

Epidemic cholera: its history, causes, pathology, and treatment.

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EPIDEMIC CHOLERA:
ITS
HISTORY, CAUSES, PATHOLOGY,
AND
TREATMENT.

BY C. B. COVENTRY, M. D.

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"Internal sanitary arrangements, and not quarantine or sanitary lines, are the safeguards of nature against epidemic diseases."—FARR.—*Registrar General*.

BUFFALO:
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1849.

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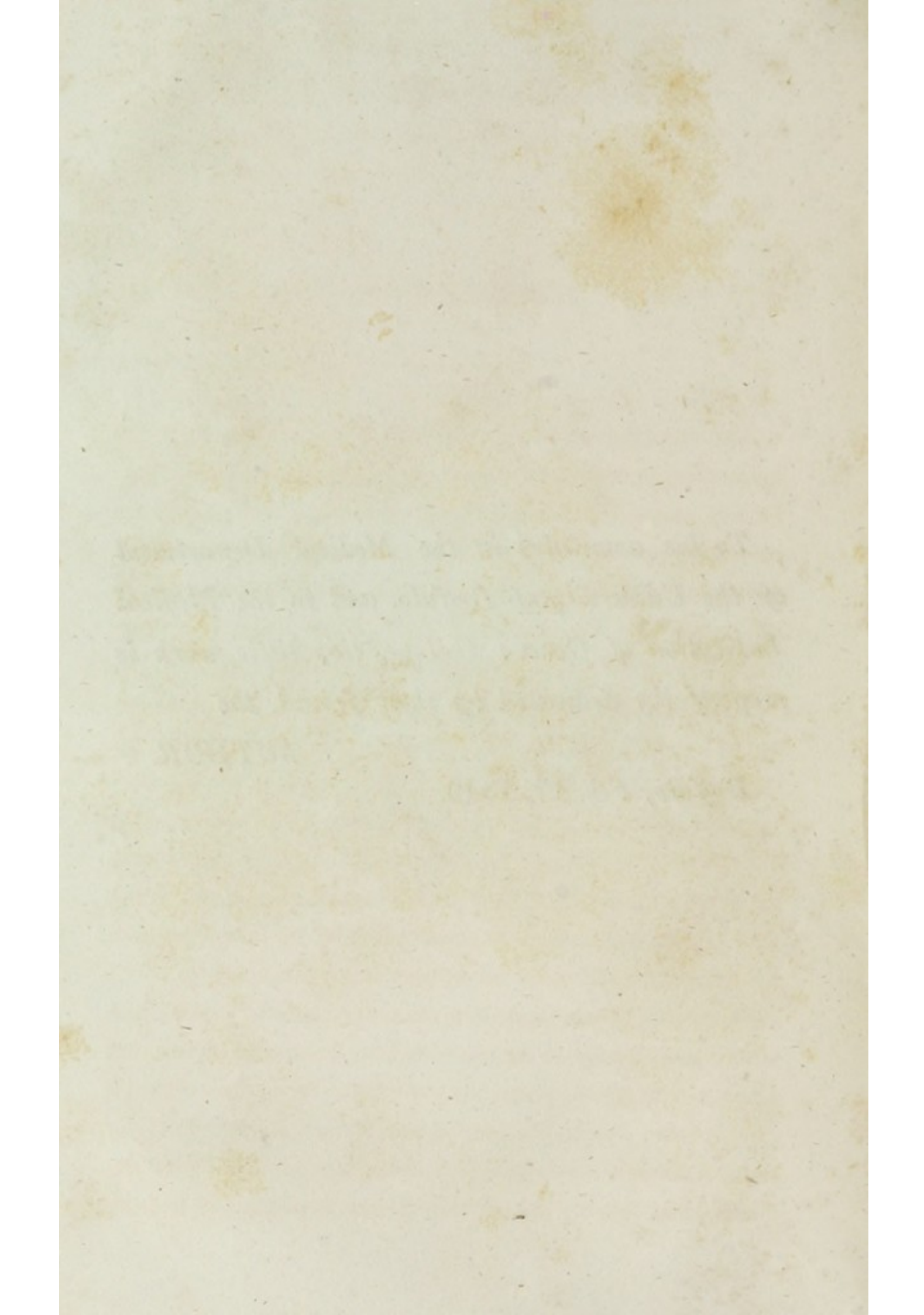
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Steam Press of
JEWETT, THOMAS & CO.
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*To his associates in the Medical Department
of the University of Buffalo, and in the Medical
Institution of Geneva College, this little work is
respectfully dedicated by their friend, the*

AUTHOR.

Buffalo, Feb. 17, 1849.



P R E F A C E.

The numerous applications which have been made to the author for copies of his Report on Epidemic Cholera—which he was unable to furnish—and the absence of any publication containing a concise history of the origin and progress of the epidemic, have induced him to present the following pages to the public. In the summer of 1831, when the cholera made its appearance at Montreal, the writer was appointed by the Board of Health of the city of Utica, to prepare and present to the Medical Society of the county of Oneida an address on the subject. Much of the early history of the disease, together with the symptoms and post-mortem appearances, are taken from that address, as it is believed that subsequent experience has only served to prove the correctness of the very graphic and accurate description of the disease given by ANNESLEY and other medical officers in India.

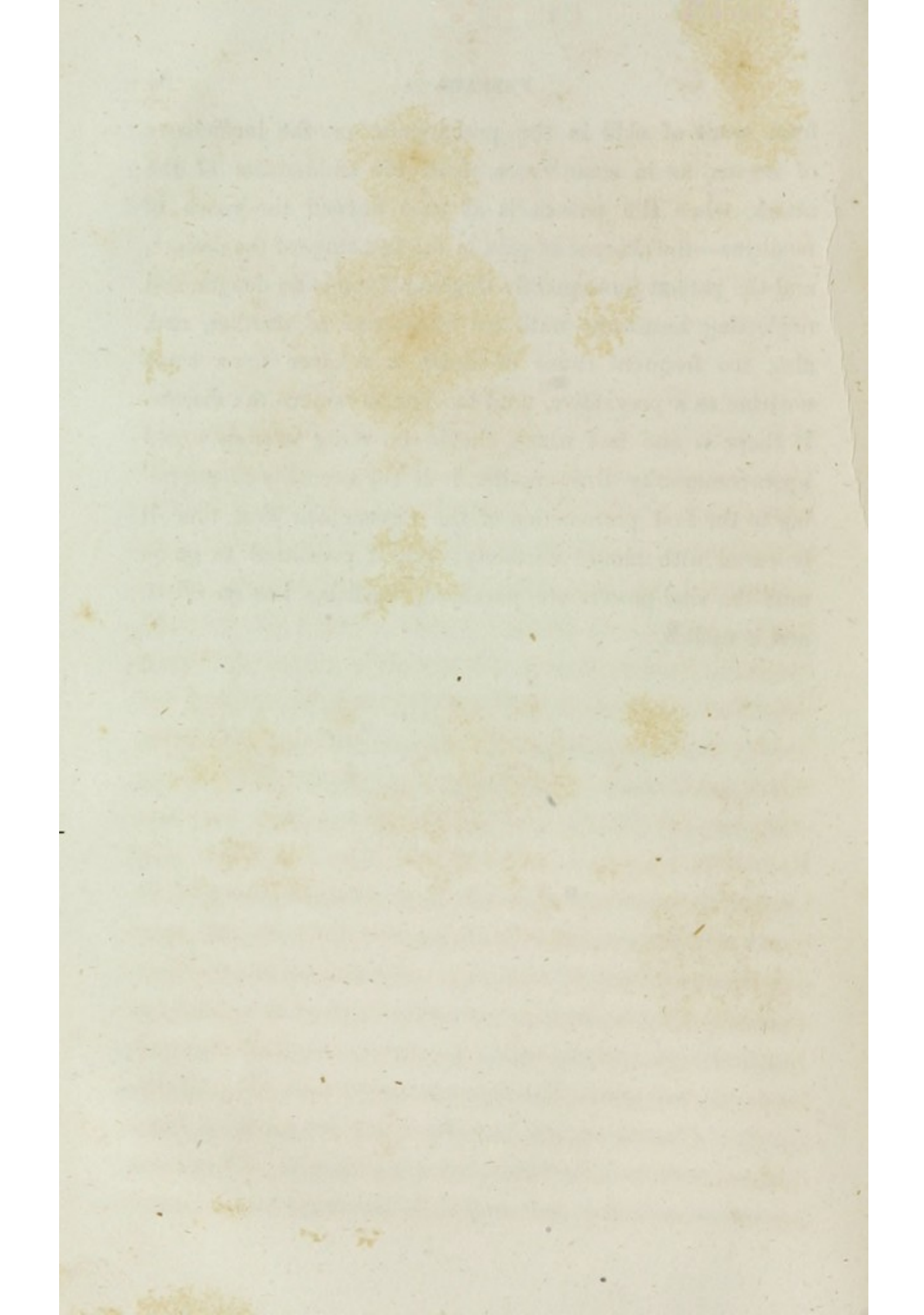
When the disease appeared in Albany and New York, the writer was appointed by the Common Council of the city of Utica to visit those places to investigate its nature. In his report which was published, he urged upon the Council the importance of removing those who had not sickened, from the houses and locality where the disease appeared—not from

fear of contagion, but lest some local cause might exist which contributed to produce the disease. This practice has, since that time, been adopted in both London and Edinburgh with the most decided advantage. The author was in the city of New York whilst the disease was at its height, and both there, and subsequently at Utica, had ample opportunity of becoming familiar with its character.

In the winter of 1847 and '48 our country seemed again threatened with this scourge, and the author visited Europe with instructions from the Medical Faculties of Geneva College and the University of Buffalo, to examine into its Pathology, Causes and Treatment; but the destroyer had been temporarily arrested in its course in Russia. The political disturbances in Europe rendered traveling both difficult and dangerous, so that, after making such investigations as were within his reach, he returned without having met the disease. The results of these investigations were presented to the respective Faculties in the form of a report, which was published in the Buffalo Medical Journal, in 1848.

For the views presented in this work the writer is alone responsible; they are the results of much examination and reflection, with considerable experience in the treatment of the disease. He will not undertake to say that the treatment recommended is the best that could be adopted; he can only say, that in his own hands it was so satisfactory that he was unwilling to hazard the welfare of his patients by trying other modes. The author is fully satisfied that the want of success in the treatment of cholera, does not arise so much

from want of skill in the practitioner, or the inefficiency of means, as in some cases, from the suddenness of the attack, when the patient is at once beyond the reach of medicine—the absence of pain in the first stage of the disease, and the patient consequently thinking there is no danger, and neglecting treatment until too late—and as another, and, alas, too frequent cause of death a reliance upon some nostrum as a preventive, until too late to remove the disease. If there is one fact which should be more strongly urged upon community than another, it is the necessity of attending to the first premonition of the disease; at that time it is cured with almost certainty; but if permitted to go on until the vital powers are paralyzed, medicine has no effect, and is useless.



EPIDEMIC CHOLERA.

HISTORY.

CHOLERA is a disease indigenous to India, and has prevailed to a greater or less extent since the first settlement of the country by Europeans. Mr. SCOTT, who was Surgeon and Secretary to the Medical Board of the Presidency of St. George, has even attempted to trace accounts of the disease to the mythological writers of antiquity, but with what success, I cannot say. It is however described by BONTIUS, as prevailing in 1629, and by PAISLESY, in 1774. SOMERSET, who traveled the Coromandel coast in 1774 and 1781, speaks of a disease resembling cholera, prevailing as an epidemic, and states that in one visitation of the disease, above 60,000 people from Cherigan to Pondicherry, perished. JAMESON, in the Bengal Reports, mentions it as prevailing in 1781, and in 1782. CURTIS gave the best description of the disease which had then been published. Cholera has also prevailed as an epidemic in Europe; thus,

SYDENHAM describes it as prevailing in London in 1669, and HUXHAM in 1741, and it is said to have prevailed extensively in Paris in 1730 and 1738. In all these accounts, the description seems to correspond with the cholera morbus, so frequently seen as a sporadic and endemic disease—in the autumnal months—in our own country, viz., profuse discharges of bile. In 1813, the late Dr. JAMES JOHNSON published his valuable work on the diseases of tropical climates, in which he denies the bilious character of the disease, and gives a description corresponding with that of the malignant or epidemic cholera. From this period, little notice is taken of it until 1817, when the disease broke out with great violence—and from which period ANNESLEY insists we should date its true history. The Bombay Reports state that “the cholera” first appeared in August of 1817, in Zila-Jepore, situated about 100 miles north-east of Calcutta. “There had been no previous marked peculiarity in the weather. The preceding hot and cold months were nowise different from those of former years; and the rainy season was proceeding with its wonted regularity. To the authorities on the spot, the disorder seemed at first to be of a purely local description, and attributable to the intemperate use of rank fish and bad rice. They were soon undeceived; after nearly depopu-

lating the town of Jepore, it spread rapidly through the adjoining villages, and ran from district to district, until it brought nearly the whole Province of Bengal under its influence. It next extended to Behar, and having visited the principal cities west and east of the Ganges, reached the upper provinces. There its course was more irregular." Benares, Allahabad, Gornckpore, Lucknow, Cawnpore, and the more populous towns in their vicinity, were affected nearly in the regular course of time. But it was otherwise in the more thinly populated parts of the country. The disease would sometimes make a complete circle round a village, and, leaving it untouched, pass on as if it was about to depart from the district. Then, after a lapse of weeks, or even months, it would suddenly return, and scarcely reappearing in the parts which it had already visited, would nearly depopulate the spot that had so recently congratulated itself on its escape. Sometimes, after running a long course on one side of the Ganges, it would, as if arrested by some unknown agent, at once stop, and taking a rapid sweep across the river, lay all waste on the opposite bank. It rarely failed to return, however, to the same track which it had left. After leaving a district or town, it sometimes re-visited it, but

in such cases, the second attacks were milder and more readily subdued by medicine than in the primary visitation. The disorder showed itself in Calcutta the first week of September. Few were seized in the beginning, but of those few, scarce one survived. From January to May it was at its height, and during the whole of that period, the deaths in the city seldom fell short of two hundred a week. It in turn attacked every division, and almost every corps in the army. Its greatest fatality was in the middle division. There it commenced its attack on the 18th or 19th of November, was at its utmost violence for four or five days, and finally withdrew in the first days of December. The division consisted of less than twelve thousand fighting men, and the deaths, at the lowest estimate, were three thousand, some say five, and even eight thousand. It seemed for a time to be arrested by the Bundelkinnd and Rewa hills. It was at Jubbulepore on the 10th of April, prevailed there, and at other subordinate stations, until the 21st, and nearly disappeared before the end of the month. Here its influence was singularly irregular. In the same camp, and under circumstances precisely similar, some corps of the army were entirely exempt; others had a few mild cases, and others

again, suffered very severely. The same irregularity held in different descriptions and classes of troops.—(*Bengal Reports.*)

Tracing the disease from Bengal, we find it at Madras in October, and at the Island of Ceylon in December. By January 1819, it had reached the southernmost extremity of the Peninsula, and the Isle of Bourbon in January, 1820.

Following the route of the Ganges, it extended north and west, reaching Bombay in September of 1818. The Report of the French Commissioners say it first appeared in Bombay on the 11th of August, 1820, and carried off, previous to the month of February following, eleven hundred and thirty victims. Again it returned in September of 1821, accompanied by excessive heat, and destroyed, from the 23d to the 28th, two hundred and thirty-five persons.—(*Report of the French Commissioners.*)

In its eastern route, we find it at Arracan in 1818, at Sumatra and Java in 1819, Manilla, Canton, &c., in 1820, entering Pekin in 1821, where it prevailed during 1821, '22, and '23. By the end of the last year it had traversed the Molucca and Spice Islands, including the Isle of Timor, which seems to have been its southeastern boundary.

Returning to its northwestern course, we find it had reached Muscat, at the southern extremity of the Persian Gulf, in June of 1821. Passing up the Gulf, and ravaging the towns on each side, it extended inland, spreading from Busheen through Persia, and from Bassora through Asiatic Turkey. It reached Bagdad in 1821; Mosul and Taurus in 1822, and before the Autumn of 1823 had reached Antioch, where it appeared to pause in its course, proceeding no further in that direction. During this time it had continued its ravages in Persia, appearing at Shiraz in September, 1821. For a time its further progress seemed stopped by the cold, but with the return of spring is revived its ravages, and by the close of 1822, almost every place of note in Persia had been visited by the pestilence. In August of 1823, the province of Shiroom was invaded, and after visiting Bakon and other ports on the Caspian, it reached Astrakan in September; threatening Europe from that quarter, but after the severe winter weather commenced, it died away, relieving Russia from the threatened danger. As the disease did not return in the spring, Europe began congratulating herself on her escape. The disease occasionally appeared in a mild form in the places it had passed over, but pursued no regular route. In 1825, we find medical writers speaking of it as an epidemic

which is past, and expressing the hope that it may never return.

Before proceeding to the history of the disease as it appeared in Europe, let us notice some of the conditions of its extension in India. In many instances we find the disease following the main route and avenues of communication from one city to another, particularly the course of the main streams. The congregation of large bodies of men — the fatigue, exposure, and intemperance inseparable from an army — seem particularly calculated to produce the disease. We find in India, that the cholera appeared almost simultaneously at different places in the same district, but in places remote from each other, and where there had been no intercommunication; whilst other places in constant intercourse with the sick escaped entirely. Even in the midst of vast regions suffering from the disease, we find considerable tracts where it never penetrated. ANNESLEY says “the hill forts in Kandiest remained exempt from cholera, while the disease inflicted the greatest ravages on the surrounding country. The individual attacks were so sudden and simultaneous in different parts of a city, that it is impossible to account for them on any other principle than by an epidemic cause. The great number attacked at the same instant — its fierce

and rapid march — and its prompt disappearance in many instances after a continuance of only a few days, seems to preclude all idea of its communication by contagion. In almost every part of India, persons attending upon the sick have been attacked in less numbers than others. Cholera patients in large, well ventilated, and clean apartments, did not communicate the disease to patients in the same wards, laboring under other diseases.” Dr. JOHNSON, who was Recording Secretary of the Medical Council of Calcutta, says, “Out of two hundred and fifty-three physicians who have attended to the disease throughout its whole course, three only were attacked with the disease, of whom one died. The medical authorities visited the hospitals both night and day, remaining there for a considerable time, yet none of the members were seized with the cholera.” Dr. ANNESLEY — for five years physician to the Madras Medical Establishment — had under his care a continued succession of patients, the average number being from one hundred and seventy to two hundred per day. The hospital was kept in a state of perfect cleanliness and free ventilation; all the wards were opened and communicated constantly with one another. A great number of persons attacked with cholera were brought to it daily, and, notwithstanding these persons were in-

discriminately dispersed among the other patients in the hospital, Mr. A. has never seen more than from six to seven cases developed in the house, and that during the space of five years.

The disease generally attacked those who were debilitated by forced marches, and by excesses of every kind: the poor — uncomfortably lodged, badly clothed, and imperfectly nourished — in a word, those who were suffering from the effects of fear or sorrow; from exhaustion consequent on bodily fatigue or dissipation; from filth, and from the privations of extreme poverty.

ANNESLEY shows that in the first periods of cholera, the disease is usually rapid and most generally fatal; in the second, more protracted, and more successfully treated; and at a still later period, comparatively mild, of short duration, and rarely mortal. The disease usually ran a regular course of accession, increase, and decline. Thus in the central division of the English Army, the cholera appeared on the 7th of November; from the 16th to the 22d it was at its height; towards its close it diminished considerably, and about the 2d and 3d of December had entirely disappeared. In the division of the left it appeared on the 10th of April; was at its vigor in the middle of the month, and after the commencement of the month of May there was not a case to be seen. It was

similar in the other divisions. When considerable military detachments encamped in the midst of these epidemic jungles, (*Foyers*,) or when they merely traversed them, the soldiers almost always contracted the cholera, and that in an intensity proportioned to the general predisposing causes, as fatigue, unwholesome food, &c. In many instances bodies of troops having the disease, formed junctions with other bodies, without the latter becoming affected. It was found that when the main body of troops were attacked with the disease, they were soon relieved by separating into small detachments. ANNESLEY mentions several cases where detachments, quitting a station where the cholera prevailed, and losing several men on the route, when they reached the new station, were free from the disease, neither did it make its appearance in the detachments which they joined. In one instance, it reigned with violence among the troops on the right of the line, whilst the 17th Regiment, occupying the left, were entirely free from it, though the intercourse between the two detachments was constant and uninterrupted. The Physico-Medical Society of Calcutta, in their Memoirs, exhibit numerous instances of local insalubrity, pervading almost every part of India, and also the great extent to which bilious intermittent and remittent fevers, colics, dysenteries,

&c., prevail, whilst on the other hand they mention places that remained entirely free from the disease. It seems that the winds neither hastened nor retarded the march of the cholera, neither did streams, rivers, lakes, nor arms of the sea, present any obstacle to its march. On the contrary, moisture seemed to favor its propagation. Although it is said to have appeared on high ground, yet it is certain that elevated positions were more exempt than the low grounds, and the inhabitants often fled to the hills to escape its ravages. In India the cholera has been observed at all seasons, but in northern regions it was certainly checked during the cold weather. Men were more frequently attacked than women and children. It was noticed on several occasions that the disease ceased suddenly after a severe storm accompanied with thunder. We shall see that the same circumstance occurred in this country. The invasion of the disease was most frequent in the night, or towards morning. In several instances, in India, it was noticed that a short time before, and at the time of invasion of the cholera, domestic animals, and particularly dogs, have been seized with severe and fatal diseases. In one instance a malignant intermittent fever prevailed at the same time with the cholera. ANNESLEY, JOHNSON, SEARL, and others, observe that relapses were not

unfrequent, and it has been noticed that those who recover from an attack of cholera are often for a long time troubled with derangements of the bowels. An important fact, noticed by almost all the writers in India, was, that most of those persons who escaped an attack of cholera, had more or less derangement of the bowels.

PROGRESS OF THE CHOLERA IN EUROPE.

In 1829 the cholera reappeared in some of the Provinces of Persia, and in August it reached Orenburg, the capital of the province of the same name. The first authenticated case appeared on the 26th of August; on the 9th and 10th of September four cases occurred, and from this period the disease rapidly increased; but by the 20th of November, it had entirely ceased; of a population of eleven thousand, one thousand had the disease, but only two hundred of them died. There has been much speculation as to the cause of the disease at Orenburg. It is true, the season immediately preceding the cholera had been marked by sudden and extreme vicissitudes; the humidity, particularly, had been very great, succeeding long droughts, a considerable quantity of fruits of an

indifferent or bad quality had been used ; a species of fermented drink, which the people were accustomed to use, had failed, but all these causes had frequently existed in previous years without producing cholera. By the advocates for contagion, it is said to have been brought by the caravans from Boukaria and Kliva, and by others, to the commercial relations with the neighboring hordes of Cossacks ; but caravans in previous years had arrived from cholera districts without bringing the disease. But what are the facts connected with its appearance ? On the 26th of August, 1829, at 9 o'clock in the morning, the surgeon detected the cholera in a soldier of the third battalion of the line, then in garrison at Orenburg. From the 26th of August to the 9th of September, no other person was attacked with the disease ; on the 9th of September, at 11 o'clock at night, another soldier of the same battalion was seized, and died about 5 o'clock the next evening. On the 10th two other patients were sent to the hospital, one of whom died ; the other recovered. On the 11th, a soldier of the same battalion was attacked ; on the 14th, a soldier of the battalion of Invalids ; on the 16th, two others of the same battalion, and on the 17th, two non-commissioned officers. During the whole of this time, until the 18th, but two of the citizens had the disease, both of whom died. If the dis-

ease had really been brought by the caravans, the citizens in immediate intercourse with them should have been first affected. On the 23d of September, it appeared at a fortress sixty miles west, and on the 30th, at a place twelve miles north, passing several villages in its course, leaving them untouched. By the middle of November, it had spread over an extent of two hundred miles. It seemed again checked by the cold, and by the middle of February, Russia was once more free from the disease.

In 1830 the cholera again appeared in some of the Persian Provinces on the Georgian frontier, on the Caspian Sea, visiting Bakin and Tiflis, the capital of Georgia, and on the 19th of July, had again reached Astrakan at the mouth of the Volga. In ten days, twelve hundred and ninety persons were seized, of whom four hundred and thirty-three died. From Astrakan it extended up the Volga, and on the 4th of August had extended two hundred and twenty miles, and on the 6th, two hundred miles further north, spreading in almost every direction. It reached Moscow about the middle of September, having traveled a distance of at least fifteen hundred miles in three months and a half. Extending south, and southwest, the following spring, it reached Warsaw about the middle of April, and the different ports on the

Baltic, in May of 1831. In June, of the same year, it had reached St. Petersburg. Shortly afterwards, it appeared at Archangel. Extending south, it was at Berlin in August, Vienna the following month, and on the 11th of October, at Hamburg.

The cholera made its appearance at Sunderland, in England, in October, 1831. On the 28th of November, there had been two hundred and ninety-four cases, of which sixty-eight had proved fatal, and thirty-two remained under treatment at the time of the report. It soon after appeared in London, and on the 18th of April, there had been twenty-four hundred and seventy-seven cases, of which, twelve hundred and one were fatal. In Dublin, ninety-four cases, and fifty-eight deaths. In Cork, eighty-five cases, and thirty-eight deaths. On the 19th, there had been, at Glasgow and the vicinity, eight hundred and ninety cases; at Edinburgh, one hundred and seventy-one cases. On the 28th of March, it was publicly announced that the cholera was in Paris. It is unnecessary to trace the spread of the disease in the provincial towns of France, or describe the ravages which it committed in the metropolis. Before following it across the Atlantic, let us pause to examine, briefly, the character of its progress in Europe. From the first appearance of the disease at Orenburg, the district

of Caen adopted the most severe, and particular precautions against its propagation; even the punishment of death was pronounced against any infraction of the sanitary laws. Yet this district was ravaged by the disease. The strictest medical police was established throughout Russia, extending even to Moscow, without the least apparent effect in checking the progress of the disease. St. Petersburg, though eighty leagues distant from the nearest point where the cholera had appeared, was subjected to the most rigid preventive measures: the city was surrounded by a triple cordon of guards; the citizens were directed to lay in a year's store of provision, in order to prevent the necessity of communication with the surrounding country; yet St. Petersburg was twice visited with the disease. On the contrary, at Thorn, though in constant communication by boats with Warsaw, the cholera did not appear, or if it did, not until a much later period. In England, too, the strictest sanitary regulations were established, but, as we have seen, without avail. It is true that, in some instances, places where these regulations were established, escaped the disease; but it is equally true that numerous villages, and other places where there was a constant intercourse with the sick, also escaped, whilst in most instances where they were adopted, they had no effect.

Let us turn now to our own continent. On the 11th of June it was publicly announced, that the malignant or Asiatic Cholera had appeared at Quebec. On the 12th of the same month, the Board of Health of Montreal state that there was no case of *malignant* cholera, though several patients had died of the common cholera of the country. On the 18th, only six days later, we find reported two thousand five hundred and sixteen cases and four hundred and thirty-seven deaths, but even this was thought at the time to be below the true estimate; the panic was so great that it was impossible to keep any accurate account of the numbers that sickened or died. On the 21st of June it was stated that the cholera was abating in Quebec. We have no account of the whole number of cases in that city. In the Hospital, the number of cases from the commencement to that date, was six hundred and ninety-nine, number of deaths, three hundred and sixty-one. On the 22d, it was said to be rapidly subsiding in Montreal, and on the 24th, Doct. BRONSON, who was sent out by the authorities of Albany, writes from Lapraira: — “I have come over to this place on account of the cessation of cholera at Montreal. On the 22d day of June, 1832, an act was passed, establishing quarantine regulations between the state of New York and ‘Upper and Lower

Canada,' on account of the supposed existence of the Asiatic or malignant Cholera in those Provinces." At the same time, the officers of the different towns, villages and cities were authorized to form Boards of Health, and to adopt such measures as they should deem necessary to avert the threatened pestilence. Notwithstanding the precautions which had been adopted, on the 21st of June, the cholera appeared in New York. All the intermediate places on the sea-board, as New Brunswick, Nova Scotia, Maine, Massachusetts, remaining free from it. Supposing the disease communicated, how did all these intermediate places, which were in constant intercourse with Montreal and Quebec, escape? Doct. M'NAUGHTON says two fatal cases occurred in Albany on the 3d day of July. "It originated in the city: we have no reason to attribute its commencement to intercourse with Canada. -During the latter part of June, diarrhoea and common cholera became frequent." From New York it extended south, appeared in Philadelphia on the 4th of July, and Baltimore in the course of the same month, and reached Charleston in November. In February, 1833, it was in Havana, Cuba, and the same year reached Mexico. Let us retrace our steps. From Montreal it extended west, up the St. Lawrence and along the great lakes. Whilst extending from Albany, in a

similar direction, along the course of the Canal, visiting in its course Utica, Syracuse, Rochester and Buffalo, it subsequently appeared in Detroit. A detachment of troops, who left Buffalo in health, stopped a short time at Detroit, where the disease was not then raging, were attacked on their route to Chicago, and suffered severely. About the 1st of October, it appeared almost simultaneously at Madison, Louisville and St. Louis, and by the latter end of the month had reached New Orleans. In its passage it extended to Tennessee, Illinois, Indiana and Kentucky, visiting Lexington, Maysville and some other places severely. The disease lingered in different parts of the country for two years; in 1834 it reappeared in several places where it had formerly been, and visited some that had escaped in 1832. Its general course was the same as it had been in Europe, following the course of navigable waters and principal highways, passing by many places without affecting them. In the city of Utica, where the author resided, there had been one case with all the symptoms of the epidemic cholera, the latter part of July, but the patient recovering, it was not reported by the Board of Health as a case of cholera. About the same time, another patient, a man of dissipated habits, died in the third stage of measles, with all the most malignant symptoms of the disease. On

the 12th of August the citizens were startled by the annunciation that four cases of cholera had appeared. In less than twenty-four hours all were dead, and these among the most respectable citizens of the place. All were distinct from each other in different parts of the city. Two were females, who, from the nature of the case, could hardly have been exposed to any contagion. From the 12th to the 27th there were 172 cases and 51 deaths; from the 12th to the 3d of September, 192 cases and 61 deaths. In the city of New York, the number of cases reported up to the 29th of August, when the Board resolved to cease to report, was 7118, the number of deaths reported by the Board, 2250. The number of interments reported by the sextons, give 3967 as from cholera. In Albany the Board of Health ceased to report on the 31st of August; number of cases reported, 1142, severe, 587, deaths, 410. In Philadelphia, up to September 1st, 2156 cases and 716 deaths. In Rochester, from the 20th to 27th, 372 cases, 103 deaths. In Buffalo it was announced on the 28th of August that the Cholera Hospital was closed, but it again broke out with increased severity. The whole number of cases up to the 28th, was 184, and 80 deaths. In addition to the places mentioned, it appeared in the state of New York at Ogdensburg, Pough-

keepsie, Troy, Brooklyn, Flat Bush, Sing Sing, Whitehall, Peekskill and some other minor places. On the other hand, the city of Hudson, the villages of Auburn, Geneva and Canandaigua, (all of which are on the great thoroughfares,) either escaped entirely, or only had those cases that came from other places. In the neighborhood of Utica, the villages of Whitestown, New Hartford, Clinton and Trenton, were thronged by those who had fled from the city, yet the disease never spread to the residents of those villages. How are these facts to be reconciled with the idea that the disease is contagious.

HISTORY OF THE PRESENT EPIDEMIC.

The cholera has continued to exist in some parts of the unhealthy districts of India from its eruption in 1817 to the present time. Europe and this country had, however, in a great measure, remained free from the pestilence until it again made its appearance on the frontier of Russia. A minute account of its progress would be merely a repetition of its former history; its course, its manner of progress, its symptoms, and, in short, all its features, and we are sorry to add, its results, are nearly the same. In 1844 it had extended beyond its former range to Afghanistan. In May of 1845, it was at Kandamar, where it carried off three hundred victims in a day; in June, at Kaboul; in July, at Herat. In November it was at Bokhara, and in February of 1846, penetrated as far as Meched; but as in former invasions, it seemed arrested by the cold. From Meched it extended east and west, following the direction of the great roads; it reached Asterabad in May, and Teheran in June, carrying off seven thousand per-

sons in seventy days : one-twentieth of the population. It broke out in Bagdad in September, 1846 ; its victims in three weeks amounting to forty-three hundred. Towards the end of November it reached Medina and Mecca. At Mecca its victims amounted to fifteen thousand, out of a population of one hundred thousand. From Teheran the disease spread in two directions ; following the west coast of the Caspian, it penetrated into ancient Medea, the present province of Adhubidjan. We trace it to Kasbin, Tebriz, Ourmiah. In November, 1846, it invaded the Russian provinces of Talieh and Chirwan. Here, again, it stopped for the winter. For two months nothing was heard of it ; but in March, 1847, it again resumed its westward course ; on one side it invaded Georgia ; on the other, penetrating the mountains, it attacked the Russian army, inflicting a greater loss than a three years' war. It is unnecessary to follow out the detailed account of the different villages and cities which were attacked ; those who wish, will find such account in a paper, communicated by Prof. DIXON to the New York Medical Journal, for January, 1849, and from which our information is derived. There is a small colony of Moravians at a place called Sarepta, situated in a bend of the river, which has been noted by travelers for its neatness, industry, &c. Doctor

VEROLLOT says, "The cholera its-selfe seems to respect this sacred spot, passing by both in 1830 and 1847, without inflicting on it the least injury. In the provinces of the Caucasus it is observed that the disease showed its-selfe more intense in the vallies and defiles inaccessible to the winds, where the heat is great; and that it attacked the Russian troops and residents in preference to the Mussleman."

On the 24th of October the first case appeared at Constantinople; no others occurred until the 31st, after which it became epidemic, and raged violently. On the 26th of November it appeared in Moscow, about the same season of the year that it appeared in 1830. It seemed to remain nearly stationary for the winter. The Health Commissioners of England, speaking of the disease, say it seems nearly in the same condition as in the winter of 1830 and '31. In the returning spring it again broke out in the Turkish capital, and spread to the neighboring cities. It continued to appear at Moscow, and reached St. Petersburg by the middle of June. In the same month it was at Cronstadt, in Bucharest, and at Abo, in Finland. In August it was at Berlin, and had appeared at Konningsburg, Warsaw, and Vienna. In September it existed in Hamburg, where its ravages were considerable, and where, for a time, it seemed

arrested. In October it was stated that a case had occurred on board a vessel at Hull, and by the end of that month it was stated that several cases had occurred in London, Sunderland, and Edinburgh. Cases have continued to occur at these several places; thus far, however, the disease has been comparatively mild in its character, and the cases but few. Whether this is to be attributed to the greater mildness of the disease—to the season of the year—or to the greater sanitary precautions which have been adopted, it is impossible to say.

On the 25th of November, 1848, the cholera broke out on board the packet ship *New York*, bound for New York. She was then in north latitude 42 degrees, longitude 61 degrees W. about 140 miles S. S. West of Sable Island; on the 23d and 24th the wind was N. N. W.; on the 25th it changed to south-west, with squalls of rain. In the morning the barometer was at thirty inches, and fell during the day to twenty-nine and a half. Thermometer sixty Fahrenheit. Tuesday, 28th, wind moderate from N. W. barometer thirty inches, thermometer 42 degrees. The ship sailed from Havre on the 9th of November, with twenty-one cabin and three hundred and thirty-one steerage passengers on board. The steerage passengers were part Germans from different parts of Ger-

many, and the rest from Paris and its vicinity. There was no cholera either at Paris or Havre when the ship left the latter port, and the passengers were healthy. They remained in good health until the 25th, when one of the steerage passengers was taken sick with a severe bowel complaint. The next day several others sickened, and cases continued to occur until the 4th of December, when they arrived at Quarantine, when eight or ten were found sick with cholera, and removed to the Quarantine hospital; nearly an equal number had died on board. The ship was placed in Quarantine, and the steerage passengers in the Quarantine store houses. The disease continued to prevail among the passengers, three or four new cases daily until the 9th, when there were no new cases until the 11th; it then reappeared, and soon after appeared among the patients of the marine hospital, with whom those from on board the ship had had no communication whatever. Of those from the ship, the German emigrants alone seem to have been affected. A few days after its appearance at the Quarantine, an individual, coming from that place, stopped at a German emigrant house, corner of Greenwich and Cedar Streets, and being attacked with the disease, was carried directly back and died in a few hours. On the 4th of December, several days after, another case occurred in the

same house in Greenwich Street, which was excessively filthy and crowded with upwards of two hundred emigrant lodgers. This man also died in little more than twenty-four hours. No more cases occurred in the city until the 20th, when a German who had been twelve or eighteen months in this country, and who, only a few days previous, had come to the city to take passage back to Europe, and who had had no connection whatever with the house in Greenwich Street, the ship New York, or the Quarantine; was attacked at 161 Washington Street, and soon died. No cases have since occurred in the city, up to January 1st, 1849. The whole number of cases reported from the Quarantine by the health officers and by the Resident Physicians to January 1st, 1849 was ninety-one, number of deaths, forty-seven.

The cholera has also made its appearance in the southern section of our country. It was supposed to have been introduced into New Orleans by passengers from the ship Swanton, from Havre. They were landed December 11th, and on the 12th the first case was reported. Since that period, to January 5th, the whole number of cases of death reported from cholera was eleven hundred and fifteen. Reported Asiatic, eight hundred and seventy; cholera otherwise designated, two hundred and forty-five. The disease is said to be

confined principally to foreigners, not showing itself, to any great extent, among the natives of New Orleans.

Dr. WEDERSTRANDT gives the following account of its appearance in the Hospital and City :—“On the 12th of the present month, (December, 1848,) the cholera broke out in this Hospital. The first two cases were a man and woman, brought in, in the last stage of the disease, from the ship *Swanton*, which had just arrived from Havre. The vessel left Havre with all the crew and passengers in good health ; neither was the cholera in that port when she left ; but some of the passengers were from a part of Germany where the cholera was raging. When two weeks at sea, the disease broke out ; and seventeen persons died in a few days, and were thrown overboard. At the time she reached here, but two were sick, and they were brought to the hospital. The very next day, numerous cases appeared all over the city, but principally in the houses nearest to the shipping, or among persons employed on the wharves. Since the middle of this month (December) we have admitted forty or fifty persons each day ; upwards of fifty cases have originated in the house, among the convalescent from other diseases, and the attendants. Three of the washer women have taken the disease, and two have died.”

From New Orleans it has extended up the Mississippi and its tributaries. Several cases have occurred on board the boats on the river, and the cases have extended to Louisville, Cincinnati, and St. Louis, but did not spread in either of those places, and by the last accounts had nearly or entirely ceased, (February 20th, 1849.).

The cholera has also made its appearance in a form quite as severe as at New Orleans, at Lavaca, Texas; the 8th Regiment United States' Infantry have suffered severely.

C A U S E.

When we remembered the panic which prevailed in 1832 — the vexation caused, and the money expended, in useless quarantines — the hurried and barbarous interment of the dead, scarce waiting till the breath had left the body — the worse than brutal desertion and neglect of friends and relations — all growing out of a belief in the contagious nature of the disease; we rejoiced in the belief, that whatever of suffering a superintending Providence might see fit to inflict, we would not again thus aggravate them by our own acts. It was not, therefore, without much regret, that we found the able and talented Prof. of Theory and Practice, in the University of New York, come out in the New York Journal, advocating the doctrine of contagion in cholera. If there was any one fact connected with the disease, which was immutably settled, as we supposed, it was, its non-contagious character. If the decisive and explicit testimony of ANNESLEY, who, for five years, had charge of a hospital where cholera

patients were mingled indiscriminately with those from other diseases, and who tells us, that not more than six or seven cases originated in the hospital during that time; the no less emphatic testimony of Doct. SEARLE, who had the disease in India, and who informed us, that when in charge of the Hospital at Warsaw, but two cases originated in the Hospital, and that he himself slept in the bed in which a gentleman had died of the disease, the preceding night, without his contracting it — if the testimony of ANNESLEY and others in India, that when the disease attacked a corps in the army, it was the soonest got rid of, by separating them into small detachments — if the fact, which was notorious in Asia, Europe and America, that when the disease attacked large cities, the population, in fleeing into the country and neighboring villages, did not carry the disease with them — we repeat, if these facts, together with the experience of the profession from Calcutta to Moscow, and from Moscow to Quebec, and from Quebec to New Orleans, is not sufficient to settle the question of contagion, we are at a loss to see how it is ever to be settled. The early French commissioners, in their report dated, March 4th, 1831, after a very careful and rigid examination of all the facts connected with its propagation, say, “there is then, no

absolute, natural, necessary, inevitable property in cholera, of extending from one individual to another. The cholera, is not then, by its nature, essentially, primitively transmissible, since it has been observed in all ages, and by all physicians, in the sporadic state, the catastatic state, the endemic state and the sympto-matic state, without ever having passed beyond the limits assigned to the particular causes which have been shown to originate it." The Health Commissioners in England are decidedly opposed to the doctrine of its promulgation by contagion. The committee of the Royal College of Physicians, London, say, "cholera appears to have been very rarely communicated by personal contact, and all attempts to stay its progress by cordons or quarantines, have failed. No appreciable increase of danger is incurred by ministering to persons afflicted with it, and no safety afforded to community by isolation of the sick." To this we may add the emphatic testimony of Doct. SEARLE:—

"Upon the question whether cholera is infectious or not, I can speak decidedly that it is not so! This is no vague opinion, hastily arrived at, but the deliberate result of grave consideration and lengthened observation. Without entering into a protracted discussion upon a subject which, in the sequel, would prove unsatisfactory to those who

have already made up their minds to the opposite conclusion, I shall briefly adduce a few facts corroborative of the opinion expressed. First, observing that, when in Poland, the principal cholera hospital of Warsaw, of which I was in charge, was on the skirts of the city, and the rendezvous of all the incurables within it, the professionals of the city sending me all their hopeless cases, and I had from thirty to sixty cases constantly under treatment, of which number half a dozen or more were buried daily. Well, then, of thirty or more attendants, during the three months that I was in charge, we had among this number, only two cases of the disease; and the cause of the attack in both cases was most satisfactorily to be explained. One of these men was not employed in attendance upon the sick, but in the kitchen, preparing the food, and daily frequenting the shambles; the other, an hospital attendant, whom the apothecary, finding intoxicated, had locked up for the night in a damp cellar with no other covering than his shirt. Now, as the epidemic condition of the air was at this time in existence, a sufficient cause of the disease in both these cases is apparent, without the remotest necessity for attributing either of them to infection. Whereas, the hospital attendants, who, in turns, were confined night and day by their duties on the sick and dying, sleeping on the floor by

night, or on any of the unoccupied cots, and in the focus of forty or more cases, upon an average, in various stages of the disease; and who were further employed by day in assisting at the dissection, and sewing up the bodies of such as were examined, which were numerous, cleaning, also, the dissecting-room, and burying the dead—wholly escaped the disease; as well as myself, who was daily occupied among them, and often till eleven o'clock at night. And more than this, the French government, having sent out a commission of medical gentlemen to Warsaw, I gave them the opportunity, afforded by my hospital, to try any experiment they thought proper, with reference to this question, and they not only dissected a great many bodies, but tried various experiments, not only upon animals, but upon themselves, also, by inhaling the breath, and inoculation with the blood and excretions of the sick, and in no way was it possible to produce the disease, or infect another person! To these facts I may add another, namely, of a gentleman with the disease dying upon my own cot, and my having not only slept, on the following night, in the same room, but upon the cot and bedding as well; nor were any of my personal establishment ever affected by the disease; nor were any of the professional men of Warsaw, to my knowledge, affected, save two, and

one of these was a gentleman not in practice, but who, feeling unwell, had endeavored to right himself by keeping his bowels open by eating sour, half-fermented, rye bread.

“To these facts I may add those of daily occurrence in India, the disease attacking exclusively the men occupying the lower floor of a barrack, while those of the upper floor escaped; of its attacking the men sleeping on one side of a ship’s deck, in the roads off Madras only, or one portion of a cantonment, or the inhabitants of one bank of a river exclusively; or of the disease attacking a regiment on its march, most virulently to-day, and ceasing on the regiment’s moving a few miles on the morrow. And I may next refer my reader to the circumstances attending the occurrence of the disease at Kurratchee, as previously recorded; and in proof, also, of another fact, namely, its occurrence in certain conditions of the atmosphere, and with the greatest virulence at the outset, (in opposition to the ordinary mode of the extension of contagious disease,) and diminishing immediately after a storm, and suddenly terminating with a permanent change in the weather.

“There is another fact which alone, in my opinion, is sufficient to decide the question, namely, that contagious diseases are, one and all of them, characterized by the fact, that the poison, or infec-

tious matter of the disease, is concocted or developed in the system under circumstances of quickened circulation of the blood and depraved secretions — under a heated and excited state of the system — under the conditions, in short, of fever; whereas the condition of the system in cholera, and characteristic features of the disease, are precisely of the opposite character — inertia, general prostration, cold, defective excitement! It is true that fever, or a certain degree of excitement, very generally succeeds to the attack, but if this disease be properly treated, the fever is, in general, slight, and of short duration; indeed, a simple reaction, as the conservative energies of the system recover themselves. This fact, in my opinion, deserves particular notice, as it occurs in a disease which often takes its rise from a cause — malaria, which, under ordinary circumstances, gives rise to fever of a remittent character, and often, therefore, of lengthened duration; leading to the inference, which I have long since arrived at, from a different train of reasoning, conjoined with observation and successful treatment, that the evacuations which attend cholera, are curative efforts of the system, eliminating the malarial impregnation of the blood, and expelling from the system this poisonous agent, and thus the fever which succeeds it, is of slight degree and of short duration — that is, when, as I

have before said, the disease has been properly treated.

“With these facts before him, can any man, exercising common sense, come to any other conclusion than the one I have arrived at, namely, that the disease is not infectious, but that the predisposing cause of it, in some cases, or the exciting cause of it in others, is aerial, and this often, too, of local origin? or, when not so, this aerial cause is aided in its effects by local agencies and predisposing conditions of the system favorable to the development of the disease?

“Persons, it is true, are not unfrequently attacked by the disease occupying the same house, in like manner as they are attacked with typhus fever, scarlatina, or the like, and for this very obvious reason, that they are exposed to the same aerial currents or local influences, and circumstances, in numerous other particulars, which occasioned the disease of the individual first attacked.

“After saying all that I have done, in proof that the disease is not infectious, I cannot, however, too strongly urge upon all, the necessity of free ventilation, and the utmost cleanliness being observed, not only about the persons of the sick, but with respect to those in health also, and the dwelling of every one, both in the house and around the locality, wherever it may be situated;

and when the disease prevails, the closing of windows, and exclusion of the air from the direction in which the disease is known more particularly to prevail, or of any obvious cause of the pollution of the air, such as dung-heaps, sewers, burial grounds, ponds, marshes, or the like; the cause, if not in all cases being thus derived, assuredly being very frequently so, or aggravated by them. And thus we see that one house, or side of a street, or locality, becomes infected with the disease, and not another; and thus, too, it is, that low, crowded, filthy, and ill-ventilated situations, are those in which it more frequently prevails. And in illustration of the effects of such causes, I may mention an occurrence at Clapham, a few years ago, when the contents of a cess-pool having been thrown over a garden adjacent to the play-ground at a boys' school, of twenty-two boys, twenty were attacked with vomiting, purging, and symptoms precisely in character with those of cholera, and of which number two died within the period of a couple of days!"

Dr. PARKES "has never observed any indication of contagion in cholera, all the phenomena of propagation, and development of the virus, which have fallen under his own observation, being sufficiently accounted for, without calling in the aid of the hypothesis that the virus can multiply itself

by its action on the living human system." In the Medico-Chirurgical Review for January, 1848, we find the following observations:—"A general review of the whole case, then, leads us to this conclusion, that where the epidemic influence is strongly developed, infection is not likely to have any perceptible influence in propagating it; that the general march of the disease cannot be dependent on human communication, and that quarantine regulations, and similar restrictions upon intercourse, are utterly incapable of checking its progress; and that, if human communication be in any case the immediate agency in its transmission, it can only be so when a strong predisposition has been occasioned by epidemic influence being dependent upon those health-destroying conditions which it is the object of the sanitary reform to remove." Dr. MILROY quotes, as the motto to his pamphlet on the cholera, the following emphatic declaration of Mr. FARR in the report of the Registrar General:—"Internal sanitary arrangements, and not quarantine or sanitary lines, are the safe-guards of nations against epidemic diseases."

Dr. MILROY says, "as surely has cholera always sought out, and settled down upon the abodes of misery and filth, in every city of Europe, that has been visited by it, as the vulture-crows in the

East, ever congregate where there is the most offal and garbage to be found." I will not go so far as to assert, that in an impure atmosphere, where a strong predisposition already exists, it may not be excited into action, by intercourse with the disease. This is a question which we have no means of determining. During the prevalence of the cholera in 1832, I visited the several hospitals in New York, which were filled with patients, in every stage of the disease; visited patients in the same city, in the worst abodes of poverty, wretchedness and filth; and during its prevalence in Utica, I was constantly engaged in attendance upon the sick, often sleeping in an apartment adjoining that of my patient, without contracting the disease. I am fully satisfied that many of the regulations adopted in 1832, although adopted with the best of motives, did more harm than good. No human agency has yet been found sufficient to arrest the progress, or avert the attack of the destroyer. But although we cannot prevent, much may be done to mitigate the severity of such a visitation. This is to be done by a careful removal, as far as possible, of every source of impurity of the atmosphere, and obviating all the ordinary causes of disease, by enjoining on the people the importance of strict temperance in eating, as well as drinking—the avoidance of everything that has a tendency

to enervate or exhaust the system, and particularly the avoidance of drastic cathartics—in short, the strict observance of the Laws of Health. The medical profession should urge upon community the importance of attending upon the first premonition of the disease. The first indication of derangement of the stomach or bowels, should be sufficient to confine the patient to his bed, and to send for medical advice. It is the universal testimony of the profession, that the disease usually yields readily to treatment in the first stage. The establishment of cholera hospitals, (with the exception of particular circumstances,) is worse than useless. Patients will not resort to them in the first stage of the disease, and their removal in the second stage, would be hazardous, if not fatal. The Sanitary Commissioners of England say, that ‘the views which we have adopted in relation to the inexpediency of special cholera hospitals, except in cases of peculiar necessity, have been confirmed by the coincident adoption of the same conclusions in Russia.’ Should this scourge again visit our state, (which there is much reason to fear,) special cholera hospitals would be necessary at all the cities and large villages on the line of internal navigation; not for the accommodation of the citizens, but for the prompt removal of persons sickening on boats, who would not find accommo-

dation in private dwellings. A sufficient number of medical attendants should be engaged, at the public charge, to render prompt assistance in all cases where such attention may be required, and the corpse of no person, dying from cholera, should be interred, until permission was granted, either by the public authorities, or the physician in attendance. There are few diseases where the danger of premature interment is so great as in cholera. The sudden prostration of nervous energy, as well as the sudden and profuse discharge of the fluids of the system, must frequently produce a state of syncope, which, in a time of general panic and alarm, might readily be mistaken for death, by an incautious observer. Fortunately, no necessity exists for a hurried interment. No poison has been generated by febrile action, which might contaminate the surrounding air, and thus prove injurious to others; decomposition is even slower in taking place than in deaths from ordinary causes. In no case should the body be interred in less than twenty-four hours after death.

The Metropolitan Sanitary Commissioners of England, in their report presented on the 19th of February, 1848, say, "that the more recent experience in Russia, has led to the general abandonment of the theory of its propagation by contagion; a conclusion, in which, after a full

consideration of the evidence presented to us, we fully concur."

Although the idea that the disease can be propagated by contagion in a healthy atmosphere, is generally abandoned by the profession, there are many advocates for what is termed "contingent contagion," that is, that many diseases not communicable in a healthy atmosphere, may become contagious in a close, confined and impure atmosphere. This is, no doubt, true with regard to the typhus or ship fever, which has been recently prevailing in our sea-ports. The number of believers in contingent contagion, as regards cholera, seem increasing. No doubt every cause of impurity of the atmosphere tends to produce the disease, and that each case of sickness is an additional cause of such impurity; but all past experience goes to prove, that hospitals properly ventilated and cleansed, are no more liable to produce the disease than other places.

The causes of cholera may very properly be divided into two, epidemic and sporadic. Nearly all writers agree, that when the disease prevails as an epidemic, there is some peculiar condition of the atmosphere, which operates by reducing the active energies of the system, and subverting the healthy manifestations of life, and has, therefore, been not improperly termed poisonous. This is

usually termed the *epidemic condition of the atmosphere*. In what this changed condition consists, we are unable to say. Whether, as Doct. JOHNSON supposed it was, telluric, or an emanation from the earth, or whether, as others have supposed, it was some change in the electrical condition of the atmosphere, we have no means of determining. Not knowing in what it consists, we have no means of regulating, controlling or preventing it. What we do know, and what is most important to be known, is, that it seldom, if ever, exists in sufficient intensity to produce the disease, without the aid of some of the sporadic causes. These causes are often within our reach, under our control, and not unfrequently, of our own creation. Whether the sporadic causes alone, are ever sufficient to produce the disease, we shall not pretend to say. In India, it is believed by many, they are; and it is well known, that in certain unhealthy districts, there are, at certain seasons of the year, sporadic cases of cholera, which those familiar with the disease, say, are identical in their character with the epidemic disease. It is well known, that in our own country, these causes are often sufficient to produce the cholera morbus, and sometimes in a form almost as virulent as the epidemic cholera. We do not suppose that there is anything more mysterious in the spread and

extension of the cholera, than in that of any other epidemic disease. All epidemics are mysteries, and the epidemic constitution of the atmosphere in cholera, is no more so, than that of influenza, which has so frequently prevailed. We believe that the fact which we have stated, that the epidemic cause alone, is rarely, if ever, sufficient to produce the disease, accounts satisfactorily for the apparent irregularity of its course. We have seen, that, where the sporadic causes existed in greatest intensity, the ravages of the disease have been greatest. We have seen, that in cold climates, its extension has been almost invariably arrested by the frost, which destroyed, in a great measure, the sporadic or local causes. We have seen the little colony of Moravians, on the banks of the Volga, who are distinguished for their cleanliness, industry and sobriety, twice escaping, when the whole surrounding country was laid waste by its ravages. Let us, then, examine what are the sporadic causes of cholera. These may be divided into two classes: 1st, those that affect the whole community of a place, and 2d, those that affect the individuals. First, sporadic causes, affecting the whole community of a city or village, are what is usually termed malaric, or in other words, bad air. This arises, in a great measure, from the decomposition of animal and vegetable matter.

It is often found in its greatest intensity, in low, damp and marshy situations, in the neighborhood of stagnant pools of water—it is always generated in crowded cities, and where large numbers of persons are collected together, as in armies. It is increased in cities, by close, narrow streets, preventing proper ventilation—by accumulation of filth in the streets, in dwellings, or about the premises; in short, wherever there are accumulations of vegetable and animal matter, there is a focus for the generation of malaria. Wherever a free ventilation is prevented, these gasses accumulate and become more concentrated. We have seen that the cholera was most virulent in the close, confined vallies of the Caucasus. We do not know all the agents which go to make up the impurity of the air, but we know that sulphuretted hydrogen, one of the gases given off by decomposition, is so poisonous, that birds and small animals have been killed almost instantly by an atmosphere, containing 1-1500 of this gas, and a horse, by exposing it to an atmosphere, containing 1-250 of this gas. Carbonic acid gas and carburetted hydrogen, though not so apparent to the senses, are but little less poisonous. The existence of from eight to nine per cent. of carbonic acid in the atmosphere, is sufficient to destroy life; but the presence of no more than from one to

two per cent. is sufficient to interfere materially with the vital functions, and produce a condition of the system, rendering it more susceptible to the action of the epidemic cause of disease. Now this gas is not only generated by decomposition of vegetable and animal matter, but is constantly given off in the process of respiration, and accumulates where large bodies of men are collected together. Hence, the reason why, in India, when the cholera broke out in a division of the army, the most certain mode of getting rid of it, was to disperse the men in small bodies. Carbonic acid gas, being heavier than atmospheric air, seeks the lowest situations; and hence the reason that the inmates of the lowest part of a house have frequently been attacked with cholera, while those living in an upper story, have escaped. We thus see why a close, crowded part of a city, with narrow, crooked streets, should suffer so much more severely than the more elevated and well ventilated parts. We also see why large and crowded cities, as a general rule, suffer so much more than the country. We need not go to the statistics of cholera; it is proved by all the statistical returns, that in ordinary seasons, the mortality in cities is greater than that of the country; and in cities, the close, crowded and sunken parts, are much more unhealthy than the open, well

ventilated portions. It is, therefore, no way surprising, that when you add the epidemic influence of the atmosphere, to the local causes of disease, it should produce cholera.

CAUSES OF CHOLERA AFFECTING THE INDIVIDUAL.

In addition to the local causes which we have enumerated, there are many affecting the condition of the individual system; this embraces all those causes which tend to weaken the vital power, as exhaustion from over exertion, either physical or mental; want of sufficient nourishment from want of sufficient food; derangement of the digestive organs, by excesses either in eating or drinking — a want of sufficient clothing; excesses of every description which produce exhaustion — these causes alone may be sufficient so to depress the vital energies as to bring it within the influence of the epidemic cause. We most frequently find these personal causes combined with the others we have enumerated. There is one cause of cholera which is not confined to the poor and destitute, but which pervades the whole community, and which, perhaps, has caused more fatality in chole a

than any single cause, aside from the epidemic influence; we refer to the influence produced by fear. It is well known that there is no moral influence which produces so depressing an effect on the system as fear. It has been clearly proved that the most vigorous of men, even in the most perfect health, may be frightened to death. We have known nervous and irritable persons, who were always thrown into a diarrhoea when much alarmed. If we only look at a frightened person, we see that they present almost the first symptoms of cholera — the face is pale, the surface cold, the pulse feeble, the blood having retreated from the surface to the central organs of the body. Could we satisfy community of what we fully believe, that the epidemic cause is seldom or never sufficient to produce the disease, and that they have nothing to fear so long as they avoid the other and local causes, we should confer the greatest possible benefit on the public. That the depressing effects of fear and grief, should be sufficient to bring the system in a condition to be acted upon by the epidemic cause, will surprise no one acquainted with the laws of health.

SYMPTOMS.

The disease may properly be divided into four stages; each of which has its own peculiar symptoms, requiring some modification in the treatment.

The first, or what has sometimes been termed the premonitory stage, (but which is really the first stage of the disease,) may exist for several days or for a few hours, and in some of the most violent forms of the disease seems almost wanting. Still it is believed that in nearly every case, if the patient was seen at the proper time, it would be found that the first stage had been present for a longer or shorter period. Prof. M'NAUGHTON, speaking of the disease as it prevailed at Albany, in 1832, says:—"The very first morbid change I have been able to detect, was in the tongue. This varies with a shade of white so slight as scarcely to be perceptible, to that in which it is covered with a white slimy coat as thick as a sheet of paper. This coat may exist to a considerable degree without any loss of appetite or complaint on the part of the patient; but when it is well

marked, a slight check of perspiration or irregularity of diet, will bring on diarrhoea, and should the exciting cause continue until cholera comes on, it will be of the worst kind, attended with spasms and rice water evacuations from the bowels and stomach. Diarrhoea or other premonitory symptoms may not precede cholera more than a few hours, or even a shorter time; but I believe the white tongue precedes it invariably for at least twenty-four hours, and often for a week. This index, therefore, affords patients an opportunity of attending to themselves ere it be too late; *for malignant cholera is a disease to be prevented not cured.*" We believe that our friend, Professor M'NAUGHTON, was the first to point out this important diagnostic symptom of the early stage of the disease. Together with this peculiar appearance of the tongue, or soon following it, will be a sense of languor and debility; some impairment of the appetite; an uneasy sensation of looseness in the bowels; sometimes slight diarrhoea, but without pain; coldness of the feet and surface generally; the pulse, if examined, is usually found soft and feeble, sometimes increased in frequency, at other times there is no perceptible alteration. This may not improperly be termed the curable stage. In this stage the disease may be arrested with almost certainty by judicious means; but if permitted to

run on to the second stage, the patient is often beyond the reach of medicine, and the longer the diarrhoea has continued the greater is the danger in the second stage. When diarrhoea is present, the character of the discharges indicates the nature of the disease, being thin and watery and having the peculiar appearance of rice water; sometimes, however, brown and muddy; whenever these symptoms are present no time should be lost before applying for medical aid.

SYMPTOMS IN THE SECOND STAGE.

These may succeed in such rapid succession, that the first stage may be overlooked. Doct. WHITING thinks that one peculiarity of the disease which recently prevailed at the Quarantine, was, that it was less frequently preceded by the stage just described, but patients were at once seized with the symptoms of the second stage. These consist of violent vomiting and purging of the rice water fluid, followed with severe cramps of the muscles of the extremities, and other parts; attended with excruciating suffering, with coldness of the surface and extremities; a feeble pulse; often

extreme thirst, and a peculiar, burning sensation at the pit of the stomach. ANNESLEY thinks this burning sensation is pathognomic; he says:—"This symptom, therefore, I consider as particularly characteristic of the epidemic cholera." What is peculiar, is, that on post mortem examination, Mr. A. found a peculiar vermilion blush, directly in the situation of this burning sensation; and says this morbid appearance, which is related to it, I conceive to be the particular lesion which is uniformly to be met with after death, on dissection of cases of the disease. The pulse is soft and feeble, varying from eighty to one hundred, but occasionally increased in frequency to one hundred and forty. The tongue usually coated with the white, clammy fur, described by Doct. M'NAUGHTON. The cramps usually commence in the toes and fingers, and gradually extend to the larger muscles, usually succeeding the vomiting and purging; but sometimes simultaneous, and at others, even preceeding them. But these symptoms are subject to much variation. In some feeble persons, we have known the cramp entirely wanting; when present, it usually affects single muscles, and rarely, if ever, produces general convulsions. The vomiting is not always present, and patients have sunk rapidly into the third stage, from the profuseness of the alvine dischar-

ges alone. In some few instances, though rarely, the discharges from the bowels were absent, when vomiting was present; and on the other hand, we have seen some of the worst cases of the disease, where the patient was verging into the third stage, where there had been neither vomiting, purging or cramp, and yet the cold, clammy tongue, the feeble pulse and haggard countenance, told but too plainly, the character of the disease. The discharges, though commonly of the appearance of rice water, are not invariably so. There is, however, no appearance of fecal matter, unless at the very onset of the disease; but in some instances, they are dark brown, or muddy, sometimes greenish, and occasionally bloody, but invariably thin and watery. The period of continuance of the second stage, is very various; it may continue from one to twenty-four, or thirty-six hours, seldom longer; it may run into the third stage, or merge at once, and pass into the fourth, without passing through the third. Sometimes, where the attack is severe, and particularly if the fluids of the system have been drained off by a previous diarrhoea, the disease runs its course with almost the rapidity, as if an artery was opened, and they bled to death. Not unfrequently, the profuseness of the discharges produced syncope, and no doubt, this state was

sometimes mistaken for actual death. When the disease is not arrested in its progress, it almost invariably runs into the third stage; but when the discharges have been arrested, the patient may pass directly into the fourth stage.

SYMPTOMS OF THE THIRD STAGE — A STAGE
OF COLLAPSE.

The symptoms of this stage are so characteristic, that, having once been seen, they can never be forgotten. The shrunken features — the cold, clammy surface — the corrugated hands, having the appearance as if they had been macerated — the leaden hue of the surface — the profuse, clammy perspiration — the cold, clammy tongue — the slow and oppressed breathing — the pulseless, or nearly pulseless wrist, all together, present a combination of symptoms, which could scarce be mistaken for any other disease. In many, perhaps most cases in this stage, the discharges and the cramp ceases. It is very rare that a patient survives after reaching this stage of the disease, and in most cases, medicines are perfectly powerless. In fact, nearly all the vital functions have ceased; there is no secretion of bile or urine, and if medi-

cines are taken into the stomach, they are not absorbed, and, hence, can have no effect. An imperfect respiration seems all that remains of life, and after a longer or shorter period, this ceases, and

“Life’s troubled dream is o’er.”

SYMPTOMS OF THE FOURTH STAGE.

This should perhaps more properly be considered as one of the sequences of the cholera, than a stage of the disease, as a large portion, indeed much the largest portion of those who die of the disease, die in the third stage. When the discharges have been suddenly arrested in the second stage, and partial re-action takes place, and in some cases where they rally from the third stage, a train of symptoms, and a condition supervene almost perfectly analogous to typhoid fever. There can be but little doubt that, when these febrile symptoms supervened, it arose from inflammation succeeding to the congested condition of the stomach and other internal organs. There is a temporary suspension of the vomiting; the alvine discharges cease; the pulse returns to the wrist, but is sharp

and quick; the chest becomes warm, whilst the extremities remain cold; the intense thirst and burning sensation become more aggravated, and the desire for cold drinks increases. The vomiting returns, but is of a different character; instead of throwing up large quantities of rice water fluid, it rejects with violence whatever is taken into the organ. The pulse becomes rapid and quick; mouth and tongue dry and furred; frequently stupor, delirium, and other evidence of affection of the brain supervene. When the disease proves fatal, the tongue becomes brown or dark colored and parched; the teeth and lips covered with sordes; pulse weak and tremulous; great restlessness or muttering delirium; alternate chills and heat of surface; hiccough and frequently dark pitchy alvine evacuations, under which the patients sink. Dr. WHITING says, that one peculiarity of the disease at the Quarantine, was, that a larger proportion of the patients died from this consecutive fever. Did not the stimulating treatment at first adopted have something to do with this result?

PATHOLOGY.

Although there is some discrepancy as to the primary action of the morbid agent, nearly all writers agree as to the ultimate effect. Our own views are in accordance with those expressed by the French Commissioners, that the first step is a derangement in the functions of the nervous system. They say:—"In the first place let us examine that remarkable impression which the epidemic state every where produces upon the general organization. Every where has this influence been observed. In India, as well as in Russia and Poland, physicians of every opinion have noted it. Few individuals escape its action, even of those in whom the symptoms of cholera have not been realized. Almost every person residing in countries attacked by the epidemic cholera, complain of spontaneous lassitude, general uneasiness, heaviness of the head, frequent vertigo and prostration, carried even to syncope. Hence we manifestly perceive in all these individuals who are placed within the sphere of activity of the

epidemic influence, the unequivocal indication of a change, of a diminution in the great function, of *inervation*; that is to say, of the vivifying influence of the nervous system upon the other system, upon the various apparatuses, and upon all the organs of the economy. Such is the capital, essential, and primitive effect of the epidemical agent, since it is exercised on every individual, whether healthy or diseased, strong or weak, though in variable degrees of intensity. This effect, at the same time constant, positive, manifest, predominates over all others." "To this primary consequence of the diminution of the nervous energy are joined, almost simultaneously, constipation or a slight relax, anorexy or loss of appetite, flatulency, a gentle diarrhœa; in short, a more or less considerable disturbance of the functions of the gastro-intestinal-mucous membrane. Thus on the one hand diminution of the nervous functions, on the other, evident effects of this depression of nervous energy on the mucous membranes, which are thereby imperfectly supported, vivified, and excited; these are the two primitive effects produced by the epidemic influence." "Now, if we bear in mind these two orders of phenomena, the diminution of the nervous functions, and the direct bearing of this diminution upon the mucous system, we will manifestly have the rudiments, the

germ, and, as it were, the diminution of the disease." We give below the very minute and accurate description of the necroscopic examinations, as given by ANNESLEY. At the same time, we are bound to admit that, although all subsequent examiners agree in the general accuracy of the appearances given by ANNESLEY, yet there is not that certainty or uniformity found as to enable us to point to any one lesion, and say, it is necessarily and essentially present in all cases of cholera, or so universal as to stand in relation to the disease as cause and effect. This is precisely as we should expect. We believe that epidemic cholera is essentially a functional disease, and, consequently, that no one organic lesion would be invariably found. Congestion of the internal venous system is the most uniform, but the amount of congestion found would depend, in a measure, on the previous condition of the vascular system, the treatment which had been adopted, and the amount of the discharges; where the latter had been very profuse we should expect, as a matter of course, that the intensity of the congestion would be less; and again, on the other hand, when the disease had passed into the fourth stage, we should expect to find evidence of inflammation. The French Commissioners, before quoted, after a very careful and critical examination of the different accounts of

the appearances found on post-mortem examinations, come to the following conclusions:—"Hence it results that cholera, so far as relates to its necroscopic character, has received, neither previous to the epidemic in India, nor during this fatal occurrence, nor since, any important elucidation, notwithstanding the numerous works published on the subject, both in Asia and Europe. Hence the epidemic cholera has no positive, definite, or fixed character, and if it is possible to discover the true seat of this malady — if we may retain the hope of ascertaining its nature — we must seek elsewhere than in pathological anatomy for that information which will enable us to obtain this important result."

"ABDOMEN.—Upon opening the abdomen a peculiar offensive odor, as remarked by Mr. JAMIESON in his report of the Medical Board of the Bengal Presidency, respecting this disease, was sometimes observed, particularly in those who died suddenly. The *stomach* generally contained more or less of a watery, muddy, and sometimes a grumous fluid. The color of this fluid was various; sometimes it was colorless, at other times greenish, or passing to a yellow tint; and in some cases it was brown, approaching to black.

"The peritoneal surface of the organ seldom presented any other appearance than a greater con-

gestion of the veins than was natural. The mucous surface was sometimes covered by a dark-colored slimy mucus, and when this was removed, considerable congestion of the venous capillaries was observed. This congestion seemed to be chiefly seated in the sub-mucous cellular membrane, and was occasionally so extensive in particular points, as to give the appearance of ecchymosis of this coat. The internal tunic was occasionally much corrugated, seemingly much thickened, and doughy to the touch, more especially when it was not much distended by fluid or flatus. The stomach was frequently flabby and relaxed, and its coats could be more easily penetrated by a harder body than usual. In those cases in which some degree of re-action of the vital energies had taken place, the internal surface of this organ, particularly about the pylorus, presented a livelier color, approaching to red, and was apparently thickened and contracted.

“The omentum was sometimes corrugated, or thrown to one side of the abdomen.

“The *small intestines* were occasionally more than usually constricted in parts, frequently distended by flatus, and their veins generally engorged with black blood; externally, they presented a doughy thickened appearance, and their color varied from a pale vermilion, through all the deeper

shades, to a dark purplish hue; the former being chiefly remarkable on the peritoneal surface of the duodenum and jejunum; the latter in the ileum, about where it terminates in the cæcum. These shades of color appeared to arise from the different degrees of congestion in the capillaries and veins in different parts of the canal, from the injection of the arterial capillaries, and from the color of the blood which the vessels contained.

“When the small intestines were laid open, their coats seemed thickened, especially if the intestine was not distended, or if it was in any degree contracted; they were frequently flabby, and more easily torn than usual. The internal surface was generally found covered by a viscid, thick, and clay-colored substance, which sometimes passed to a cream or yellowish tint. This was particularly remarked in those who died after a sudden and short attack of the disease. When this matter was removed, the mucous coat itself was usually pale in the upper portions of the small intestines, and dark-colored and congested in the lower part, particularly were the ileum is blue or purplish externally. When the disease was of longer continuance, and more particularly when some re-action of the powers of the system had taken place, this viscid appearance was detached to a greater or less extent, and was floating in the fluid contents of the small

and large intestines; and the mucous coat then seemed more vascular, and the arterial capillaries appeared more injected, than in the former class of cases.

“The *large intestines* were frequently contracted, sometimes they were distended, and at others they were both contracted and distended, in different parts, in the same case. Congestion of the veins and venous capillaries was generally evident, especially of those seated in the cellular substance connecting the tunics. The external coat was generally dark-colored, owing to the blackness of the blood in the congested vessels. The mucous surface was frequently very vascular; sometimes it presented a dark red color, especially if the patient had lived for some time, and strong stimulants had been administered. These intestines never contained any fæces, and the fluids met with in them were generally similar to those found in the stomach and small intestines.

“The *liver* was generally darker than natural, and loaded with black thick blood. Sometimes this organ assumed a purplish or dark blue color; at other times it was mottled, enlarged, flabby, or pulpy, and easily torn.

“The *gall-bladder* was always distended by thick, viscid bile, which was generally of a dark-green or black color, in subjects who died before

the appearance of bile in the excretions; and although the hepatic duct was large and permeable, the mouth of the common duct was generally constricted, and seldom permitted the bile to flow into the duodenum without considerable pressure made upon the gall-bladder. In those cases which terminated fatally after an illness of long duration, and in which some re-action of the vital energies, and a flow of bile into the intestines had taken place, the gall-bladder was generally empty, or contained but a small quantity of healthy bile; and the common duct, although not always free from some degree of constriction, was generally more permeable than in the former class of cases. In a few instances the gall-bladder was quite empty, relaxed, and flabby. In almost all the cases wherein bile was observed in the excretions, and the gall-bladder was found empty on dissection, and, consequently, when it could be legitimately inferred that this secretion had passed into the intestines during the life of the patient, I remarked that the viscid matter usually found lining the mucous surface of the small intestines, in the former description of cases, was detached to a greater or less extent, and was either floating in the fluid contents of the large intestines, or entirely removed, along with the matters which had been ejected from them.

“The *spleen* was generally enlarged, and engorged with black blood; and its texture was frequently soft. In some cases it fell to pieces whilst the examination of it, and the adjoining parts, was being performed, owing as much to an inordinate degree of distension, as to relaxation or softening of its texture. The color of this viscus was uniformly darker than usual.”

“The *blood*.—The peculiar appearance of the blood particularly excited my attention in the first case of the disease which came under my care. In every dissection which I performed, I uniformly found the *venæ cavæ*, the mesenteric veins, the veins in the vicinity of the heart, the *vena portæ*, the iliac and subclavian veins, and the sinuses of the brain, loaded by a thick, viscid, and black blood. The right cavities of the heart were generally distended with the same description of blood, and when any was found in the left cavities of this organ, it was similar in appearance to that lodged in the right. The lungs were always completely engorged with blood, of a pitchy or black appearance, and all the internal viscera presented a greater or less degree of congestion of blood, possessing nearly the same characters. The blood-vessels at the external surface of the body, and in the extremities, were generally contracted and empty, or nearly so.

“That this condition of the circulating fluid was not consequent on death, although it might be more or less heightened thereby, is evident from the appearances which this fluid exhibited when taken away from a patient even at an early period of the disease. During the subsequent stage, and more especially as the disease advanced to a fatal issue, the particular characters of the blood which have been now noticed were the most manifest, as may be seen in the details of the foregoing cases. That this state of the blood was the first material derangement consequent on the invasion of the efficient cause of the malady, I shall not contend; but that it was one of the earliest links in the chain of effects consequent to that cause, and that it afterwards tended, by a necessary and evident process, to heighten and perpetuate the derangement whence itself sprung, I have not the least doubt. That the nervous influence, in some manner or other, received the first impressiön of the morbid cause, and afterwards gave rise to this condition of the circulating fluid, may be inferred, if we be permitted to conceive that a diminished function of the lungs, liver, and other excerning viscera was co-existent, or nearly so, with that primary change; and consequently, that the blood did not undergo an elimination of its effete and noxious constituents to an extent requisite to the

performance of the organic actions and the continuance of life."

Whatever be the nature of the poison, and whether its primary action be on the blood, or the nervous system, the effect is evidently to prevent those changes in the circulation by which heat is generated, and the vital current purified. Carbonic acid is not formed by the union of the carbon with oxygen; heat is not generated; the blood, still charged with carbon, paralyzes the action of the heart, which, in its turn, becomes enfeebled; congestion of the internal organs follows, as in actual asphyxia; the nervous system being also paralyzed, the congested organs are incapable of retaining their contents, and the watery portion of the blood escaping by transudation into the intestinal canal, is ejected by vomiting and purging — hence, the discharge — hence, the discoloration from retention of the carbon — hence, the extreme cold, in consequence of heat not being generated, and of the rapid evaporation from the surface — hence, also, the dark color, and thickened consistency of the circulating fluid, and, hence, too, the reason why injection of saline fluids into the veins, seldom succeeds in restoring the patient, though it may revive him for a time, for it cannot remove the congestion of the capillary system. *

* Nearly all writers and observers, agree that congestion of the internal

Dr. E. A. PARKES, of London, in a recent work on the subject, has advanced, and endeavored to maintain the doctrine, that the poison of the atmosphere acts primarily on the blood. I am, however, disposed to believe that the condition of the blood, upon which he founds his principal evidence, is not the primary affection, but that the impression is primarily on the nervous system, prostrating its energies, and thus preventing those changes in the condition of the blood, and nutritive processes, by which the blood is purified, and caloric evolved. Dr. PARKES thinks that the changes induced in the function of respiration, are directly consequent upon the alteration of the blood, and are the proper and distinctive symptoms of the disease. We suppose, on the contrary, that the changes in the function of respiration are induced by deficiency in nervous energy, and that the altered state of the blood follows as an effect, instead of being the cause. In the post-mortem examinations, made by Dr. PARKES, it was

organs, and of the venous system in particular, is one of the most constant and striking of the phenomena in cholera. We fear, however, that sufficient discrimination has not been used, as to the important pathological distinction between active and passive congestion; for the first blood-letting is an almost certain remedy, whilst, for the second, its utility is frequently more than problematical. No doubt the congestion in cholera, is of the latter character, and unless we can secure some evidence of reaction, there would be no certainty of the congestion being relieved by bleeding.

found that the blood coagulated very imperfectly, or not at all. This appeared to be owing to the diminution, or entire absence of fibrin. The blood was found accumulated in the internal organs, in the large vessels, and right side of the heart, being dark colored, and of thicker consistence than natural. The greater consistence must be attributed to the serous portion of the blood having been thrown off by the copious evacuations, by the stomach and bowels.

It would appear, from the experiments of Docts. CLANNY, THOMPSON and O'SHAUGHNESSY, that the blood, in advanced cholera, contained less water, albumen, fibrin and saline matter, and much more of the red globules, than an equal weight of healthy blood. The carbonate of soda was altogether wanting, and the other salts of the blood, greatly diminished. The fluid portion of the discharges, which are often very great, consist mostly of water, holding carbonate of soda, with other salts, and a little uncoagulated albumen in solution, whilst the solid portions are fibrin or coagulated albumen, so that the constituents are precisely those wanting in the blood. The inference is clear, that the rice water discharges are merely a portion of the blood itself, little changed by secretion and the absence of serum in the cholera

blood, and the greater density and viscosity of the blood is thus explained. — *Dublin Journal*, number forty-four.

Doct. STEVENS has attempted to prove that the salts of healthy blood, favor, if they be not essential for its conversion from venous to arterial blood, and the loss of them, may be one cause of the blackness and the indisposition to become red by exposure to the air, so characteristic of cholera blood. The breath of cholera patients, in collapse, is not only cold, but contains but little carbonic acid, showing the absence of those changes by which heat is generated.

TREATMENT OF EPIDEMIC CHOLERA.

Before proceeding to the consideration of the treatment of the different stages of the disease, we would premise some general considerations. As we have seen, there are no morbid lesions found, which are so uniformly present, as to determine that they are the cause of the symptoms and other phenomena which present themselves. In the absence of any certain, fixed change of parts, we are compelled, as has been seen, to look to other causes, more especially, since the several phenomena may be explained in accordance with different views. Thus, as we have seen, the French Commissioners believe that the poisonous influence of the epidemic constitution of the air, (whatever it may be) operates at first, by depressing the nervous and vital energies of the system; and that the other symptoms follow as a consequence of such depression. This is our own opinion, and it is sustained by ANNESLEY, JOHNSON, SEARLE, and a host of others. Doct. PARKES, as we have seen, supposes the poison of the atmos-

phere acts primarily on the blood. ANNESLEY attributed the epidemic cholera to the existence of a certain acid in the blood; Doct. STEPHENS, that it was owing to the absence of certain saline ingredients, and hence arose the practice of saline injections into the veins. Doct. ALBERT, who was sent by the King of Prussia to Moscow, for the purpose of studying the nature of cholera, endeavored to prove that the disease consisted in a paralytic affection of the heart. Of course, each writer recommended, and their admirers adopted, a course of treatment supposed to be in accordance with their particular notions of the disease. On the other hand, most practitioners, wedded to no particular theory, observing this diversity of opinion, prescribed for what they considered the most prominent symptoms; but even here, there was room for diversity of opinion. One, struck by the extreme prostration of the nervous and vital energies, gave active stimulants to remove the prostration, without regard to the mischief his stimulants might produce in the congested state of the internal organs. Another, noticing the profuseness of the discharges, gave astringents and anodynes to arrest them, not reflecting that this was only a consequence of more serious disease, and was rather conservative than otherwise, as there could be no chance of

recovery, until the congestions were removed by this or some other mode. Some kind practitioners, commiserating the sufferings of their patients, looked only at the intense sufferings from the cramp, and endeavored to stifle the outcries of the system, by large doses of anodyne, and thus let their patients sink quietly to their last repose.

It is frequently asked, how does it happen, that, under these different modes, they seem nearly all to be about equally successful, or rather, unsuccessful? This is not strictly true; still, there is an approximation to the truth, and it must be admitted, that the results of different modes of treatment have been much nearer alike than we should have expected, without an examination of the cause. It is now almost universally conceded, that in order that medicinal agents should act upon the system, they must be absorbed and carried into the circulation. Fluids are mostly absorbed by the veins of the stomach; whether anything but the chyle is taken up by the lacteals, is doubtful; no doubt, however, exists, that it is through the venous absorption, that medicines find their way into the circulation. But we have seen that these veins, so far from being in a condition to absorb, are actually so congested as to be throwing off the fluid they contain, and hence arose the observation of some of the medical men

in India, that "you might as well put the medicine into the vest pocket, as in the stomach," It cannot, therefore, be a matter of surprise that the results of different modes of treatment should have been nearly the same, when, in fact, the patient was usually in a condition not to be affected by any treatment. Unfortunately, the first stage of cholera — and the only stage in which it is certainly curable — is not attended with any acute suffering, and hence the uneasy sensations have only been termed premonitory symptoms. These are neglected or overlooked by the patient, and it is only when the oppressed system — almost in the death-struggle — cries out, and makes an effort to relieve herself, that the physician is called upon, and odium is thrown on the profession, for not curing, what is, in its very nature incurable. We must, however, admit that the means resorted to have too often been calculated (if they had any effect) to paralyze the recuperative efforts of the system, and smooth the passage to the grave rather than aid the efforts at restoration. What else could be the effect of the large doses of anodynes sometimes given?

TREATMENT OF THE FIRST STAGE OF EPIDEMIC CHOLERA.

If the views which we have taken of the causes and pathology are correct, it is self-evident that there can be no specific for cholera; that what may be proper in one stage of the disease, would be inappropriate in another; — in short, that, like other diseases, it must be treated on general principles. All persons acquainted with cholera admit, that few diseases are more manageable, or yield more readily to treatment, in its first stage. In the second stage, or after vomiting and purging, with or without cramps, have commenced, the result is very doubtful, and in the third, or what is usually termed the stage of collapse, the case is all but hopeless. The first, and most important step, is to impress upon community the necessity of applying for advice in the first stage, or during what have usually been termed the premonitory symptoms. The latter term should be abolished, as both incorrect, and injurious in its effects. The Sanitary Commissioners of England are undoubtedly right in considering this the first stage of cholera; and were patients told, and impressed with the belief that they then had the disease, they would more readily submit to the necessary

treatment, than if merely told they had the premonitory symptoms.

In the first stage of the disease, the patient should confine himself to his bed, and take some mild aromatic drink, such as an infusion of spearmint, or camomile, or warm camphor julep, until reaction takes place. The perspiration which follows should be encouraged by diluent drinks; this may also be promoted by a powder composed of three or four grains of Dover's powder, and one of calomel; or a pill composed of camphor, gr. ss. opium, gr. one-fourth, calomel, gr. i., repeated every two hours; after the sweating has continued three or four hours, the surface should be dried with warm flannel cloths, and a fresh and clean dress of flannel put on. When five or six of the pills have been taken, they should be suspended, and a small dose of rhubarb and magnesia, or of pure castor oil, should be given. Active, or drastic, or saline cathartics should not be given, and if castor oil is used, great care should be taken to see that it is pure and fresh. Most disastrous consequences have resulted from giving castor oil that was rancid. Mild nourishment should be given from time to time. If found necessary, the pills and cathartics may be repeated. The object should be to remove nervous prostration, and the conges-

tion which has already commenced, by equalizing the circulation.

Some modification of this treatment will undoubtedly be necessary in different cases. If the stomach is oppressed by a recent meal, or if there is a sense of nausea and oppression, an emetic of ipecacuanha or sul. zinc, or the two combined, may be given. Sufficient should be given to produce prompt vomiting, and the patient should be carefully watched by his medical attendant. If the patient is full, strong and plethoric, and the pulse increased in force and frequency, and the breathing oppressed and laborious, blood should be drawn from the arm, carefully watching its effect. If the pulse becomes more free and open, and the breathing less oppressed, it should be permitted to flow until a moderate quantity is taken; but if the oppression is not relieved, and the patient becomes faint, it should be stopped, and not repeated until reaction is restored. When bleeding by the arm is not deemed admissible, and the oppression is great, cups may be applied over the region of the stomach. The object of the bleeding is to relieve the internal congestion, but it would be advisable to secure some evidence of reaction: otherwise, where the prostration was great, we might draw off the small amount of fluid circulating in the

vessels without relieving the engorgement, and thus hasten a fatal termination. ANNESLEY, who was a great advocate for blood letting, admits, that some patients died sooner than they would have done without it, but that none of them could have recovered. The emetic tends to excite a reaction, divert the circulation to the surface, to relieve the stomach and prepare it for a more favorable action of the calomel ; but if much nausea is produced, it might increase the prostration. Relapses are liable to occur, and the patient should for some days confine himself to the house, and to a light, but mildly nourishing diet, and avoid all exposure to the damp, cold, or fatigue.

TREATMENT OF THE SECOND STAGE.

We have seen that the characteristics of this stage are vomiting and purging — the discharges thin and watery, usually of the rice water appearance — cramps, coldness of the surface, and frequent, though soft and feeble pulse. It has, however, been noticed that any one, or nearly all these symptoms may be wanting; the cramps are frequently absent in persons of feeble and delicate

constitutions. We have seen persons in this stage running rapidly into the third stage, when there had been neither vomiting, purging or cramp, and yet the cold clammy surface, the cold tongue, the feeble pulse, oppressed and anxious breathing, indicated but too surely the nature of the disease. The treatment must be governed in some measure by the condition of the patient. The indications are to restore the circulation to the surface, relieve the internal congestion, and arouse the action of those organs by which the effete portions are removed from the system—these are the liver, the kidneys, the perspiratory glands of the skin, and the small glands of Peyer and Brunner in the intestinal canal. We have seen that the secretions of bile and urine are completely arrested, and that one of the most favorable indications is a restoration of those secretions. All observers agree in the assertion that the appearance of bilious matters in the discharges is one of the first, and most favorable indications in case of recovery. Doct. O'SHAUGHNESSY says, that in the blood of a patient who died of cholera, he found 3-65 parts of urea in 1000; a principle which is eliminated by the kidneys, and which, as is well-known, cannot be retained in the circulation without serious injury. If the patient was strong and plethoric, the pulse still full and distinct, the cramp severe, or there

was great oppression in breathing, we would put the feet and legs in water as warm as could be born, with the addition of mustard and common salt to the water; open a vein in the arm, and bleed from five, to sixteen or twenty ounces, watching the effect produced on the pulse and system generally; then place the patient in a warm bed, apply warmth to the feet and along the limbs; apply a large mustard cataplasm over the stomach, and give one of the pills of calomel, opium and camphor, every half hour. If the desire for cold drinks is not strong, the patient may drink from time to time a weak infusion of spear-mint, with the addition of eight or ten drops of camphorated spirits; if, however, the thirst is very intense, cold water may be used instead of the tea, and, in addition, small bits of ice given from time to time. The bed should be placed in the center of the room, without curtains, and the room should, if possible, be large, well ventilated, and if an upper room the better. If the weather will admit, the doors and windows should be kept open—the best stimulus for the patient is plenty of pure air—if the weather is damp, or chilly, so as to render it necessary to close the windows and doors, a little fire should be placed in an open fireplace, to temper the air; no persons should be admitted into the room except such as are neces-

sary ; every additional person renders the air more impure. The warm applications should be changed from time to time. If the patient be much exhausted or vomiting, on no consideration should he be permitted to get up to use the night vessel — the effort of getting up revives the vomiting, and this in its turn brings on the alvine discharges. If the patient be feeble and delicate, or if the discharges have been profuse, or if the fluids of the system have been drained off by long continuance of diarrhoea in the first stage, the bleeding must be omitted, and the other means adopted as before. If there is great precordial oppression, cups may be applied over the region of the stomach, and the mustard over the abdomen and over the stomach after the removal of the cups. If the pulse becomes gradually more full and distinct, and warmth returns to the surface, we have only to persevere in these means ; after a time giving the pills less frequently, and permitting the patient to take some light nourishment as chicken tea or light broth. If the perspiration becomes profuse — as will be likely — with a warm skin, it should be encouraged by taking some tepid aromatic drinks ; the spearmint tea with a few drops of camphor is as good as any thing. If, notwithstanding these means, the patient continues to sink, or the profuseness of the discharges continue,

we must resort to other means to try and arouse the system to reaction. Much care is, however, necessary to avoid throwing the patient into the fourth stage. Sulphuric ether in small doses should be given, and repeated every ten or fifteen minutes; or a weak solution of carb. of ammonia may be substituted. At the same time an enema of a pint of chicken tea, with a table-spoonful of table salt, should from time to time be thrown into the bowels, and its retention secured for a few minutes by pressure on the fundament; a sheet should be placed under the patient to receive the discharges, and on no account should he be permitted to rise from the bed. If symptoms of reaction come on, the use of the stimulants should be gradually suspended. We believe that the more permanent and powerful stimulants, such as brandy, ardent spirits, &c. are only admissible where the patient has been addicted to their use. Too much precaution cannot be used during the period of convalescence as regards diet, exposure, &c. in all cases in which the disease had approached the stage of collapse.

TREATMENT OF THE THIRD STAGE OR STAGE OF COLLAPSE.

This has been sometimes termed the stage of asphyxia, and no doubt it approaches very near real asphyxia, and the principle of treatment should be the same, viz. to arouse the dormant energies of the system by external warmth, pure air, and gentle and moderate stimulation. In many cases of collapse the discharges have ceased, but whether they have ceased or continue, the treatment recommended in the severer forms of the second stage should be adopted. In addition, the clothes about the head of the patient may be sprinkled with ether, camphor, or ammonia, (we prefer the first.) The pills should be given as before;* not that we expect they can produce much effect unless absorbed, but we cannot know the precise time when their absorption may take place, and if calomel can be introduced into the circulation, it is the most general stimulant of the *materia medica* — the best adapted to equalize the

* The pills which the author used in 1832, were composed of opium one-fourth of a grain, camphor one-half of a grain, calomel from one to two grains; he is, however, disposed to think that in some cases the following pill might be substituted with advantage:—calomel, gr. xii; sulphate of morphine, gr. j; sulphate of quinine, gr. xii; mix, and divide into twenty-four pills, one to be given every half hour, hour, or two hours, according to circumstances.

circulation, and excite the secretions which remove the poison from the circulating fluids. It should always be remembered by the practitioner, that, although patients but seldom recover from this stage of the disease, there is nothing in the disease that renders it absolutely and necessarily fatal; in other words, there is no disorganization of important organs, consequently we do sometimes see patients recover from this apparently hopeless stage; hence, the physician should never abandon his patient whilst life remains. It should be remembered, too, that cholera is a disease rapid in its progress, and that a single hour may determine the question of life or death; hence, the practitioner should be constant and unwearied in his attention — and a cholera patient in the second or third stage of the disease should never be left a moment without the presence of an intelligent nurse. Relapses are liable to occur from errors in diet, from exposure to cold, and from over fatigue; these should be guarded against; irregularities of the bowels are very apt to continue for weeks or months or even years, where the patient has suffered severely from the disease.

TREATMENT IN THE FOURTH STAGE.

As we have stated, this should be considered rather as one of the sequela of the disease, than as one of its regular stages. The cholera itself is not an inflammatory disease, but in the form under consideration, traces of inflammation are always found. Thus where death has occurred in this stage it is found that the bladder is no longer contracted, but has resumed its natural dimensions, and, to a certain extent its normal functions; the viscid condition of the peritoneum has disappeared; the venous congestion wholly or partially given way; the blood has lost a portion of its blackness, though not restored to a healthy condition; the rice water discharges have given way to bilious and bloody flux. Instead of the dark appearance of venous congestion, there is now found the bright red of inflammation in the mucous membrane, which is sometimes softened; and the follicles exhibiting traces of incipient ulceration; sometimes evidences of inflammation are found in other organs, as the brain and lungs. If reaction be then imperfectly established, the treatment must be governed by the variable condition of the patient. If the condition of the patient will admit, blood in moderate quan-

tities may be drawn from the arm, but most frequently we shall be compelled to content ourselves with its abstraction by cupping and leeches, followed by fomentations and counter irritation. If the extremities are cold, warm and stimulating applications should be made to them. Cold may be applied to the head when painful; if the stomach is irritable, ice may be given, and the pills heretofore recommended, with the addition of one-fourth of a grain of ipecac to each pill. Mild nourishment should be given, and the pills continued until some impression is manifest on the general system. If typhoid symptoms supervene, it may be necessary to resort to tonics and stimulants, as sul. quinine, serpentaria, carb. of ammonia, wine whey, oil of turpentine, &c.

Our observations on the different plans of treatment adopted by others, must be brief. ANNESLEY relied on bleeding and large doses of calomel; the latter, he gave in scruple doses. This is substantially the treatment recommended by the great mass of Indian and English practitioners. We subjoin, in the appendix, a paper on the subject, published by Doct. SEARLE, in the London Times, during the present epidemic. Opium was also used, and sometimes to a great extent, by the East India physicians, sometimes alone, sometimes combined with calomel, and sometimes with bleed-

ing. The Russian physicians added but little to the Eastern therapeutics. Bleeding in the first stage, with calomel and opium, seemed their principal reliance; but it was not so universally adopted, or pushed to the same extent, as in India. Bleeding was confined to the early stage of the disease; calomel was given in smaller doses, and often combined with aromatics and stimulants, such as ether, ammonia, musk, camphor, vapor baths, &c. Some practitioners rejected the calomel altogether. Mr. DEVILLE, surgeon of the French ship *La Seine*, who had seen and attended the epidemic cholera in Bengal, obtained instantaneous relief, and a cessation of all the symptoms of cholera, by large doses of ether, administered from the first moments of the invasion.

Rubefacients of all kinds, and in every degree, have been used; the most common are the mustard, and hot spirits of turpentine. The rubefacient ointment used by Prof. LEE, in N. Y. consisted of mercurial oint. four parts; camphor, two parts; cayenne pepper, one part, rubbed over the whole body, with a view of producing salivation. In this country, treatment of every description has been tried; some gave hot drinks, some cold. In Canada, the cajeput oil, at one time, gained considerable celebrity. The emetic treatment has never gained much favor with the profession,

though warmly advocated by our late colleague, Prof. SPENCER. If emetics are given, those should be selected that produce the least prostration of the system, and which operate promptly. Prof. Woods says, the nearest approach in symptoms, that he has seen, to cholera, occurring in another disease, was a case of poison, by tart. emetic, which was, indeed, mistaken by a man of considerable experience, for a case of cholera. The greatest mortality which we have seen of the disease, was the regiment of Colonel PEARIE, consisting of one thousand men, seven hundred of whom died in six days. They were treated by administering tart. emetic.—*French Com. Report*, p. 24.

In the city of New York, what was termed the camphor treatment, produced as much sensation as any other; and, as is well known, gave to homœopathy its first permanent footing in that city, as its advocates claimed the credit of introducing it; though camphor was a common prescription by the regular practitioners in cases of prostration, and had been used by them in cholera, both in India and Russia. The treatment consists in administering three drops of the spirits of camphor every fifteen minutes in a table spoonful of water; the limbs and body, at the same time, to be rubbed with camphorated spirits, and the latter, also, to be sprinkled about the bed clothes, so as to be

inhaled or breathed by the patient. This is for the stage of collapse. In the second stage, one drop is to be given, every five or six minutes, in a tea spoonful of water.

A disease appeared in the Massachusetts' State Prison, in August and September, 1832, which seems to have borne a strong resemblance to cholera, and which was successfully treated by Doct. WALKER, (the physician to the prison) by large doses of opium and bleeding. "The dose of opium was about three grs. once in thirty minutes."

After trying a variety of modes of treatment, Doct. WHITING (quarantine officer at New York) finally settled upon the following:—"Five grs. of calomel, with one quarter of a gr. of sul. morphine, is first given to an adult; half an hour, or one hour after, a scruple dose of calomel is given, and is usually retained; afterwards a pill of calomel, five grs.; sul. morphine, one fourth of a gr. every hour, two or three hours, as the effect may indicate. This is observed in the subsidence of the pain and spasms, the diminished quantity and frequency of the evacuations, the return of warmth, and the restoration of the pulse. This treatment is continued until some indications of bilious action appear. The most valuable external means is the steam of hot vapor of alcohol." No one plan in

particular, seems to have been adopted by the physicians at New Orleans. Calorics and opiates, in moderate doses, with diffusible stimulants, external warmth, frictions and rubefacients, seem to have been the principal reliance. Some practitioners, however, gave sul. quinine, in conjunction with other means. Prof. WOOD, in his valuable work on practice, recommends calomel and opium in small doses, frequently repeated, with the addition of acetate of lead and kino. When the discharges are profuse, "from one-twelfth to one-half of a grain of opium, from one-sixth to one grain of calomel, from one-third of a grain to two grains of acetate of lead, and from two to five grains of kino, or extract of rhatany, are suitable quantities, and they are best given in the pilular form." These pills are given every half hour; application of external warmth, sinapisms, &c. are to be used at the same time, and in in some cases, v. s.; in others, diffusible stimuli. Doct. TROWBRIDGE, a very intelligent practitioner of the city of Buffalo, who had extensive experience in the disease, in 1832, informs us that he relied on pills of calomel and opium; "calomel, from two to five grains, opium from one-fourth to one-half of a grain, repeated every hour, two or three hours, according to circumstances, and that he had reason to be satisfied with its success."

We copy the following from the Boston Medical and Surgical Journal of January 20th, 1849. It is an extract from the report of John Baker to the Governor of Bombay :—"In my quality of late agent and present pensioner of the Honorable East India Company in Alleppo, I have the honor to address your Excellency for the purpose of giving you the earliest information of an infallible cure in the most desperate cases of the cholera morbus, which has just been proved to have been successful in seventy cases in this district without one having failed. The treatment is as follows :—As soon as possible after the retching and diarrhoea commences, put the patient's feet and legs up to the knees in water as hot as the hand can bear it ; add thereto six or seven handfuls of coarse salt ; let the legs be rubbed for the space of half an hour, by two strong men, each using both his hands, when the large veins of the instep of each foot must be opened and permitted to flow in the water for from twelve to twenty minutes, according to the sex, age, and strength. During this time, fresh water must be added now and then, as the water in the pail cools. Natural animal heat all over the body and consciousness will soon after be restored. The patient will then generally speak and ask for food, and, if a soldier, he will return to the parade in a few days in perfect health.

“In some cases, the application of bleeding will be repeated, and in a very rare case the patient must be bled a third time.

“I have said the operation of bathing the legs should commence as soon as possible, but as long as there is breath in the nostrils it must be adopted, for it has succeeded perfectly after six, eight, and even ten hours had elapsed since the attack; and although those cases were of the worst kind, the patients always recovered their perfect health, and went about their usual occupations in two or at most four days. In fact, the cure was perfected in such cases quite as soon as in those where more timely assistance had been procured.

“Henceforth a visitation of the cholera will be less a subject of dread than an epidemic of the influenza.”

When the system has been drained of a greater part of its fluids, we cannot hope to restore it to its normal condition so promptly by any treatment; still, in less severe cases, the plan so strongly recommended is certainly not an unreasonable one, and deserves a fair trial. An incident occurred to the author which goes to show that cases apparently hopeless may sometimes recover if the blood can be made to flow. When on a visit to New York to witness the cholera in 1832, we

were invited by a medical friend, to visit with him a house near the Five Points ; one patient had died in the house some hours before ; a second was just expiring as we entered, and a third, a female, had but just sunk into the third stage. As the attending physician gave the case up as hopeless, it was proposed to try the effects of bleeding. With the consent of the attendant, the writer tied up the arm and made a free opening in the vein, and by means of rubbing and friction obtained perhaps an ounce of thick dark colored blood. As the circulation seemed almost entirely suspended, we abandoned the case as hopeless. Sometime subsequently, we learned with astonishment that she aborted, flowed freely, and eventually recovered.

MEANS OF PREVENTION.

We have but few observations to make on this subject. By referring to what was said on the subject of the sporadic or local causes of cholera, it will be seen what causes tend to produce it; and the best means of prevention is to avoid the exciting causes. It cannot be too strongly impressed upon community, that medicines form no protection against the disease; they may cure, but not prevent. Some slightly diffusible stimuli, as a few drops of camphor, in a glass of water, or a cup of spearmint tea, or a little ether or carb. of ammonia, may be taken, to relieve a sense of nausea or uneasiness at the stomach, but no active medicines should be taken without direction of the medical attendant, and, particularly, no cathartic medicine should be taken, without such advice; many cases of cholera have been produced by an incautious use of cathartics. The best preventives are plenty of pure and wholesome air, a sufficiency of nutritious food, clothing to protect the person against the sudden changes and vicissitudes of the climate,

moderate exercise in the open air, regular sleep at night, and, above all, a quiet mind. As a general rule, upper rooms, or chambers, should be used for sleeping apartments, in preference to the lower rooms, and the larger the apartment the better. No curtains should be admitted about the bed, and, if it can be avoided, several persons should not be crowded into the same room. Wet feet, and night and damp air, should be as much as possible avoided, as well as over fatigue, and excesses of every description. Those who wish for more specific directions, as to diet, we refer to the directions given by the Royal College of Physicians of London, and the report of the committee on that subject to the Common Council of Boston, both of which will be found in the appendix.

A P P E N D I X .

*Treatment of Epidemic Cholera, by C. SEARLE,
M. D. From London Times, of Nov. 3d. 1848.*

Principles, well defined principles, may now be determined for the treatment of the cholera. In the work denominated Cholera, Dysentery and Fever, their Causes and Treatment, these principles are clearly set forth. In this work, I make it appear, that the disease, is, in all cases, connected with a poisonously contaminated state of the blood, or condition of the system, that will not maintain a healthy condition of the heart and organs generally, with an imparted, feeble circulation, which gives rise to a stagnant congestion, accumulation of the blood in the vessels of the stomach, bowels and liver, from which the evacuations are simple exudations, and that those symptoms which arrest the secretions, generally, but of the liver and kidneys in particular, constitute the essence or essential attributes of the disease; and if so, I ask, what are the indications to be fulfilled, or the requirements of a rational treatment? My

reply is, to restore excitement to the heart and secretive organs, by divesting the blood of its poisonously, contaminated, or depressing agency. How can the blood be thus divested, and excitement restored? In reply, we have but one method, and that is through the instrumentality of the liver, the kidneys and the skin — the three great purifying organs of the body. With a view, then, of fulfilling the obvious indication of restoring the secretions of bile and urine which are suppressed, and which alone must prove highly injurious, as well as with the view of purifying the blood of its pollution, calomel is our chief remedy. Universal experience testifies that it excites the liver, and indeed, all the secretions, and if so, its stimulating operation must be general on the system, and it necessarily, therefore, excites the heart and all the functions, and thus operating, it fulfills the purpose of a rational treatment. Yes, my experience justifies me in declaring, and its importance I feel cannot be too strongly insisted upon, that calomel is the remedy for the disease, and the only remedy upon which any confidence can be placed. If any single remedy merits the name of a specific, in the cure of any disease, calomel is the remedy in cholera, judiciously employed — that is, early employed, and in doses commensurate with the urgency of the symptoms; a fact which is well attested by the experience of Doct. AYRES, of Hull, as recorded in the *Lancet* of Saturday last, in which, of two hundred and nineteen cases, one hundred and seventy-six recovered by the use of calomel.

It will be asked, how is it, then, that this remedy, which has been employed from the earliest occurrence of the epidemic in India, has not acquired that confidence which I would repose in it? For this good and sufficient reason — that when given, it has been the constant practice to annul or supersede its influence, by the conjoint use of large doses of opium. The operation of opium is to torpify and arrest secretion, to allay pain, by diminishing sensibility; in plain terms, to paralyze the natural endowments and sensibility of the system, and in so doing, to arrest evacuations. But surely, these are not the indications to be fulfilled in a disease, characterized by loss of power — a disease, which both post-mortem examinations and the symptoms during life, attest to be purely congestive? But, it nevertheless, is that of almost universal adoption, and well may the practice, therefore, prove unsuccessful, and the disease so destructive. There is, unfortunately, another all sufficient reason, why calomel, though always indicated, will not always cure the disease — applicable, however, to all remedies, but in an especial manner to calomel — and a reason why the disease has proved so destructive, that is, the engorged state of the blood vessels of the stomach and bowels, intercepting the absorption or imbibition of our remedies, and calomel, an almost insoluble substance in particular.

MAGENDIE having proved that absorption went on in an inverse proportion with the distention of the blood vessels, it necessarily follows that as the vessels of the stomach and bowels are distended

to the extent of their exuding their more aqueous contents into the bowels, absorption must necessarily be in abeyance, and in an advanced stage of the disease at a dead stand still. Hence the importance of treatment while the stomach is in a condition to absorb this remedy, and a conspicuous reason why, what may appear extraordinarily large doses are often required to fulfill the ordinary purposes of small ones. It is not the quantity, but the effect produced, which should govern us in the administration of a remedy which principles indicate; let it, therefore, be given perseveringly and ungrudgingly, in doses proportionate to the emergency of the case, and success in cases apparently the most hopeless will often follow. Instead, therefore, of administering chalk-mixture with opiates and fiddle-faddle in the treatment of diarrhoea, whenever it presents itself to you, put the patient into a warm bed, and to remove any offending matter, and to secure the emptiness of the stomach in favor of the absorption of the calomel, first give an emetic, and as soon as that has operated, follow it up with six grains of calomel in powder, putting it on the tongue with a few grains of salt, which will cause the saliva to flow, and then direct the patient to swallow. After this has been taken, the dose to be repeated must necessarily have reference to the color of the evacuations and condition of the patient, from one grain to six, or even twenty, every hour. In a case presenting the ordinary symptoms of diarrhoea, with the pulse pretty good, a grain may be sufficient every hour or two, and with a view of

tranquilizing the system, and favoring perspiration, two grains of Dover's powder may be added, and made into a soft pill, and this continued until free perspiration is induced, and the evacuation assumes a healthy bilious appearance; a little warm wine whey, or gruel, being allowed the patient occasionally in aid of it. In a severer form, or more advanced stage of the disease, where the evacuations are colorless, or as nearly so as rice water, when vomiting or spasm has set in, there must be no compromise with the disease. Bleeding, if the patient be of full habit, or there be pain in the head, chest, or stomach, will be a necessary accessory agent, in addition to the emetic, followed up by the calomel in doses of from four to twenty grains every hour; proportionate, that is to say, to the diminished absorbing powers of the stomach, and severity of the disease. As vomiting would occasion the rejection of the calomel, the patient must be encouraged, whenever prompted by the desire, to relieve his bowels instantly in the bed, there being the necessary folded sheet previously placed beneath the patient to receive the evacuations, as by restraining the bowels but for a moment, the action of the stomach is excited to puking; and I have accordingly found that if vomiting continues, or spasms are present, the best remedy is to keep the bowels excited by the administration of a pint of warm gruel, with the addition of a large tea spoonful of salt and a table spoonful of oil by clyster every hour, adding thereto, if there be much depression, two table spoonfuls of brandy. A large mustard plaster should

be applied over the stomach. When the patient desires cold water, which he often does in preference to any other beverage, let it be given him by all means, in quantity of a wine glassful every hour, if he craves it. As the pulse gains strength and power, which it will do as the calomel is absorbed, so may the doses be diminished or the intervals between them prolonged, and when bilious evacuations and urine are induced, a dose of castor oil may be administered, and all fears of salivation prevented.

Report of a Committee of the Royal College of Physicians, London.

1. Cholera appears to have been very rarely communicated by personal intercourse; and all attempts to stay its progress by cordons or quarantines have failed. From these considerations the Committee, without expressing any positive opinion with respect to its contagious or non-contagious nature, agree in drawing this practical conclusion; that in a district where cholera prevails no appreciable increase of danger is incurred by ministering to persons afflicted with it, and no safety afforded to community by isolation of the sick.

2. The disease has been almost invariably most destructive in the dampest and filthiest parts of the

towns it has visited. The Committee would therefore urge on the public authorities the propriety of taking immediate steps to improve the state of sewers and drains; to cover those that are open, and to remove all collections of decaying vegetable and animal matters from the vicinity of dwellings. They would also impress on individuals, especially of the poorer classes, the great importance of well airing their rooms, and of cleanliness both in their dwellings and persons.

3. A state of exhaustion or debility, however produced, increases the liability to cholera. The Committee, therefore, recommend all persons, during its prevalence, to live in the manner they have hitherto found most conducive to their health, avoiding intemperance of all kinds, and especially the intemperate use of ardent spirits and other intoxicating liquors. A sufficiency of nourishing food, warm clothing and speedy change of damp garments, regular and sufficient sleep, an avoidance of excessive fatigue, long fasting, and of exposure to wet and cold, more particularly at night, are important means of promoting or maintaining good health, and thereby afford protection against cholera. The Committee do not recommend that the public should abstain from the moderate use of well cooked green vegetables and ripe and preserved fruits. A certain proportion of these articles of diet is, with most persons, necessary for the maintenance of health, and there is reason to fear that if they be generally abstained from, now that the potatoe crop has, in a great measure, failed, many persons, especially among the poor in large towns, will fall into

that ill condition which, in its highest degree, is known as scurvy, and that they will in consequence be the readier victims of cholera. They likewise think it not advisable to prohibit the use of pork or bacon, or of salt dried or smoked meat, or fish which have not been proved to exert any direct influence in causing this disease. Nothing promotes the spread of epidemic diseases so much as the want of nourishment, and the poor will necessarily suffer from this want if they are led to abstain from those articles of food on which, from their comparative cheapness, they mainly depend for subsistence. On the whole the Committee advise persons living in districts where cholera prevails, to adhere to that plan of diet which they have generally found to agree with them; avoiding merely such articles of food as experience may have taught them to be likely to disorder the stomach and bowels.

4. The Committee are unable to recommend any uniform plan of treatment to be adopted by the public in all cases of looseness of the bowels, supposed to be premonitory of cholera. It is doubtless very important that such ailments should be promptly attended to, but since they may arise from a variety of other causes of which a medical man could alone judge, the Committee deem it safer that persons afflicted with them should apply at once for medical assistance, than that they should indiscriminately use, of their own accord, or on the suggestion of unprofessional persons, powerful medicines in large and frequently repeated doses. Should the looseness of the bowels be attended with great exhaustion and chilliness, the person should of course

be placed in a warm bed, and the usual means of restoring warmth be assiduously employed until professional advice can be obtained.

5. In order that the poor should have the means of obtaining such assistance promptly, the Committee recommend that the proper authorities should at once establish dispensaries in those parts of the town, which are remote from the existing medical institutions, and that they should also take steps to provide district cholera hospitals which it will require some time to organize, and which they believe will be found absolutely necessary should the epidemic prevail in this city with a severity at all approaching that which it manifested on its first appearance in England. The Committee wish it to be clearly understood that they do not recommend the establishment of such cholera hospitals on the ground of effecting the separation of the sick from the healthy, and thus preventing the spread of the disease, but solely in order that, should the epidemic prove severe, proper attendance and proper treatment may be insured for sufferers from cholera among the poorest and most destitute classes. The existing hospitals, even if the authorities should consent to the admission of persons ill of cholera, could not furnish the requisite accommodations, unless they were shut against persons laboring under other severe diseases, a measure which, at the approach of winter, especially, would add much to the distress of the poor.

6. In conclusion, the Committee would urge on the rich, who have comparatively little to fear for themselves, the great duty of generously and

actively ministering to the relief of the poor whilst the epidemic prevails, bearing in mind that fuel, warm clothing, and sufficient nourishment, are powerful safeguards against the disease. They deem it advisable that parish authorities should at once improve the diet and increase the comfort of the poor under their charge, and that the wealthy should form societies for the supply of food, clothing and fuel to those who, though not paupers, still need charitable assistance in the present emergency.

Such measures, which it is the duty of those possessed of power and wealth to adopt, would, the Committee believes, if liberally carried out, deprive the cholera of half its victims.

JOHN AYRTON PARIS, *President*.

FREEMAN HAWKINS, *Registrar*.

COLLEGE OF PHYSICIANS, OCT. 28, 1848.

Report on Sanatary Measures in regard to Epidemic Cholera; by the Board of Consulting Physicians of the City of Boston.

During the former prevalence of cholera in this country in 1832, and at the time of its expected arrival in Boston, the opinion of the Consulting Physicians was required by the City Council, in regard to the prevention and management of the disease. A Report on the subject was at that time presented by this Board, and other reports,

emanating from different medical bodies in the city, were also furnished to the city authorities. In these several reports, certain cautionary measures, relating both to private life and to public sanitary arrangements, were presented to the City Government, and urged upon the attention of the citizens generally. These measures for the most part consisted, as far as individuals were concerned, in the observance of temperance, cleanliness, regularity of life, and avoidance of excesses, and of other known causes of disease. And in regard to public precautions, measures were recommended for the purification and ventilation of dwellings, the removal of nuisances, the rigid inspection and expurgation of the dwellings of the poor, as well as of cellars, vaults, drains, and other receptacles of impure and noxious substances. These measures were adopted and carried into effect by the city authorities, and at the same time provisional hospitals were established for the reception of citizen patients of the poorer class.

The events which followed, showed, as far as we can judge, the wisdom of these precautions. While in each of the larger cities of the Union, some thousands of inhabitants were swept off by the ravages of the cholera, it was found that all the deaths which occurred in Boston, from the disease during its epidemic presence, hardly amounted to eighty in number.

The undersigned are not aware, that during the years which have elapsed since the former appearance of the epidemic among us, any more effectual means of obstructing its progress have been dis-

covered, than those which have now been recounted. The vehicle by which cholera passes from one city to another is unknown. And the means of excluding it from any given place, are not better understood than those of arresting influenza, or any other extensive epidemic. All that can, therefore, be expected in the case, is that the population of our city may be placed in such a position as shall, under the blessings of Providence, enable them to meet the invasion of the disease, should it come among them, with the smallest sacrifice of life and of health.

For the promotion of this desirable object, the undersigned recommend, that all citizens in times of expected cholera, should endeavor, by a strict course of hygienic rules, to keep themselves in the best state of mental and bodily health of which their respective constitutions admit. Persons who are well, should endeavor to keep so, by the use of daily and regular exercise in the open air, not carried to the point of extreme fatigue — by great attention to cleanliness, both of the skin and of clothing — by daily ablutions with water, which should be cold in all persons who possess sufficient vigor to insure a ready re-action — by regular hours of sleep, of meals, and of occupation — by cheerfulness, courage, and useful employment of the mind — by moderation in the quantity, and care as to the quality of the food — by strict temperance in regard to stimulating and intoxicating liquors — and by the avoidance of all excesses, irregularities, and debilitating influences.

Among the sources of danger principally to be

guarded against, intemperance is without doubt the most prominent. The abuse of stimulating liquids predisposes the body to the attacks of this disease, and renders recovery nearly impossible. A drunkard rarely survives the attack of cholera. And even the lesser degrees of indulgence, may be regarded as more unfavorable to escape from the disease, than habits of general abstinence. Nevertheless, it is not recommended that persons accustomed to the moderate use of stimulants should make any sudden or violent change in their mode of living, during the epidemic prevalence of the disease.

Errors in diet — consisting in the use of unripe fruits, of coarse and indigestible vegetables, of stimulating and high-seasoned animal dishes, and even of common food in excessive quantities, such as overtax the digestive powers — are things equally to be avoided, as tending to excite the disease.

Long exposure to a damp atmosphere, confinement in crowded rooms or heated carriages, with subsequent abrupt exposure to cold or night air — residence in low and foggy situations, especially in the neighborhood of impure, stagnant water — proximity to the mouths of drains, and of mud containing decomposing organic matter — exposure to collections of offal and other nuisances which abound in cities — and, lastly, residence in a district already much infected with cholera — are circumstances which increase liability to the disease, and should therefore be avoided by those who have the power to govern their own movements.

In regard to the general sanitary arrangements, which are within the control of the city authorities, the undersigned respectfully recommend, that a course of inspection, purification and ventilation, in most respects similar to that pursued in 1832, be carried into effect as promptly as may be practicable, by Ward Committees appointed for the purpose, or otherwise, as the wisdom of the City Council may direct. They advise, that the condition of cellars, wells, vaults, and of drains, and their discharging outlets, should be generally examined, especially in the low and crowded parts of the city, and that all sources of nuisance, which may exist, should be speedily corrected or removed.

It is also recommended, that two or more suitable buildings, in different parts of the city, be forthwith engaged, and provided with proper furniture, nurses and other attendants, together with fuel, litters for the conveyance of the sick, and such other appurtenances as are necessary in these establishments, and may require time for their preparation. And should the disease begin to appear on this side of the Atlantic, these buildings, or a part of them, should be immediately occupied, and provided with medical officers, and other necessary agents, together with such comforts, remedies and appliances, as the condition of the sick may require. To these hospitals, patients attacked with the disease, should be early removed, provided the city is chargeable with their support, or provided they cannot be comfortably lodged and attended in their own dwellings.

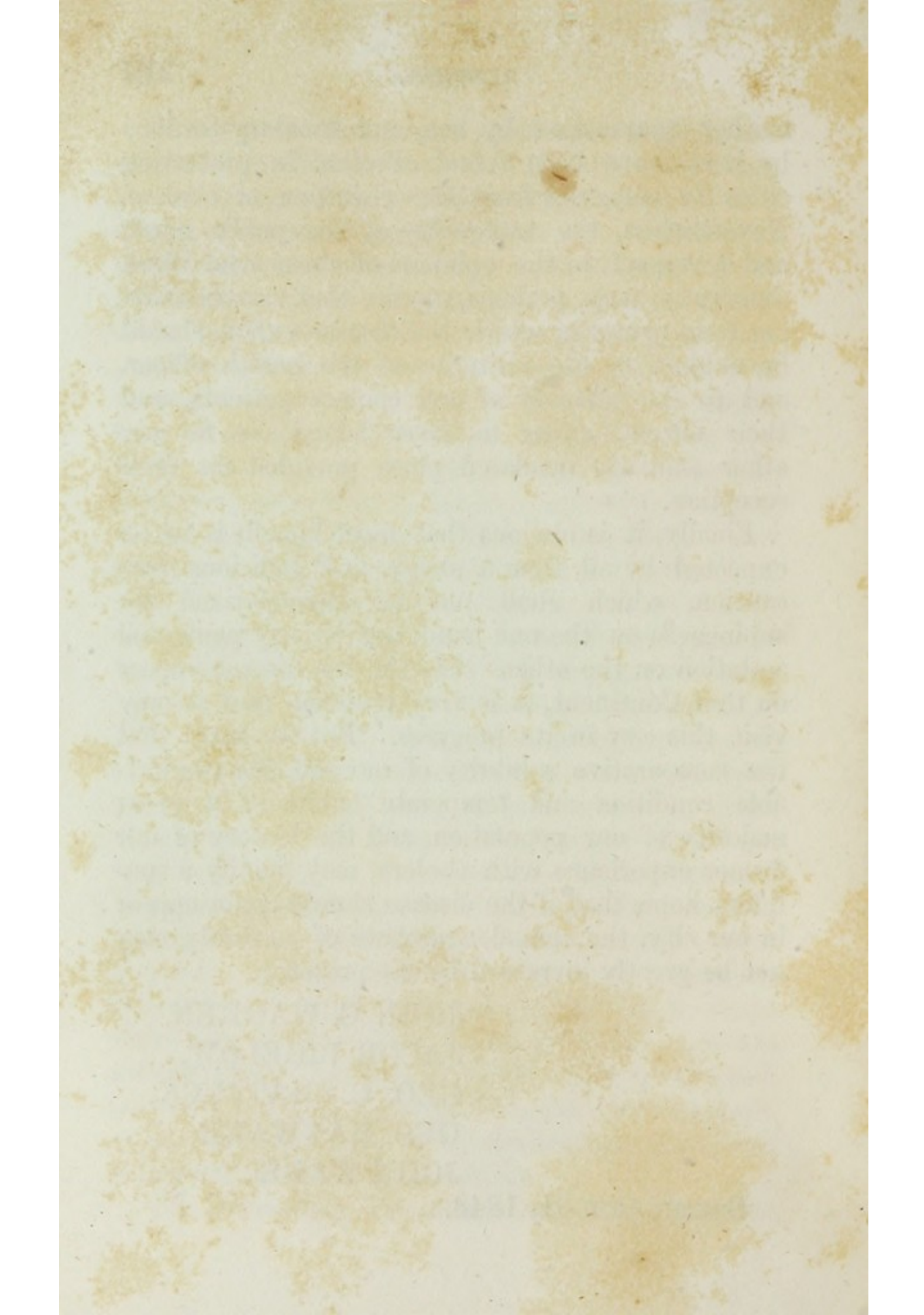
The Consulting Physicians are of opinion, that

neither quarantines by sea, nor sanitary cordons by land, have been found effectual in protecting cities or countries from the visitation of cholera. Nevertheless, the tranquility of the public mind, and a respect to the opinions of those who think differently, may, perhaps, require that vessels arriving from places in which the disease exists, should be subject to the visitation of the health officer, and to the removal of any cholera patients, and their effects, either to Deer Island, or to any other similarly insulated place provided for their reception.

Finally, it is obvious that most benefit is to be expected by all, from a steady and judicious precaution, which shall not be characterized by supineness on the one hand, nor by any panic and agitation on the other. Should the disease appear on this Continent, it is very probable that it may visit this city in its progress. But we trust that the comparative salubrity of our soil, the comfortable condition and temperate habits of a great majority of our population, and the history of our former experience with cholera, may justify a confident hope, that, if the disease should again appear in our city, the annual aggregate of mortality may not be greatly increased by its presence.

JOHN C. WARREN,
JACOB BIGELOW,
GEO. C. SHATTUCK,
GEO. HAYWARD,
JOHN WARE.

BOSTON, OCT. 31, 1848.







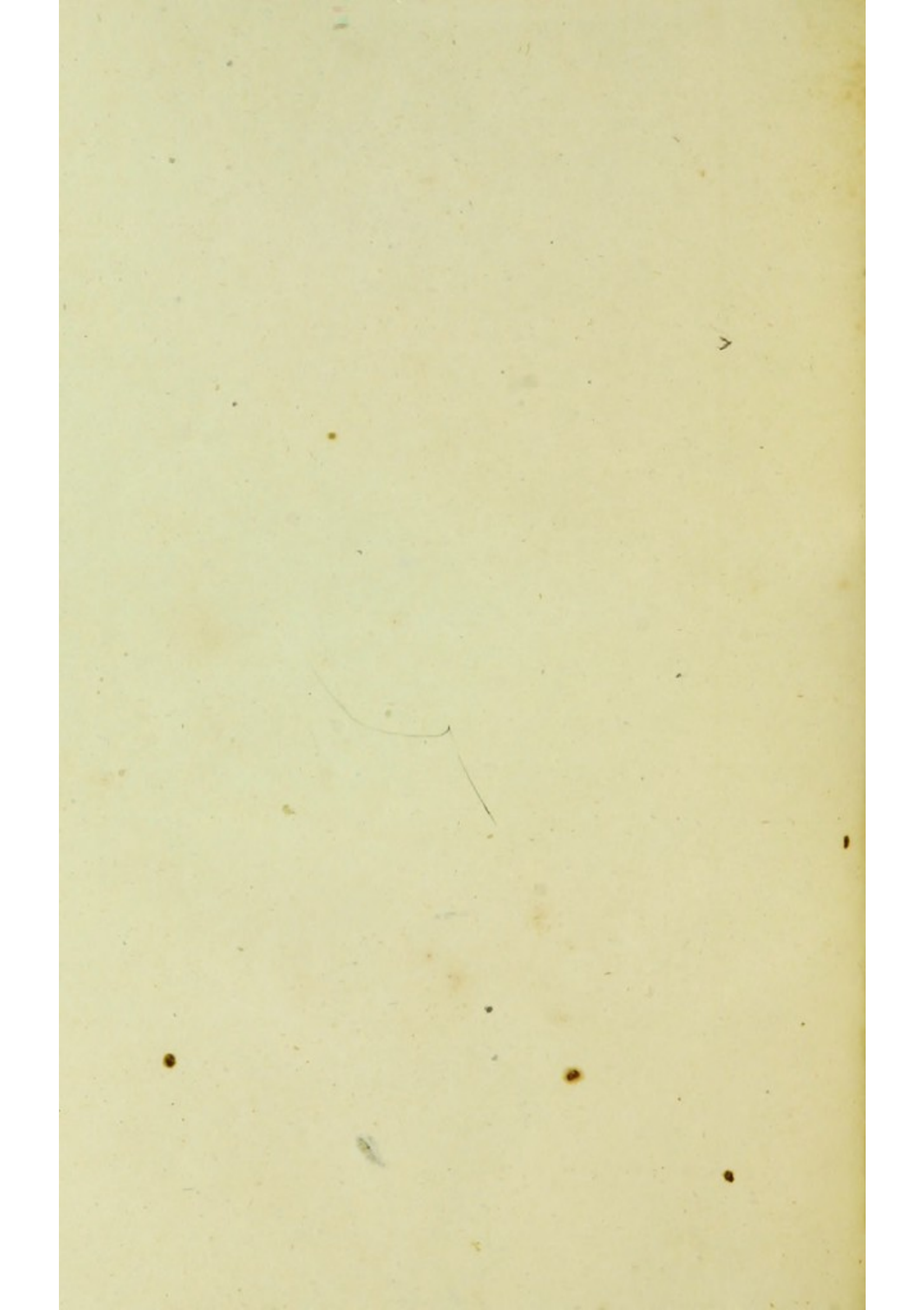












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