious or portable nature of cholera as to prevent any general quarantine

against its introduction, it is believed now to be so unanimous on the subject that such a precaution would meet the hearty support of the medical profession of the country.

From the very nature of the case, and the experience of 1849, it is plain that it will be in vain that one port in the country enforces a rigid quarantine against the introduction of the disease, unless the same is also enforced generally. It is on this account that it becomes a question of national importance, and challenges the consideration of Congress.

With great diffidence, pleading the importance of the subject and the necessity for early action as my apology, I ask your attention to this question.

JOHN EVANS.

Extracts from an article on the spread of Asiatic cholera, published in the Northwestern Medical and Surgical Journal, of Chicago, for September, 1849, by John Evans, M. D., professor, &c.

But first let us glance at the mode of its introduction into this country in 1832. About the first of June, of that year, the cholera made its appearance for the first time on our continent.* The Carricks, a vessel direct from Ireland, where the disease was prevailing when she left, arrived at Gross island, the quarantine station for Quebec, having lost 29 persons of cholera on her passage. On the 8th, a case occurred at the quarantine; on the 9th, several cases at Quebec wharf, most of which were from on board the steambot Voyageur, which had taken passengers from on board of emigrant vessels below, and started for Montreal, but on account of bad weather, landed about 200 in Quebec. The first cases in the city were nearly all of this company. In that part of Quebec where they were landed, the disease first broke out and committed its greatest ravages.

The Voyageur proceeded to Montreal. One passenger died on board of cholera, on the passage. The first two cases in Montreal were from this boat. Dr. Morrin says, after stating these and other facts, "all things considered, I am satisfied the cholera is contagious."

The disease certainly spread about as rapidly as the travel on the lakes along the Canada shores of Lakes Ontario and Erie; quarantine regulations at the ports on the other coast having turned the travel principally through Canada.

After this it soon made its appearance on steamboats on Lake Champlain. In about the usual length of time of travel for emigrants by land, many of whom were on the route, from here to New York, the disease broke out in the latter city, travelled along the Hudson, breaking out first at Albany, then at the larger towns on the western thoroughfare; and soon it became prevalent, first in the large cities, as a general rule, and afterwards spread to the villages and into the surrounding country, few places escaping.

But my purpose is to speak more particularly of its recent invasion of the country, as the facts are more accessible, and the evidence of its communication more pointed.

For a clear and minute history of its progress from its ancient focus around Jesore, on the delta of the Ganges, in different directions through Asia, during this its second spread from that hot-bed of pestilence over the civilized world, we would refer to an article by Professor Dickson, in the New York Medical Journal for January last, derived principally from Dr. Verollot, physician to the French embassy at Constantinople. This history shows its transportation, with scarcely a variation, along the thoroughfares of travel, which vary in direction to almost all the points of compass.

* Dr. Morrin, health officer at Quebec.

The following extract from the London Medical Gazette shows the result of the observations of its editor on the progress of the disease in Europe:

"It is worthy of remark that in 1830-'32, as in 1847-'48, the cholera has manifested itself chiefly in the great lines of intercourse along frequented roads and the banks of navigable rivers, attacking chiefly towns and cities where the population was most dense, producing the largest amount of mortality in its first onset, then slowly diminishing in severity, and finally disappearing to reappear in a neighboring locality. According to Dr. Lasegue, the greatest rapidity with which the cholera has spread over any locality has not exceeded a rate of from 250 to 300 miles a month. This comparatively slow progress, together with its advance in the face of prevailing winds, is very unlike the usual mode of diffusion of a purely epidemic disease."

On the 2d of December last the ship *New York*, from Havre, France, with a large number of passengers, (21 cabin and 331 steerage,) principally French and German emigrants from various parts of Germany,* and from Paris and Havre, arrived at the quarantine ground on Staten island, eight miles from the city of New York. Nine days previously the cholera broke out among the steerage passengers, and several died before the arrival, when eight or ten cases were taken from the vessel to the quarantine storehouses. With some irregularity the disease prevailed on Staten island, and particularly in the marine hospital, until January 4, when it entirely disappeared. The mortality, in proportion to the population, at this place was great. One person from the quarantine was taken with cholera in the city, but was sent back, and died. Another case took it, and died in the same house where he was taken.

No other cases occurred for nine days, when a German, who had had no traceable communication with the infected places, took it and died. This was all of the disease that occurred in the city, and it disappeared entirely from the quarantine establishment and hospital.

We observe in the report of Dr. Whiting, health officer, that those exposed to the persons affected seemed particularly liable to take it.

Although this sudden arrest of the disease within such a short distance of New York, without its spreading into the city, was in the winter, it should not be contended that this fact, aside from the quarantine, was sufficient to account for the circumstance; or else why did it prevail to so great an extent at Staten island in the month of December? The season of the year may have rendered it more amenable to this kind of control, for its whole history shows that it spreads less rapidly in cold than in warm weather.

The history of its spread up the Mississippi valley affords a better opportunity of investigating its communicable nature than has been before presented, since it had but one point of departure, New Orleans, a healthy country over which to spread, and this at a season when the travel from New Orleans on the river was great, and the conveyance rapid and direct for thousands of miles, while through the country generally it was but little, and difficult on account of the bad roads of winter; whereas the former invasion of the country was made when there was much travel in all directions, and several of the great marts, as Quebec, Montreal, New York, &c., were early affected, and of course the channels of its communication soon intersected each other so as to become confused and lost.

At New Orleans, on the 11th of December last, nine days after the appearance of cholera at Staten island, the ship *Swanton* arrived from Havre with two cases on board. At the time of the departure of both this vessel and the *New*

* A writer in the *New York Courier and Enquirer* says many of these emigrants were from Hamburg and other parts of Germany, where the disease was prevailing when they left, and "one or more of these poor people brought with them the bedding or clothes in which one of their friends had died of cholera." The weather had been mild until reaching the raw atmosphere of the Grand Banks, where the disease broke out, "when open comes the big chest, and out comes the infected clothing."

York from Havre, there was no cholera at that point. But it is worthy of remark that passengers on both these vessels were from Germany, where the disease was raging, and that the disease made its appearance in parts of France as early as October last, though it had not reached Havre or Paris when these vessels sailed. Seventeen persons died on the Swanton during her passage, the disease having broke out when she was about two weeks at sea. At New Orleans no quarantine regulations prevented the Swanton from landing at once in port, and the cases on board were taken to the great Charity hospital, where, up to January, as many as fifty cases occurred among the nurses and persons admitted for other complaints.* Several cases appeared soon after among the shipping at the landing, but were only regarded as aggravated cholera-morbus. From this time the disease spread rapidly. The deaths for the week ending on the 15th, four days after the arrival of the Swanton, before which no case had been reported, were seventeen. During the next five days there were eighty-seven deaths, after which the disease produced a fearful mortality, assuming the form of a general epidemic, the number of deaths up to the 4th of January inclusive, as reported, being 1,115. From this time the disease rapidly disappeared, so that on the 6th of February the city was said to be entirely free from it; but it reappeared soon after, and produced a much greater mortality.

From a very early day after the disease spread so rapidly among the shipping in the port of New Orleans, where an immense fleet of steamboats are continually arriving and departing, it began to prevail on board of these vessels while lying there and on their upward passage on the Mississippi and its tributaries.

It extended rapidly up the river; but it is remarkable that along its course the points having the most communication with the steamboats were the first to be infected, and in no instance were any of these points affected until steamboats from places below, where the disease was prevailing, had arrived.†

The disease extended up Red river, from point to point, in the same manner as up other tributaries of the Mississippi.

At Memphis, Tennessee, a case occurred, on the 22d of December, in a boy who had been employed in huckstering fruit, &c., about town and the wharf, where he was in the habit of selling to the steamboat passengers. Previous to this, Dr. Shanks says,‡ there had not been any striking tendency to diarrhoea more than usual in such damp, rainy weather, although the boy had had it for several days previously. Steamboats from this time were continually passing up the river that reported cases and deaths on board, but for four days no other case occurred, when two cases at a considerable distance from each other, and from the steamboat landing, occurred on flatboats. The disease now rapidly spread, the whole line of flatboats being about two miles in length, the population on which was near one thousand, but, Dr. Shanks thinks, under circumstances that preclude the idea of its spreading from one to another directly, yet he believes it communicable through the air. These numerous cases occurred before the disease extended to other parts of the city, the boats being separated from the city by a wide batture.

Dr. Buchanan, of Nashville, Tennessee, says‡ that on the 20th of January last, twenty days after the first boat from New Orleans with cholera on board arrived, and after several other boats had been there, upon which cases of cholera occurred, one case of the disease appeared in a house almost surrounded by water in the lower part of the city. It was a man of bad habits, who had exposed himself to the weather and in the water for several days. The next case was in the same family.

* Dr. Fenner, in New Orleans Medical Journal.

† Shanks on Cholera, in American Journal for July, 1849.

‡ Western Lancet for February.

After the boats from New Orleans, on which there were cholera patients, commenced arriving at Louisville, we hear of the occurrence of the disease there, but have not been able to obtain the date of its first appearance. Various other points on the Ohio river soon after reported cases.

Cincinnati, it will be borne in mind, is the point where a large portion of the passengers are discharged from steamboats that ascend the Ohio river from New Orleans, and we would therefore expect that the disease would, if communicated, be found here at an early day after it broke out in New Orleans. Accordingly we find, on the 27th of December, Prof. Harrison giving a clinical lecture over two cases at the hospital, which came from steamboats that had brought them up the river.* Whether these were cholera or not, it was soon prevalent in Cincinnati. This was twelve days after it was prevalent among the shipping, and on board of steamboats departing from New Orleans.†

Here the disease was slight, presenting only the form of diarrhœa, excepting occasional cases, until about the first of May, when it assumed the more aggravated form, from which time until in July it prevailed, and in June, with great mortality, the deaths up to August 10 being 4,114.

About the 12th of May cases of the disease began to be reported along the Little Miami and Mad river railroad, upon which the travel generally goes from Cincinnati to New York.

The disease soon made its appearance at different points along this great thoroughfare of travel. On June the 7th five cases had occurred at Buffalo, three of which were attacked on board of vessels, and were from Chicago and Cincinnati, where the disease was prevailing when they left.‡ In the mean time it was carried up the Ohio river and broke out at various points, thus travelling the other great thoroughfare to the eastern cities.

Boats arrived at St. Louis with cholera on board on the 27th of December. On the 28th the Amaranth, with thirty cases on board, landed there. On the first of January it had become epidemic in rather a mild form. The following from the St. Louis Medical Journal for March gives the general facts of its introduction into that city :

“Since the 1st of January up to the present time sixty-seven deaths have been reported as occurring from cholera. Of these, at least one-half were persons who contracted the disease in New Orleans, or on their way from that city to this, and who were landed here in an almost dying condition. The remaining cases have been of local origin. During the same period forty-seven cases have been admitted into the St. Louis hospital, of which twenty have died and twenty-seven recovered. Of the twenty fatal cases, a large majority were admitted either from boats or obscure and filthy parts of the city, in a state of complete collapse, from which it was impossible to arouse them.”

The disease almost subsided, only an occasional case occurring, so that in February the city was thought to be clear of it. In the early part of April (twenty-six cases on the 10th) the disease increased; the warm weather seemed to aggravate the cases and favor the development of the specific poison; in addition to which, the increased influx of the disease from below added greatly to its spread.§ It increased, until in June the mortality was as great as has

* Western Lancet.

† The time occupied in the trip ascending the river from New Orleans to Cincinnati is from six to eight days.

‡ Buffalo Medical Journal for June.

§ To give some idea of its great prevalence on boats ascending the river from New Orleans, where it had broken out with greater violence than in the winter, we give the following items from the Cairo Delta of March 29: Steamboats arrived on 22d March—the Bride reported 7 deaths on board; the Uncle Sam 3 cases. On 23d, the Belle Key 8 cases; the General Washington several cases and 1 death; the Seraph 8 cases and 2 deaths; the Gladiator 8 cases and 3 deaths. On the 24th, the Tennessee 3 cases; the Yorktown 10 deaths.

been the fate of any American city, the deaths having reached the number of 180 in one day, in a population, at that time, about 40,000. Seventeen practitioners of medicine fell victims to the disease. Just before the disease subsided, a rigid quarantine stopped the emigrants from landing in the city.

By an intelligent gentleman, a citizen of St. Louis, who recently passed through this place from there, I learned that the greatest mortality was in the highest and most pleasantly situated part of the city.

From St. Louis it extended up the Missouri river, and broke out among the emigrants to California, at their rendezvous, at St. Joseph; great numbers of whom had passed through and started from St. Louis during the months of March and April.

The Sacramento arrived at St. Joseph with one case of cholera on board on the 21st of April, and on the 12th of May it was reported that boats continued to arrive with cholera on board. One vessel, the *Mary*, had buried thirty-six passengers on her trip up from St. Louis, and the disease was said to be prevailing to an alarming extent among the emigrants.

The disease also spread up the Mississippi river. Five cases were reported to have occurred at Quincy, Illinois, on the Upper Mississippi, on the 20th of March.

At Galena, about the middle of April, the first cases occurred in a family that came up the Mississippi on a steamboat, four of whom died.

On the 18th of March the Illinois river opened, and the steamboat trade commenced. About the 1st of April two cases of cholera were reported at Peoria, said to have come up the river. There had been none of it previous to this time, but soon after it appeared at other points on the river.

On the 20th of April the Illinois and Michigan canal was opened, so that boats could pass through, and the line of communication was complete from St. Louis through it and the Illinois river to Chicago.

On the 29th of April the canal-boat *John Drew* arrived here [in Chicago] with a number of emigrant passengers on board, who were direct from New Orleans, by way of St. Louis, several of whom were sick, but whether of cholera or not I cannot ascertain. They immediately left the boat. The captain of said boat, Mr. J. Pendleton, was taken sick on the same day. He was seen by Drs. Myers, Stewart, and others. The disease soon run into the collapse stage of cholera, and he died on the night of the 30th.

* * * * *

But the introduction of the disease into the country around Chicago furnishes the best evidence of its communication that has yet been afforded.

The city is situated so that on the east lies the broad watery expanse of Lake Michigan. On the west is a wet prairie, almost uninhabited for ten miles; and on the north and south the sandy lake shore is so closely bordered by the extension of this wet prairie that the country is very thinly settled—an occasional tavern for the accommodation of travellers constituting the principal habitations. Thus it will be seen that the city is almost isolated on all sides.

When the cholera became prevalent, the intercourse with the country was almost suspended. Those who live here, however, will bear me testimony that the winds blow freely and frequently in all possible directions, so that there could scarcely be said to be any obstructions to the free and rapid passage of "*cholera atmosphere*."

A circumstance at my office enables me to say positively, that during the months of May and June the winds were from the east to the west a considerable part of the time. Of this a stove-pipe, a little distance from my east window, frequently and faithfully reminded me.

By reference to a table, in a subsequent part of this article, it will be observed that at the time the cholera began to prevail extensively in the country west of Chicago, about the 1st of August, the winds were never from the east.

Under these circumstances, if the disease was atmospheric in its origin, whether the poison be animalcular, cryptogamous, carbonic, or malarial, we should expect the rich and densely populated country beyond the surrounding prairie to be speedily brought under the baneful influence of this worse than simoom, after the disease broke out in Chicago. But the history of its spread here, as elsewhere, shows it to correspond with the amount and rapidity of human intercourse.

Instead of its accustomed 300 miles per month, we find it prevailing here for two months before any number of cases occurred in the county, and it was not until the disease had been there three months that the county became generally affected. By physicians from the country who visited the city during this remarkable exemption from cholera, I was informed that the health was unusually good there, for the season of the year. But the manner of its introduction into the different neighborhoods of the surrounding country forms the strongest link, in the history of the spread of the disease, for the support of the doctrine of communication.

James Kerr, resident a few miles distant, and wellacquainted with the persons referred to, and Dr. Maxwell, of this city, have furnished me with the following account of the occurrence of the disease at Summit, 12 miles southwest of Chicago, on the Illinois and Michigan canal.

This neighborhood had been quite healthy, and no case of cholera had occurred among the inhabitants up to this time.

On Sunday, the 17th of June, a man came from Chicago to remain for a few days on business, at Mr. Heacock's, was taken with the cholera and died the next day.

Mr. Heacock was taken with the disease and died on the 23d; a son on the 24th; Mrs. Heacock, another son, and an Irish girl, who had gone from Chicago to nurse them, died on the 25th. Another son was also taken very bad at this time, but recovered. A daughter who was taken and brought to the city recovered.

Mr. Webster, who assisted in nursing and burying the last of the above who died, lived at Esquire Brown's, in the neighborhood, was taken on Tuesday, the 26th, and died in a few hours.

On the next day Esquire Brown was taken and died on the 28th. On the evening of the same day Mrs. Brown, who came to Chicago, was taken as she entered the city, and died early the next morning. Mr. Guthrie, her father, and Mr. McGlashen, her brother-in-law, while taking the corpse to Summit for burial, in a close carriage, were both taken while crossing the prairie. Mr. Guthrie survived a few days and died; Mr. McGlashen recovered.

Thos. Ferrity was at Mr. Heacock's, while the disease was producing its awful ravages in the family, nursing the sick: he went home at night unwell, and told the family with whom he lived to leave the house, for he was going to have the cholera. The family obeyed his warning, and the next day he was found in the house dead and alone. The family that fled escaped the disease.

Mr. Bankson, who lived near Ferrity's, and about a mile from Heacock's, had also been there while they were sick, took the disease, and died the same day. Mrs. Bankson was attacked about the same time. Mr. Grant, another neighbor, was at Heacock's rendering assistance to the sick, but escaped. His son, who attended the funeral of some of the family, however, took the disease soon after and died. These were all the cases that proved fatal, and the neighborhood became quite healthy by the second week in July.

Mr. Kerr observed that but two or three of those who rendered the kind offices of assistance to the sick during this terrible scourge escaped.

Dr. Knapp, who visited them professionally and remained with them some time, had a severe attack immediately after.

The neighborhood ten miles west of this city, at Doty's tavern, at the terminus of the plank road, on the great western thoroughfare from the city, has thus far

escaped, but one case having been brought there from town, which was not admitted, but sent back to a house in the suburbs, where he died.

The following history of the appearance of the disease in the country near Aurora, on Fox river, 40 miles west of Chicago, was communicated to me by Mr. Favour, apothecary and student of medicine of that place :

The first case that occurred was about five miles west of Aurora, in the person of a peddler who was direct from Chicago. He stopped at Mr. Sanford's, a farm-house on the road, on Wednesday, the 27th of June, and died of cholera on the following Sunday. On Monday Mr. Sanford was taken with the disease, but recovered. Several members of his family were soon after taken with diarrhœa, but all recovered speedily, and no other case occurred in the neighborhood or in the surrounding country until the 22d of July, when Mr. Van Fleet, a farmer living three miles north of Aurora, returned from Chicago, where he had been to market, and was taken with the disease the same night. He died the next day. On the 24th, the day after he died, Mrs. Van Fleet, who attended upon him, was taken, and died 18 hours after the attack. On the 27th, a brother of Mr. Van Fleet, who lived within a short distance of his house, was taken. This was all of the disease that had occurred in this neighborhood, which was otherwise healthy up to that time.

About five miles distant from Mr. Van Fleet's and eight miles from Aurora, a Mr. Leech was taken with cholera on his return home from Chicago, and died on the 24th of July. His son was subsequently taken. These were the first cases in that neighborhood.

The following account of the appearance of the disease in two neighborhoods is furnished by Dr. D. W. Boyd, of Brush Hill, who attended upon the cases referred to : The Buck Horn tavern is 15 miles northwest of Chicago, on the Milwaukee road, and is kept by the doctor's brother

On the 3d of July, Mr. Biddle, who lived two miles beyond, was taken with cholera on his return from Chicago, and could get no further than Mr. Boyd's tavern. After nursing him two days, Mr. Boyd was taken with the disease on the 6th.

Soon after five others, being all of his family, were taken with diarrhœa. All these recovered, being early put under the influence of calomel, camphor, and opium. The neighborhood, so far as the doctor was able to learn, and his brother's family in particular, had been healthy up to this time.

At Flagg Creek, 20 miles a little south of west from Chicago, the disease made its first appearance on the 22d of July, under the following circumstances :

Mrs. Martin, a citizen of Lockport, 35 miles southwest of Chicago, on the canal, came to the city on the 18th of July, and remained three days. She was taken with a diarrhœa on the 19th, and on the 22d went to Mr. Helmick's, at Flagg Creek settlement. At 10 o'clock that night she was taken with rice-water discharges, and died at 10 o'clock the next morning. On the 27th, four days after this case died, J. T. Webb, a sailor, came from Chicago to Mr. Glaton's, who lives about 80 rods from Helmick's. He had a diarrhœa when he left Chicago, where he saw a patient sick with cholera. He was taken bad on the 27th, and died on the 28th of July. Mr. Helmick, who assisted in nursing Webb, was taken with diarrhœa on the day he died, and on the 29th had a severe attack of cholera, but recovered.

Mr. Craigmile, who also assisted in nursing Webb, was taken with diarrhœa on the day he died, and on the 30th it was a well-developed cholera, but he recovered.

On the 31st a Norwegian, who lived at Galton's and assisted in nursing and burying Webb, was taken with cholera, and also recovered. He had been to see Craigmile, the case above referred to, the day before.

On the 3d of August, a German, who lived at Craigmile's above referred to, was taken with cholera, but also recovered.

In reference to this history Dr. Boyd remarks: "Previous to the above cases the neighborhood had been very healthy. Diarrhœa now became general in the families of Helmick, Craigmile, Glaton, and others adjacent, excepting two families who lived on the Carrington farm, about three-fourths of a mile distant from Helmick's, the members of which kept away from the cholera patients. Diarrhœa continued to 17th of August and subsided. It was easily managed by the use of calomel, camphor and opium."

The doctor relates the case of a Mr. Bush, living at the house of Mr. Farwood, who had not been exposed, (?) that occurred on the 26th of August, a day or two before he wrote, which he considers a victim of fear. (If fear produces cholera, ought we not to meet with cases continually?) But, says the doctor, the man had been in a rage because a girl came to live in the family from a house where two men had died of cholera.

The circumstances of its appearance at Naperville, 30 miles west of Chicago, were furnished me by my colleague, Prof. Brainard, who, a few days ago, returned from a visit to that place.

Some weeks before any case of cholera occurred there, tests for ozone became quite dark. About the 22d of July, an Irishman, by the name of O'Brien, returned from Chicago, where he had been visiting a relative who died of cholera. Soon after his arrival at home he took the disease and died. In about three days after, a German girl, who had been working at his house, took the disease and died on the 26th. Dr. Sowers attended upon the girl, and took the disease and died the next day. Dr. Hough attended upon Dr. Sowers, took the disease and died two days afterward, about the 20th of July. Miss Rouse, who lived at Dr. Sowers's, remained at his house about ten days for fear of carrying the disease with her, packed up her clothes, went home to her father's, three miles in the country, and soon took it. About the 17th of August her father was taken with the cholera, and died on the 20th. Mrs. Rouse, his daughter-in-law, who had been with him while sick, took it and died on the 23d. Her husband took the disease and died the same day. A son-in-law, who lived in Naperville, was there attending upon the sick above referred to, took the disease on the 27th, and died in a few hours.

A man, who had lately lost his wife and child by cholera, came to Naperville, and died of the disease at the Pre-emption House on the 24th. Mr. Snyder, who roomed with him, took it and died the next day. Mr. Mackintosh, who boarded at the same house, took it and died on the 26th. Up to and during this time the country around it, and the village containing about 600 inhabitants, enjoyed good health, with these exceptions.

Dr. Kimberly, of this city, furnishes me with the following account of the disease as it occurred in the neighborhood of Cazanovia, fifteen miles west by north-west of Chicago, where nine persons died in rapid succession, the neighborhood having been healthy up to the time mentioned:

About the 20th of July Mr. Barnum came to Chicago to attend the funeral of his brother, who died of cholera. He returned home in the evening after attending the funeral, was taken with the disease the same night, and died in a few hours. Three of his neighbors, who visited him while sick, were taken immediately afterwards, and died in a short time after their attack.

In the Dutch settlement, near Mr. Barnum's, the disease was introduced by a German, who was taken the night after going from Chicago, a short time after the fatality above referred to, and died in about twelve hours. Four others, who visited him while sick, were taken soon after, and all died within four days. These were all the fatal cases that occurred, and the disease soon entirely disappeared.

* * * * *

And this is the history of the spread of cholera as bearing upon the doctrine of its communication. First, it originates in India. From thence it travels

over Asia and Europe, following the lines of human intercourse. It twice pursues the same general course, and twice appears upon the American coast, and in 1848 at two points nearly simultaneously. It stops its ravages under quarantine regulations at the one, and without them extends rapidly at the other. In all these instances of its appearance in the country, it breaks out immediately after the arrival of ships from Europe with cholera on board. It extends from New Orleans up the vast extent of the Mississippi and its tributaries; never appearing at a place until a vessel arrives from the seat of its prevalence with the disease on board.

It confines itself for months strictly to the banks of these streams, in its first appearance through the vast region of country that they meander. It spreads to the interior from these river towns with a rapidity proportioned to the intercourse with the places where it first makes its appearance. It prevails in Chicago for months before it extends to the country around it, where there is an interruption in the intercourse with the country and a city isolated from the settlements around it. It spreads to the surrounding country only as persons have intercourse with the city during its prevalence. It extends through different neighborhoods in the country only as far as the communication with the sick is kept up, and rapidly subsides in all small communities. As if on account of its rapid communication, those susceptible to its influence at the time are speedily taken, and for want of others to take it, it entirely disappears. It commits its greatest ravages in particular neighborhoods, and in Chicago, where the intercourse among the inhabitants is most intimate and frequent.

In sixty persons affected in one neighborhood, direct communication can be clearly traced in fifty, and indirect in nearly, if not quite, all of the remaining ten.

In a large number of instances the disease can be traced as communicated from one to another through whole family circles. And during its subsidence the fact has been remarked that the cases that lingered in our midst in this place generally occurred in houses where the disease had been before, and often affected those engaged in washing up the clothing and cleaning the sick chamber, as if they might have come in contact with the fomites of communication.

Notwithstanding neighborhoods of limited extent seem to be brought under the influence of the poison, do not these facts show conclusively that the disease is communicated?—that it is self-propagating?—that in its action on the system it develops the morbid agent by which it is extended to others? Certainly no other reasonable explanation can be given of its course and progress.

* * * * *

Cholera is subject to no boundaries except those that prevent human intercourse. We find it in the densely populated city, on the dreary desert, and wild western prairie; laying low the inhabitants of the princely mansion, the cottage, and the Indian wigwam; traversing all climates, from the scorching Indias to the regions of perpetual snow; and extending from the Celestial Empire of the east, to the golden valleys of California in the west; attacking alike the indigent and the affluent; the filthy and the cleanly; the reckless debauchee and the prudent valetudinarian; the young and the old the black and the white, the yellow and the red man. In the dreary home of the latter, on the extensive plains that stretch out from the Missouri river to the Rocky mountains, it is now committing its fearful ravages. And as if to put the blush upon our boasted knowledge and philosophy—our enlightened mode of investigation—our learned and logical reasoning—from his own observation he announces to his comrades what its history indicates as the true mode of its propagation, and commences to take vengeance upon the white man for bringing it among them.

Portability of the disease.—Important meeting of the New York health commissioners.—Facts and statements for our city authorities and physicians.

The New York Herald gives the following report of an important meeting of the commissioners of health in that city :

Dr. Sayre, the resident physician, stated that information had been obtained, by the last arrival from Guadaloupe, that the cholera was introduced there by a trunk containing the clothing of two persons who had died of the disease while on the passage from Marseilles, where the disease prevailed; and the fact that the woman who washed the clothes, and all her family, died almost immediately; and that a number of persons attracted to her house by the sudden mortality were also attacked, many of whom died.

In view of this information, which proves first the *portability* of the disease; and second, the absolute necessity of the rigid enforcement of quarantine regulations, and in view of our present want of proper accommodations for this purpose, he offered the following resolution, which was adopted :

Resolved, That the chairman of the commission appoint a suitable person to go to Albany for the purpose of conferring with the governor, and to urge upon him to call the attention of the legislature to this important subject.

The chairman then appointed the resident physician to perform this duty.

Dr. Sayre then read a letter from Dr. Charles A. Lee, professor of hygiene in the Buffalo Medical University, a gentleman of the highest professional and sanitary attainments and the author of several standard medical works, which contain views corroborating the previous action of this board, and also some new ideas in regard to the mode of propagation and portability of cholera. He stated that he had shown this letter to a number of the first medical gentlemen of this city, who regarded these views of such practical importance as to demand their general circulation.

BUFFALO UNIVERSITY, MEDICAL DEPARTMENT,
January 17, 1866.

DEAR SIR : Some time since you did me the honor of requesting my opinion in regard to the contagiousness of cholera. Circumstances beyond my control have prevented attention to your request, and even now I can only briefly indicate the conclusions at which I have arrived, after close and varied personal observation of its progress both in our own and foreign countries.

In the first place, then, I have seen no reason to believe that the disease is ever communicated directly from one person to another, even under the circumstances of the greatest intimacy. In other words, *it is not contagious*, according to the common understanding of that word.

On the other hand, facts abundantly prove that the disease is portable, and always follows the great routes of travel and commercial intercourse. I hold, also, that we have satisfactory evidence that the disease is communicated through the evacuations of those infected with it, and in this way only. I could adduce many instances where there can be no question that the cholera has been conveyed to hitherto healthy localities by means of one infected person, in whom the disease had manifested itself only by an apparently trifling diarrhoea. Persons so affected may doubtless travel from one place to another, without serious development of the disease, and leave behind in privies and water-closets germs which may give rise to a deadly epidemic. It is this fact so generally overlooked, or not recognized, that has thrown so much mystery over the causes and mode of extension of this most fatal and mysterious malady.

This fact also explains those apparent anomalies in the progress of the disease, why it often takes no defined course in its wanderings, but spreads indifferently in different directions to different quarters, now with the wind and now against it, now following the main routes of travel, nevertheless often deviating from them, but travelling no faster in any case than ships, railroad cars, and

men travel. Those great leaps which it sometimes seems to take, and which have been supposed to be owing to the poison of cholera being carried by winds, are thus satisfactorily explained.

Although cholera is undoubtedly communicated by the fresh dejections of those infected, I think there can be little doubt that, if the poison may not be actually present in the stools just discharged, it may be generated in them at a later period under certain conditions favorable to its development. These conditions are now pretty well understood. The contact of such discharges with putrid animal and vegetable matter is very certain to develop the poison of cholera, and an impure atmosphere from the presence of similar matters favors its rapid dissemination. The accumulation of filth and organic remains, imperfect sewerage, overcrowding of tenement houses, and the saturation of the earth with the products of decay, are the chief causes of the greater intensity and diffusion of the disease in large cities than in other localities. To these, however, may be added the great imprudence with which cholera discharges are emptied into common privies, gutters and sewers, which serve as *foci* from which the malady spreads in every direction. Hence we find that in localities visited by the disease, the houses and streets in which those infected reside are the places of the greatest danger. But while these are being depopulated, the epidemic spreads rapidly, attacking first those low, filthy, overcrowded places, where the predisposing and favoring causes most abound; afterwards ravaging portions of a city and localities which were at first wholly exempt, and which were probably deemed safe from any danger of an attack.

I think the experience on board the *Atalanta* tends strongly to confirm the correctness of these views. The disease originated in the steerage, where it may have been brought by one individual laboring under *cholérine*. As the water-closets used by the steerage passengers were not used by the first-cabin passengers or the crew, not one of these latter was attacked by the disease, while large numbers of the steerage passengers, who exclusively used them, were seized with the malady. Does not this theory also afford a good explanation of the fact that the disorder is generally more active on lines of travel by water than by land? Although these views seem to me to be abundantly sustained by well known and acknowledged facts, I am ready to admit that there are some phenomena which cholera exhibits in its wanderings which it is difficult to explain on any existing theory. But this ought not to prevent us from profiting from what is actually known.

The practical lessons which flow from these considerations are the following :

1. Quarantine regulations cannot be too strict nor too rigidly enforced.
2. The most thorough sanitary measures must be enforced and carried out in all places exposed to the invasion of the disease, especially in large cities, where every effort should be used to have all houses, streets, alleys, privies, drains, cesspools, &c., thoroughly cleansed and disinfected.
3. All intercourse with places infected with the disease must be absolutely prohibited, or, at any rate, guarded with the greatest care and precaution.
4. Should the disease unfortunately be introduced into a place, cholera stools should never be emptied into necessaries and water-closets in common use.
5. The police should be instructed to pour into every privy and water-closet suitable disinfectants, or furnish the same for this purpose.

But in regard to this matter of prevention, the admirable directions you have already issued to the public leave nothing additional to be said or recommended. They embody, in fact, all the results of past experience, as well as the deduction of science and reason.

With much respect,

CHARLES A. LEE, M. D.,

Professor of Hygiene, &c., in the University of Buffalo.

LEWIS A. SAYRE, M. D.

BUFFALO, *January 18.*

L. A. SAYRE, M. D.:

MY DEAR SIR: In my letter of yesterday I omitted some points which I wish to add by way of postscript.

And, first, in regard to quarantine. You are aware that the quarantine of places in Europe and the United States during the earlier epidemics of cholera were nearly, if not altogether, useless; and you are also aware that the regulations were extremely lax, and rarely, if ever, properly enforced. But such has been the evidence of the portability of the cholera by means of human intercourse gathered from the history of the former as well as the present epidemic, that the strictest quarantine has been enforced in many places, and all such places, I believe, have entirely escaped the disease. You have also called attention to the fact, as observed in India, &c., in one of your recent communications to the New York Board of Health.

As the period of the incubation of the disease is from thirty-six hours to two or three days, (the highest period ever assigned to it not exceeding ten days,) if a vessel arrives from a foreign port where cholera prevails, if there has been no case of attack on the passage, it will be strong presumptive evidence that the seeds of the disease, or its specific virus, are not on board that vessel. Of course, it is possible, though not very probable, that the cholera, or that form of diarrhœa which precedes generally an acute attack, (but which is the true cholera,) may be present in some of the stowage or even cabin passengers, while there may have been no violent manifestations of cholera on the passage. But as the conditions met with on board our emigrant vessels are eminently calculated to develop the disease in its severest forms, if no such cases have occurred, I think the health officer would be justified in allowing such vessels and passengers to come to the city after undergoing the usual cleansings and purification, and perhaps the detention of a few days if there are any cases of diarrhœa on board or any other suspicious circumstances present.

Of course, very close and careful investigation will be necessary in all such cases, and if proper precautions are used cholera will never be introduced into New York city through any of its foreign shipping. Should it unfortunately be introduced into other ports and other cities of the United States, then I know of no other means of keeping it out of our city but the establishment of perfect non-intercourse; and there is no probability of our citizens ever consenting to such an embargo. In fact, the only security of our people against this disease is in carrying out the most thorough sanitary reforms, in personal, domestic, and civic cleanliness and purification, and it is a work which requires instant attention. Not a day, not an hour should be lost. Laws against the overcrowding of tenement houses should at once be passed by our legislature, with the power of enforcing them; also granting the right of domiciliary visitation and inspection in all cases deemed necessary. But on this point I have nothing to add to what you have already written, and what has again and again been reiterated by others.

Truly yours, &c.,

CHAS. A. LEE.

The resident physician then remarked that this letter of Dr. Lee satisfactorily explained certain facts observed by Dr. Rich at the cholera lazaretto, in the Balearic islands, and at Malta, in 1831. Dr. Rich states that he there observed that the persons who had charge of the privies and dejections of the patients were most likely to be attacked by the disease, and suspected that this was the principal source of its propagation. Having observed in Sicily that the choicest wines were preserved from evaporation by being placed in bottles and covered with an inch of olive oil in place of a cork, he conceived the idea of construct-

ing receptacles for all the dejections, to be covered with oil in the same way, and thus prevent the escape of noxious gases. He made for the purpose large vessels, partially filled with water, and poured on it one inch of common fish oil. Into these vessels all the excretions and soiled clothing were placed, and a jet of chlorine gas forced into them to saturation, before they were permitted to be handled by the assistants. After the adoption of this plan, not a case occurred among the assistants who had charge of this department of the hospital, whereas previous to its adoption they had died at the rate of from two to five a day.

Dr. Sayre regarded these facts and the views expressed by Dr. Lee, as well as the observations made upon the *Atalanta*, as of the most vital importance, as bringing the disease under the control of quarantine and sanitary laws. If these views are generally acted upon, and the proper regulations rigidly enforced on our entire sea-coast, the people need have no fear of any epidemic of cholera.

The health officer, Dr. Swinbourne, stated the difficulty in procuring a proper place at a distance from the city, where vessels might be properly purified and cleansed. He offered the following resolution, which was unanimously adopted:

Resolved, That in order that the proper steps may be taken to procure a suitable place for the purification of vessels arriving in this port, the mayor and health officer of Brooklyn be invited to attend a meeting of this board, to be hereafter called.

The board then adjourned.

