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ASIATIC CHOLERA,

DEDUCED FROM ITS

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PATHOLOGICAL CORRELATIONS.

BY

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THE ASIATIC CHOLERA.

It is now more than three months since the pestilential cholera has been reported among us. Has it swept over the land as an atmospheric influenza? Has it followed any definite track of the wind, or any regular direction of the compass? Has it been attended with any new or unusual atmospheric phenomena? Has it followed any geological formation, or mineralogical peculiarities? No. From the tertiaries of the London bason, up to the granitic series of Edinburgh, it has appeared with strict impartiality. It lurked about in the fine weather of October, in the wet month of November, and at Christmas it was reported at Belfast, in Ireland, having taken ship from Glasgow. On board one of the emigrant ships from Bremen, it has crossed the Atlantic to New York. All the western ports of our island, however, and all the Channel harbours, have been free from invasion. *They have no extensive trade with Riga, Hamburgh, or any of the northern pest ports.*

More than three months ago we were told on authority that it might at any time be expected to jump out of any uncleaned cesspool, or undrained ditch; all our villagers' pigs were forthwith ordered to

be killed, for pigs and pigsties were voted "nuisances." Like the fabled "wandering Jew," this swarthy Asiatic was said to be out on his travels through the land, and that he took lodgings in these appropriate localities. Ditches and cesspools are quite as common at Liverpool as at Leith; quite as numerous at Bristol as at Hull; yet, neither Liverpool nor Bristol have yet (Jan. 7th) reported any cases, notwithstanding the stringency with which reports are hunted after, and although three months have elapsed since Hull received her first importation. The shipping of Liverpool and Bristol rivals that of London and Leith, but the shipping all arrive with *clean bills of health from ports not yet contaminated with cholera contagion.*

The *secondary spread of the pestilence* which is now begun will be marked by the appearance of cases at these western ports, as well as some of our inland towns, which are unfortunate enough to receive many infected tramps.

Verbal quibbles about the meaning of contagion are worse than useless. Our great lexicographer defines contagion by the term infection. The terms are synonymous, for he equally defines infection by the word contagion. Contagious matter is either liquid, as in the small-pox vesicle, or solid, as in the dried pustule, or it may become diffusible in the aqueous vapour of the atmosphere. It then assumes the miasmatic state. The emanations from the bodies of the sick are of this atmospheric character, and consequently become the sport of the winds, or remain hovering like a mist, when the air is stagnant or loaded with moisture. When the temperature favours decomposi-

tion or putrefaction, nearly all contagions increase in virulence. Syphilitic contagion appears never to spread atmospherically, though it must decompose, of course, as do all animal poisons. The poison of scarlatina, on the contrary, is highly diffusible ; *such appears to be the case with pestilential cholera.*

The contagion of this Asiatic scourge has now for many years been a fruitful topic of controversy in medical polemics. Among the early practitioners of India who witnessed the first outbreak and successive ravages of this new plague in Hindostan, the analogies of the disease, to the more violent forms of the simple cholera, so accurately described by Sydenham, and ascribed by him to the atmospheric and epidemic conditions of the autumnal season, led them to lose sight of *the specific character of the new disease*, which was at length discovered to be so completely *sui generis*, as to deserve a more diagnostic name than that which they have given to it.

Looking upon it only as a climatorial development of the same disease, in a more aggravated form, they were content to call the one *English*, and the other *Indian*, cholera.

No doubt India had often suffered from epidemic visitations of ordinary cholera, as England and other climates had done. The abundance of the fruit season, and the excessive temperature of the Indian summer, produced the common cholera of milder climates in an endemic form, and they were accustomed, before 1817, to observe occasionally the vomiting, the purging, the cramps, the collapse, and the death of many who were seized.

But the occurrence of the new disease, *during all the seasons of the year*, taking a definite course, with a far more fearful mortality, defying the ordinary therapeutic means with which they were accustomed so successfully to combat its prototype, presenting to accurate investigation some new symptoms of a marked character, at last opened their eyes to that ever recurring enemy which, since 1817, they have had to meet, *in some quarter* or other, in *every season of the year*. It was as natural for them at first sight to imagine such a peculiar disease free from the principle of contagion, as it would have been, had it been an indigestion or liver complaint. There was no visible eruption of any morbific product on the surface of the body, as in small-pox, or measles, or scarlatina. Many of those who were in close communication with the sick, either entirely escaped, or suffered *but slightly* the symptom *of diarrhœa*, which they never presumed to call *an attack of cholera*, so that at first sight the conclusion was almost universal that cholera was uncontagious. Kennedy, who so graphically describes the new disease, says, even in 1818, the year after its first appearance in Jessore, "month after month, during the preceding year, fresh accounts reached us of its progress westwards, and the general alarm and horror were excited to the utmost when every hope that the disease might *terminate with each change of season was at last extinct*." The season merely influenced the virulence of the disease, as it influences other diffusible contagions. The morbid material, whatever it was, survived the winter only to break forth with renovated vigour in the warmer weather;

and a population of a hundred millions, notorious for their migrations and their festivals, ever presented a sufficient number of victims to be annually sacrificed to this new enemy of the human race. They were not a drunken and dirty people, for their religion was diametrically opposed to such habits, but they are principally vegetable feeders, rice being their chief article of diet, and they live a large portion of their time in the open air.

In examining the question of the contagion of cholera, we must ever bear in mind, that even could it be put to the test of inoculation, which has not hitherto been successfully accomplished, and thus obtain for it the direct demonstration of its infectious property, as we have found in small-pox, that *many cases must arise after it has once appeared in any country which cannot be traced up to any known communication with the infected.* Dr. Gregory, who has paid so much attention to the subject of small-pox, declares that nineteen out of every twenty persons received at the Small-pox Hospital, are unable to discover the source of their infection. They imagine they breed the disease ; they attribute it to a chill, or to excessive fatigue, or to getting wet, or to a hundred other very innocent causes, rather than its true one—infection—of which they are unconscious. The difficulty sometimes found in tracing an infectious disease up to its true sources, does no more invalidate the doctrine of contagion than would a hundred undetected larcenies lead us to suppose that they could be committed without the thief.

The analogy of the new disease lately introduced

among the sheep of this country, may suggest to us a parity of reasoning respecting the cholera. The very Merino sheep which first brought the "variola ovina" into England, have been clearly detected. The disease, however, has now appeared in so many of our counties, that the links in the chain of infection become extremely difficult to trace, and it often *now* arises without any previous communication with infected flocks,—the atmosphere appearing to be the vehicle of the contagion. *Thus it is with cholera.*

When a small island becomes the seat of a new disease, as when Iceland, in 1707, was first seized with the small-pox; or Malta, after an absence of more than a hundred years, with the plague in 1813, or the cholera in 1837, the important question—"whence comest thou?" is put with some probability of a satisfactory answer to the new visitant. The identical ship by which it is imported becomes easy to recognize, and the earlier steps of the invader are tracked with considerable accuracy, until the multiplied secondary or tertiary sources of contagion baffle further inquiry, and the original thread becomes in "wandering mazes lost."

In continental countries it becomes more difficult to bring these inquiries within so small a compass; and in our own island, whose numerous ports are filled with the shipping of all nations, such floating arks of pestilence may, like the Cronstadt vessel lately mentioned by Dr. Simpson, infect the pilots of Newhaven, sail out of port, and baffle for a considerable time the most diligent inquiry. So numerous are the flags that daily and hourly enter our harbours and roadsteads, that supposing cholera to arise from con-

tagious or infectious emanations, we must within the last three months of unrestricted intercourse with Hamburgh, Riga, and Cronstadt, where the cholera had been raging previously, have received many of these foci of contagion; and yet, notwithstanding the "suppressio veri," and the "suggestio falsi," which have been used pretty freely, there is enough evidence for us to ground a pretty *strong case against these northern vessels*.

Sailors, it may be, very opportunely eat voraciously of plums and drink sour beer, or some convenient cesspool is at hand in every locality, to bear the blame. The bilge water, too, is another prolific source on shipboard, or some want of cleanliness is perhaps pointed out by some inspector who sees great negligence in the sanitary arrangements on board nearly all the coasters. As for contagion, Dr. Parkes puts on his spectacles and says he never saw it cross the lines at Moulmein or Tenasserim. Mr. Grainger says the medical men of Hamburgh pooh, pooh! at such a silly idea; and that they have very diligently dissected the dead bodies for it, and cannot find it. Alas! that men should ever be employing their external senses and their powers of observation, and should so entirely omit to exercise the reasoning faculty, by which alone invisible agency is proved to exist. Gravitation is not less a property of matter, though it is essentially invisible, and is ever undistinguishable save to the eye of reason. In the hands of Newton, it solved the problems of planetary motion, and the irregularities of celestial bodies were all found, not indeed exceptions, but legitimate consequences of this general law, when deeply investigated.

There cannot be the slightest doubt about the propriety of those sanitary improvements, which have been so strongly recommended, but to assume that a disease is non-contagious, because cleanliness and ventilation mitigate its severity, and sometimes disarm its concentrated potency, is illogical. A disease cannot be *contingently contagious*, though it may spread or not according to certain contingencies. The theory of a disease being sometimes contagious and sometimes not, is self-contradictory and absurd. Similar kinds of matter always possess similar properties, and the specific virus of the choleric pestilence forms no exception to the general rule.

It is sometimes said that cholera is not contagious, because it is not attended with an eruption like the exanthemata. To this we would reply that all *a priori* reasoning of this kind is scarcely allowable when we have the positive facts to determine the question. Let us however, for a moment, examine the point as if no such positive evidence were within our reach;—as if no basis for inductive reasoning existed;—and as if we were thrown altogether (which is far from being the fact,) upon the mere analogies of other diseases to draw our inferences. "In cholera," say our Sanitary Commissioners, "no vitiated secretions occur." "All epidemic diseases commonly regarded as contagious are diseases of excitement, during which inordinate actions the fluids of the body become vitiated, and the excretions often so highly offensive, that they appear to possess a septic or putrefactive tendency." "In cholera," they state further, "there is no power to generate poison, and no activity in the excretory

apparatus to throw it off." Now, it may be true, that in some rare cases of sudden and early collapse, the secretions may appear suspended,—*collapse, however, is not cholera*, it is only one of its occasional symptoms, and it occurs now and then at the onset of other diseases, as in scarlatina and typhus, and may terminate in death or be followed by the stage of reaction and excitement. Some writers, as Dr. Billing, define cholera as a fever, of which collapse is an early and frequent symptom. Others, as Dr. Bell, call it an ague; and Dr. Dickson, with perhaps as much correctness, calls all diseases agues, because they are attended with intermissions and exacerbations. We prefer the view of Dr. Billing; and if cholera be a specific fever, what becomes of the loose statements of our Sanitary Commissioners? If we require morbid secretions, have we not in the premonitory diarrhœa and in the rice-water evacuations, quite sufficient evidence, that in the internal lining membrane of the intestinal canal, there has existed enough of "excitement," "increased action," and "morbid secretions," in abundance? Our Commissioners seem to have forgotten, that the Germans long ago have discovered in the fæcal evacuations the *broken-down epithelial cells* of the small intestines. The debris of these cells, cast off by a species of *internal desquamation*, afford ample evidence of violent excitement, and remind us of those external diseases denominated exanthemata, such as scarlatina, in which the cuticle so completely desquamates, and becomes sources of contagion.

Henle, in his "Retrospect of Pathology," published in Müller's *Archiv.*, 1839, gives an admirable account of

the pathological researches of Böhm. A translation of this analysis is published in the *Medical Gazette* of November 22nd, 1839, from which I extract a few passages, recommending those interested in the inquiry to the original document.

"In the contents of the intestines of cholera-patients, Böhm has discovered the debris of the epithelium of the mucous membrane of the digestive canal, and he hence refers the phenomena of the disease to a morbidly accelerated process of desquamation from the membrane, which he has accurately traced through its several stages. The affection of the internal membrane of the digestive canal is not equal in its several parts; the stomach suffers little, and the large intestines least of all; it is *the small intestine, which is for the most part attacked throughout its whole length.*

"After the destruction of the cuticle, and when a raw surface remains, the destruction goes on in the very substance of the mucous membrane. The villi become thinner and weaker by a kind of maceration, their swollen free extremities split up, and assume a fibrous appearance, by the increase of which they are gradually cleft to their bases. The intestines thus affected, in irregular scattered spots, look like an old hide from which the hair is in part worn off. The extremest degree of destruction is found at the end of the ileum, where the Peyerian glands perish, and the mucous membrane is converted into a cracked and broken-up surface; but the whole process is effected with such rapidity, that patients, who in the morning complained of at most an uneasy moving of the intestines, and who die at noon, already present at their

post-mortem examination a considerable destruction of the mucous membrane. It is the fragments of the epithelium, which, mixed with the effused fluids, form the contents of the intestines. If the latter remain for a certain time at rest in a glass, their microscopic constituents will sink to the bottom. The contents of the intestines appear milky when *the quantity of secretion* is considerable in proportion to that of the elements of the epithelium, and the latter are very minutely divided. They are pus-like, or cream-like, when, on the contrary, the quantity of fluid is small in proportion to that of the solid constituents; flocculent when the epithelial cells are still connected in considerable masses; rice-water-like when similar flocculi float in smaller numbers in a turbid fluid; gruel-like when larger portions of the epithelium (some of a white and others of a greyish-green colour,) are mixed with one another, and connected by a scanty secretion into a mass of a pulpy consistence."

Henle adds, "Böhm has abstained from all conjectures on the nature of the process which he has thus accurately followed in all its phenomena. But the process by which the epithelium of the intestines is removed, has the greatest analogy to the formation of vesications; and Böhm has himself, in many places, compared the one with the other. The cause of desquamation is a mechanical and passive separation of the cuticle by the exudation, and the exudation is the essential part of the disease. This may be produced in two ways,—either by a primary general alteration of the blood, by which it becomes thinner, or by a local stagnation and change of it by a process which *we name inflammation*.

The first is improbable, because the process *is limited to the intestinal canal*, although the inner surface of the lungs and other organs is not less delicately formed. For the second view, the symptoms of the disease and other morbid appearances which Böhm found after death, are all favourable: as for instance, the injection of the vessels which is constantly coincident with the desquamation,—the tinging of the whole substance of the villi with blood,—the presence of fibrinous coagula in the effused fluid,—and the exudation of plastic lymph on the outer surface of the mucous membrane, in the region of the Brunnerian and Peyerian glands. All the secondary symptoms of cholera are explained by the great loss of serum which takes place so rapidly from the walls of the intestines, from the alteration of the blood thereby produced, and from the extended affection of the nerves of the internal surfaces. These circumstances do not act differently from a *burn, which is attended with blisters over the whole surface of the body.*"

We think it highly probable that these *morbid cells generate the specific poison of the cholera*; and the fact of a camp thus contaminating those who are within the circle of the fæcal evacuations, (*not from ordinary putrefaction and decomposition which does not produce Asiatic cholera,*) re-infecting those who shortly afterwards occupy the same position, connected as it has often been with the additional fact of the cessation of the disease on frequent removals of bodies of men into new and uncontaminated districts, all seem to corroborate the inference we draw from *an undisputed pathological phenomenon.* We are fortified in this view,

too, by the acknowledged danger of a residence near *the mouths of sewers, when the disease has once made its appearance*; and the great fatality and frequency of the disease in those cities where dirty privies are *situated within the houses*,—as in Paris, where the first, second, third, fourth, fifth, and even sixth floor has a foul nest of contagion of this character, and where the habits of the people are so devoid of cleanliness in this particular. I lived in Paris the year before the cholera broke out; it was then dangerous to walk in many of the narrow streets at night, lest something filthy coming down from an upper story should assail you. As for French privies no Englishman could use them, but willingly paid two *sous* for a "*cabinet d'aisance a l'Anglais.*" I hope Glasgow does not offer another example of this character, but not having resided there, I am unable to state whether such facts as I witnessed in Paris may not account for the great fatality of cholera in some towns of Scotland.

The French live more upon vegetable diet than the English, and hence, probably, are more susceptible of the malignant form of cholera. Comparative anatomy teaches us that the development of the intestinal tube depends upon the nature of the nourishment. Animals which feed on vegetables require greater powers of assimilation, and have a much larger and longer digestive apparatus than those which are carnivorous. The difference in the length and diameter of the intestinal convolutions of the dog and the horse is immense. We have no doubt that the Hindoo, feeding wholly on rice and vegetables, has more amply-developed *small intestines* than the flesh-eating

European, and hence a larger surface becomes exposed to a disease which seems to concentrate its morbid action upon this doubly-worked and highly-sensitive mucous membrane. The soup-fed and water-drinking children at Tooting, approximate in their susceptibilities to the Hindoos; their crowded state *concentrated the contagion*, and hence the mortality at which we have all shuddered.

If we examine the official reports of the cholera in Great Britain for the *first nine weeks*, from September 28th to December 1st, we shall find the number of cases 1,590, of which 741 have died. Of these cases the metropolis gives 413, and the deaths 225. The whole number of cases reported at this period of more than two months, after the first invasion, in the remainder of England and Wales, is only 148, and the deaths 77. The proportion is more than 3 to 1; yet, when we further take into consideration that the metropolis contains two millions and a quarter of inhabitants, while fifteen millions inhabit the cities and villages of England and Wales, (a large number living in towns far worse than the metropolitan district in point of sanitary arrangements,) we must be still more struck with the disproportionate mortality nine weeks after we had been told the epidemic influence had reached the shores of England!

In Scotland, or rather in about seven localities there, are reported in the same time 1,011 cases and 439 deaths, yet, all Scotland does not number three millions. Here again we have 3 to 1 against Scotland. If we take into account the number of pest vessels which have entered the mouth of the Thames and the

Firth of Forth from the infected ports on the continent, *we shall be able to explain this anomaly*.

Each focus of contagion has its own radius. The intercourse of the Firth of Forth soon reaches Glasgow and Dumfries. The first nine weeks of cholera in England, however, clearly show that for the most part, those places only had been then visited which have *primarily* had a large tonnage of *northern shipping*.

The *secondary spread* of cholera by inland communication with our own affected ports has not yet penetrated very far into the interior of the country. A tramp arrives at Hertford or Reading, and originates a few cases; or a family with the disease about them, migrate from London to Offchurch, in the neighbourhood of Leamington, and, with indecent haste, Leamington is reported by the Board of Health to be cholera smitten.

Indignant contradications to these misstatements are common enough, and it is scarcely worth while to say that Portland, some eight weeks ago, was reported in the cholera list.

The not uncommon occurrence of the death of a child of three years old, after a few hours illness, induced *the Board* to make this evidently erroneous statement. They must at that time have been extremely anxious for country cholera cases to put this down as one of Asiatic cholera. They have not been able to report a case there since. It has been evidently the object of the Board, in order to prop up their theory of the local origin of cholera from defective sanitary arrangements, to make it appear that here, there, and everywhere in England it was going to shew

itself. The laws of its contagion refuse to bend themselves to their sanitary theories, and country cholera cases in England, after three months importations, have hitherto been rare. The next three months, however, will reverse the picture.

I have already observed that the non-contagion of cholera, though it has been puffed off *pro bono publico* in the companion to the "British Almanack," as a "most blessed" discovery of the sanitary commission, was the general belief of the Indian surgeons previous to 1824. In 1824, Dr. Krabinski, an Armenian physician, residing at Tiflis, in a letter addressed to the Archbishop of the Armenian Church, propounds the same dogma. "This disease is not contagious, like the plague and other diseases." He had seen much of the disease, both in India and Persia, but in the warmer climates of the east so rapid is the diffusion of contagion, that the spokes of its chariot wheels are not visible. Dr. Rehmann, however, in the same year, published for the Russian Government two volumes of valuable reports on the "Progress of Cholera from 1817 to 1823, when it appeared at Astrachan." He was one of the most distinguished of Russian physicians, and with the electric scrutiny of a logical mind, he detected what was invisible to Krabinski. He says,—"We deem it, nevertheless, to be contagious, and there is no doubt but that it was brought by the merchandize and people in the boats to Astrachan, yet it is not so infectious as the plague." Questions of this controverted character are not to be settled on the mere dicta of authorities, and though the Sanitary Commission, and the Board of Health, have

adopted the Krabinski dogma, we must be permitted to enquire into the new advices received at the foreign office upon which their conclusions are grounded.

Let us examine the most recent, published in the Appendix to the second report of the Sanitary Commission. Here we find diametrically conflicting testimony; one of the deponents is, however, merely a British Vice-Consul; the other, an experienced British physician. Mr. Vice-Consul Bassam, of Mossul, in a despatch dated January, 1848, says,—" From what I have seen of this disease it does not appear to be in the least degree contagious, *and scarcely, if at all*, infectious, unless, perhaps, where many sick are congregated together, as in the wards of a hospital; in fact, I should consider it as an almost true epidemic, such as the influenza which has prevailed here since the last cholera disappeared." Quite a Coryphæus in the favourite doctrines of Gwydyr House is this Mr. Vice-Consul Bassam, the eminent professional authority at Mossul! Alas! medical men very seldom obtain the Consular or Vice-Consular dignity. Her Majesty's Consul at Archangel is more modest, and requested Dr. Mackenzie, Staff Surgeon, to answer the question. He says, very distinctly and pointedly, —" The majority of facts collected during the present visitation of the cholera *confirm the opinion* that the *disease spreads from person to person*, through the medium of the air, and there is every probability that the principle of infection finds its way into the system through these different media,—viz., the respiratory organs, the digestive organs, and the skin " Such is some of the evidence of " the gradual abandoment of the

opinion that the propagation of epidemic disease is mainly dependent on a specific contagion emanating from the bodies of the sick!" Thus, we see then, the most recent advices do not bear out the conclusion announced with so much emphasis by the Sanitary Commission, yet their epitomist, in the "Companion to the Almanack," (I suppose one of themselves,) bursts into the rhapsody,—"Blessed discovery!" "It is impossible to over-rate the importance of this discovery." He adds, in the same Io pæan style,—"The non-contagious character of cholera is now then considered sufficiently established, and how many blessings follow in the rear of that one great blessing." We cannot, for the life of us, understand the consolation which the public can receive from knowing that they may at any moment, in any part of England, breathe this "poisonous gas emitted under certain conditions of heat and moisture, from decaying animal and vegetable matter, unduly exposed to its influence;" that they may meet with it "going up one side of a street," or "waiting for the opening of a door before it enters the house!" This seems very sorry comfort indeed, though it may be deemed a most wonderful discovery! One would imagine from Dr. Parkes, that the safest place was the bedside of the sick, rubbing their cramped limbs, or emptying their close stools, for "not one of these hospital attendants," says he, "were attacked." "The medical officers were constantly on duty, yet enjoyed the same immunity."

They were unsusceptible enough to escape such a subtile enemy as the epidemic atmospheric influence, and yet we are told their escape proves the disease

non-contagious! As reasonably might we conclude that the well-seasoned nurses of our scarlet-fever and small-pox patients, who do not catch the disorder, prove these diseases to be non-contagious. *The mild and benignant form of cholera is a simple diarrhœa, which may be quite as effectual as the modified form of small-pox, induced by inoculation or vaccination.* A slight redness in the throat, and a scarcely-noticed rash on the skin, will for ever render a person unsusceptible of the most malignant exhalations of scarlet-fever. Secondary attacks occasionally occur; but the majority of mankind, if they have passed through the milder forms of either of these contagious diseases, are thenceforward *contagion-proof.*

The law is less universal with cholera, but it will be found sufficiently general to solve the enigma of the *occasional immunity* of nurses and *medical men* when in the closest attendance upon the sick. But that this immunity is only *occasional*, dependent on natural insusceptibility or previous seasoning, has been proved by our best authorities.

Drs. Russel and Barry, in their able report on the cholera of Russia in 1831, make the following statement respecting St. Petersburgh:—"The number of medical men and hospital attendants attacked with cholera during the present epidemic in proportion to the whole employed, has been beyond all comparison greater than in India, under similar circumstances. Twenty-five medical men have been already seized, and nine have died out of two hundred and sixty." Notwithstanding the early attention to the first symptoms which medical men and hospital nurses

receive, *many deaths have already been recorded* in England and Scotland during the present epidemic. *The number of mild attacks, of course, are unknown; they are considered simple cases of diarrhœa;* but they are, in fact, mild attacks of cholera.

We are glad to find the eyes of the medical profession in Scotland and in Ireland are beginning to open to some of the fallacies of the Board of Health and the Sanitary Commission, and we are gratified to know that a man of Dr. Simpson's acuteness has personally investigated the origin of cholera at Newhaven, though his coachman narrowly escaped the formidable effects of the contagion. It is true four of the nurses of the Edinburgh Cholera Hospital were within twenty-four hours (according to Dr. Sutherland,) poisoned by the emanations of the crowded wards. Three of the four died of Asiatic cholera; but Dr. Sutherland says very coolly "we don't call this contagion!" "I warned them of their danger from the bad smell I detected," and the Sanitary Commissioners have testified to the "general immunity of nurses and other attendants on the affected!!"

One of the most recent and graphic descriptions of cholera has been afforded by Mr. Thom, in his Report of the causes, character, and treatment, of the spasmodic cholera in H.M. 86th Regiment, at Kurrachee. Among the arguments brought forward by this gentleman, occurs the following passage:—"It was equally apparent that there was nothing contagious in the nature of the disease, *for instead of a few cases appearing first, and the disease gradually spreading,* it suddenly burst forth in a few hours in every European regiment, whether in camp or barracks,—in every tent, and in

every house; and it was at its acme in forty-eight hours after, when, instead of spreading further, it gradually declined. Now, it appears that for some days or even weeks, A FEW CASES HAD APPEARED IN THE NATIVE TOWN OF KURRACHEE, but there, about the same period, the malady became suddenly general over the whole place." Now, it appears the few cases appearing for some weeks within the town, were evidently the first *germs of the disease*, which atmospheric causes rapidly ripened and diffused, and entirely do away with the inference drawn from *apparent suddenness* of the general attack. But taking for granted the fact related, that a "few hours were sufficient to spread the disease in all the regiments," we would point out as a complete contradiction to Mr. Thom's deductions respecting the non-contagion of cholera, the circumstances observed in England;—the "few cases occurring first," and "then the disease gradually spreading," is *the universal law of the disease as it has hitherto shewn itself in this country*. The slow progress of the first few weeks of cholera, and the gradual diffusion of the disease at the present time, constitute the very circumstances which Mr. Thom points out as conclusive evidence of contagion. If the argument be a good one as employed by Mr. Thom negatively, it must surely be better still when we find the direct reverse of the picture positively occurring in this country. But the facts are still further explained by Mr. Thom himself. "Long before its visit to Kurrachee," says Mr. Thom, "we heard of its appearance in the Madras Presidency, and subsequently at Poonah, Bombay, and Ahmedabad, Deesa, and

finally arriving by the coastward to Scinde, where it first broke out at the sea coast, and from thence gradually extended to Hyderabad and Schwaun."

Now, its gradual advance in the lines of commerce, and its first invasion of the sea-coast of Scinde, are both opposed to the suddenness of the outbreak. The fact is, for a fortnight previous to the arrival of our regiments, the cholera had existed in Kurrachee, in a mild and insidious form. The stagnant atmosphere was loaded with the poison of the pestilence, and no wonder in an Indian climate and in crowded cantonments, the troops were soon rapidly affected. But another remarkable fact which Mr. Thom relates as a proof of its non-contagion, was the comparative escape of the officers. In addition to their being *well fed with animal food*, and better nourished than the men, they were quartered in "houses detached and isolated," and "permitting a free current of air." Can any evidence be more decisive in favour of isolation? If the cause where *wholly* atmospheric, why were not the officers seized as well as the men? They were actually between the two fires,—"between the 60th regiment and the Sepoys," both of which suffered severely. Their better nourishment, the isolation, and the ventilation were the concurrent causes of exemption. The first *rendered them less susceptible of contagion, the last two put them out of the reach of infection in such a concentrated form as to produce the disease.*

We have read loose statements with regard to the immunity of medical men in India. Putting out of the question the attacks of *diarrhœa*, which we should call *mild cholera*, which were no doubt promptly treated

and arrested in the cases of the medical men, we find *four* out of *forty* engaged in Scinde, were *carried of by the disease*. Four out of forty or ten in a hundred is a larger proportion than the number of fatal cases, either in the Sepoy or European regiments. Thus, not only is the fact of the " greater numerical proportion" falling sick with diarrhœa, attested by Mr. Thom, but his own statistics clearly prove that the medical officers suffered a greater proportion of mortality than the other officers, and even as great as that of the Sepoys, notwithstanding their prompt attention to the first symptoms. This new evidence, then, when carefully sifted, corroborates the statements of Drs. Barry and Russell, whose personal experience, though not so recent, was far more extended. They had witnessed the disease first in the climate of India, where the heat and moisture of the atmosphere combined to render the contagion of cholera most rapidly diffusible and miasmatic, but they added to that experience the most extended observations on the same disease as it appeared in a Russian climate. At St. Petersburgh, in 1831, they state, " The number of medical men and hospital attendants attacked with cholera during the present epidemic in proportion to the whole employed, has been beyond all comparison greater than in India under similar circumstances; twenty-five medical men have been already seized, and nine have died, out of two hundred and sixty." The subsequent history of the epidemic in St. Petersburgh increased these proportions; while in Paris, where the non-contagious doctrines had taken deep root, the mortality of the medical men was still higher, and

even the Prime Minister himself, Casimir Perrier, fell a victim to an insane perambulation of the cholera hospitals, which he took with other officers of State, to assure the public mind that the disease was not contagious. Buonaparte, at Jaffa, was more fortunate, when for similar reasons he breathed for a few minutes a well-ventilated plague-ward of his military hospital.

Anticipating the future spread of the Asiatic cholera throughout the land, when the warm sun of the spring and summer shall ripen the latent germs of this contagion into its acme of malignancy, I cannot but view with some degree of anxiety those non-contagious doctrines which emanate from men in high authority, whose position enables them to influence the opinions of the public as well as a large portion of the profession. Though many books and reports have been written within the last three years on the subject of cholera, very little has been added to our previous knowledge. Cases of collapse are as uncertain in their result as they were in 1832. The importance of attending to the early symptoms was as clearly taught in that day as it is now; the propriety of ventilation and cleanliness was as universally acknowledged as it is at present. *The immediate removal of those attacked with choleric diarrhœa into a clean and airy apartment, ought to have formed one of the special directions of our Board of Health.* We think that such a plan at Tooting would have mitigated the calamity, but the non-contagious doctrines had unfortunately perverted the mind of the medical attendant, and though he has since changed his views on the subject, a fatal experience has been necessary to remove those errors which

men of high position and standing had too carefully propagated.

Since the Asiatic cholera emerged from the confines of Jessore, in 1817, it has not ceased to make its appearance in some quarter or other down to the present time. Thirty-two years of its history have enabled us to track its steps from the extremities of Asia, through the continent of Europe, along the shores of Africa, and even in the New World. From the banks of the Ganges it passed into Burmah and China to the East, while towards the West with equal steps it reached Persia, the shores of the Caspian, the Russian empire, and the various countries of Europe, appearing in America, on its first and last invasion, soon after it had reached the Atlantic ports of Europe. No other disease, besides the small-pox, ever took so wide a range, and continued to exist for so long a period. It possesses the same analogies, in time and space, and unless human ingenuity discover some prophylactic, it bids fair to rival its predecessor in fatality also. It has ever travelled with the measured steps of the human traveller; not *with* the monsoon, but sometimes *against its* current;—not with the hurricane, nor with the earthquake. It has not taken any track of volcanic action nor electric movement; it passes toward all points of the compass, irrespective of magnetic or diamagnetic lines of force. In Russia it travelled at the rate of between two and three hundred miles a month, (from 400 to 500 kilometres.) It crosses the Atlantic, taking the line and the mode of conveyance of emigrant ships. It was well observed by the *Quarterly Reviewer* in 1831, that it had "a marvellous

penchant for easy travelling." It delights, too, in social intercourse; and in India accompanies marching armies or their camp-followers; and is very fond of grand festivals, whether at Juggernaut or Mecca. But though India had its Juggernaut festivals for ages previous, cholera never broke out among its congregated masses till after the *leaven of* 1817. Our armies had often crossed the peninsula of India, but never had they been decimated by the cholera till the forces of the Marquis of Hastings were very nearly put *hors de combat*, by marching into the focus of its contagion, in 1818; and though since the death of Mahomet pilgrimages to Mecca have been annually made by multitudes of the Moslem population, cholera never appeared among its caravans till subsequent to its appearance in Persia, in 1819. Can we draw any other conclusion from premises so well defined and universally acknowledged, than that a disease thus portable must be also communicable?

It is universally attributed to *human intercourse*, from the boats of Astrachan, to the tramp lately confined in Hertford gaol, after whose introduction it broke out in three days among the prisoners. Belfast and Offchurch, Leith and Staten Island, tell the same story. It is nowhere bred and multiplied till it has been *first imported.* The tell-tale newspapers constantly reiterate this statement; can anything but a *contagious principle* account for such uniform testimony? Can any disease be portable and reproductive without being contagious? Do we ever hear of the agues produced by the fens of Lincolnshire travelling over the Cotswold Hills? Malarious influence is confined

to the localities which generate it; *it is the property of contagion alone to defy all climates*, and such has been the case with the Asiatic cholera, wherever its poisonous *leaven has* been imported. Cesspools and stagnant ditches,—the bogs of Ireland,—the back slums and sewer mouths of London, and Glasgow, and Edinburgh, were all as numerous and uncleansd in 1847 as in 1848, and soup-fed pauper children were crowded in masses then as now, but no pestilential cholera was generated under all the conditions of vegetable and animal putrefaction, in that, or in ten preceding years. The efficient cause was absent; the *contagion* was not imported till the autumn of 1848.

That diseases exist which are *both epidemic* and *contagious,* cannot be a matter of dispute among scientific men who understand the meaning attached to those terms. If an epidemic disease be defined, as some writers have done, as a disease not capable of being propagated by contagion, and if Asiatic cholera be considered as such an epidemic, it is at once begging the question. We deny *in limine,* the major proposition. The definition is erroneous. Small-pox is *often an epidemic,* and yet it is invariably propagated by contagion. Cholera we allow to be an epidemic disease, and its whole history from 1817 to 1849, demonstrates that it is a pestilence which is propagated by contagion, or in other words, that the *emanations from the sick are capable of communicating the same disease to the healthy individual!* Now, small-pox has never been absent from the earth since the time of Mahomet, when it first appears to have commenced its destructive career. Since that early period it has always been

found, and though it was once fondly anticipated by those who founded the practice of vaccination, that like the dodo, it would by and by become extinct; the history of its progress and continuance have hitherto falsified the anticipations of the enthusiastic philanthropist. The "sweating sickness," and "the black death," which committed such ravages during the middle ages, have entirely disappeared. They *may have been* epidemics without the contagious property,—without the power of reproducing and perpetuating their kind, and when the conditions of their production ceased they may have died a natural death. It is impossible for us now to settle the question of their contagion upon any satisfactory basis. The facts are wanting on which to build a perfectly satisfactory conclusion. It would have been fortunate for mankind if the cholera had left us equally in the dark.

The epidemic invasion of the Asiatic cholera in 1831, was first reported officially in the first week of December in that year. The last week in March, 1832, (March 29th,) presented the following statistics of the disease:—

Total number of cases	8815
Total number of deaths	3320

This table exhibits the extent to which the disease had extended on its first (generally the most severe,) visitation during the period of four months. The view taken by the Board of Health of that period, as well as by the majority of medical men in England, was, that the disease is contagious. The garments and bed-clothing of the sick were strictly purified if not destroyed, and the communication between the

sick and the healthy was as much as possible suspended. No such recommendations have been issued by the present Board of Health, and the community have been taught to believe the whole system of quarantine public and private, national and domestic, q uite useless and impracticable.

What has been the result of the new system adopted by the Board of Health now in existence ?

The Asiatic cholera began its ravages in the first week of October, 1848. Up to January 27, 1849, *rather less than the same period,* the following results have been registered :—

Total number of cases	10,047
Total number of deaths	4,467

It appears thus pretty clearly, that our present Board of Health have been quite unsuccessful in their plans so far as the arrest or the mitigation of the disease goes. We shall by and by enquire into the sources of their failure. We have had, instead of a diminution of the disease, an actual increase of one fourth during the first four months.

I have already alluded to the variola ovina, as offering an example of the progress of a disease notoriously contagious, and presenting analogies which it will be desirable to examine, in elucidation of the cholera importation. Flocks of sheep do not migrate and commingle to the same extent as human beings; contagions, therefore, do not spread among neighbouring flocks with the same rapidity as cholera marches from town to town. An Act of Parliament was passed last session, 11 and 12 Vict., cap. 105 and 107, for prohibiting the further importation of cattle affected with

this disease. Inspectors of foreign cattle have been appointed at our chief ports, and these animals are now subject to quarantine. The diseased sheep are required to be "seized and destroyed, with any pens, hurdles, litter, hay, straw, or other articles likely to have been infected." In 1837, Mr. Youatt, an able writer on the diseases of cattle, declared that no such disease was knowu in England, and he described it on the authority of the French veterinary professors, by whom it was called "Clavelée." It had been noticed by them as early as 1747. The free importation of sheep under the new tariff brought it into this island; *a restricted commerce kept it out of this country for a hundred years*, during which time it had manifested itself pretty generally on the continent of Europe, and had often thinned the flocks of France. For a long time in the Hamburgh market a separate place had been appointed for the contaminated sheep. Inoculation of the sheep has been employed in France very successfully, with an average mortality of one in four hundred. *No foreign sheep are now to be introduced without a warrant from a veterinary surgeon.* Had such precautions been observed on the first adoption of free importations, many of our agriculturists would have been preserved from immense losses which they have already sustained from this contagious epizootic. The disease, however, is now introduced *into many of the counties of England*, and it spreads into places where *communication cannot be fully traced, the atmosphere appearing to be the vehicle* of infection. It has been well observed, that if the quarantine laws are to be abolished, let the experiment be tried *in corpore*

vili : we have it seems reversed the experiment. Crews sick with the cholera have been allowed free pratique, while the most stringent measures have passed the legislature to enforce quarantine on diseased cattle! We do not find our non-contagionist doctors have tried their hands upon this epizootic, or, perhaps, we should hear that contagion was an exploded doctrine, only fit for the dark ages,—that the pestilence came on the wings of the wind, and crossed the Channel, nobody knew how,—that although it was never known in England till the new tariff, it was entirely owing to a neglect of sanitary regulations in our sheep-folds! Very learned discussions, no doubt, would clearly prove, that though it might have been first noticed in vessels arriving in our ports from abroad, it was entirely to be attributed to its particular "*penchant* for the mouths of rivers;" that it had a peculiar knack of jumping over one place and settling in another; and that after a few cases had occurred in a British port, it was quite useless to keep up quarantine regulations, which had been found ineffective on the Continent! Now, the absurdity of these positions are patent to every understanding, when applied to the variola ovina. If the cholera be a contagious disease, which every day's experience gives us more and more reason to believe, the fallacies of our Board of Health and our Sanitary Commissioners must strike the common sense of the community. *The removal of all quarantine within a few days after the first cases of cholera had occurred at Hull was soon succeeded by numerous cases in the ports of Leith and London.*

If it be objected that inferences drawn from epizootic

diseases are less decisive than those derived from epidemics, let us examine the records of the small-pox in man. In the metropolis we have already alluded to the evidence of Dr. Gregory, but in places of less population we can easily track its steps. About four months ago, a case of small-pox, which had been treated in St. George's Hospital, was sent, after recovery, into the country. It had been a severe case of the confluent form, but the whole surface of the body had been covered, and a new skin had been formed. The young patient had been convalescent a fortnight; his clothes were supposed to have been purified, and the physician who attended assured him that it was quite safe for him to return to his family in the country. No case of small-pox had occurred in the parish of Spetisbury for fifteen years. Within a week after his arrival his elder brother sickened of the small-pox; it was severe and confluent, but he recovered. His younger brother took the disease a fortnight afterwards; it was distinct and mild. All three had been previously vaccinated. By strict measures of *quarantine*, and by vaccinating the children of the village, and re-vaccinating the adults who lived near, we succeeded in arresting the disease. Had these been cases of cholera instead of small-pox, it might, perhaps, have been denied that the St. George's case produced the other two cases; it might have been said separation of the sick for six weeks, which we adopted for the safety of the rest of the community, was an unnecessary measure, and that the disease being very capricious, died out of its own accord.

Now, I have a very strong objection to the use

of such an unphilosophical word as "*capricious*," as belonging to any disease. It is always in the mouths of the non-contagionists, because they cannot account for many of the phenomena of cholera without supposing the malady capricious, as if the poison of contagions followed any other than natural and regular laws. The caprice only exists in the understanding of those who use the term. The pathological laws of cholera are as definite as those of the Medes and Persians. It is sometimes called, too, a "mysterious disease," and we confess that it must be a very great mystery to all those who deny the existence of contagion. But, the mystery to me is, that after so much has been written, and so much observed, people should yet imagine there is any mystery at all about it. Why, if the cholera is a mystery, the plague is a mystery, the small-pox a mystery. We shall never know under what peculiar organic or inorganic conditions the poison of small-pox originated, though mankind have studied it for the last eight hundred years, but we know some of its laws which are of great utility in preserving us from its ravages, and the *most important laws upon which all our prophylactic powers have been based are its laws of contagion.*

The malignant scarlet fever in all probability was the plague of Athens, described by Thucydides. The records of early pestilences are, however, very meagre and imperfect. The small-pox and measles were no doubt much more formidable in the primary invasions of new countries, as modern history has taught us. The American Indian tribes have sometimes perished by thousands, when the intercourse of civilized nations

have introduced among them the contagious poison of various diseases of the civilized world. "Yet, (says Dr. Odier,) at some periods small-pox and plague carry off hundreds: at others, children whom we inoculated, have gone out every day, even after the eruption had broken out;—they have been in the streets and public walks;—they have communicated freely with other children susceptible of the infection, and not only the small-pox did not spread, but there did not occur, to my knowledge, any distinct instance of communication of the disease from one individual to another, in the streets or promenades." *Yet the small-pox spreads only by contagion.* Dr. Haygarth, in his "Enquiry how to Prevent the Small-pox," has given us an accurate account of this epidemic in Chester, in 1777:—"At the beginning," says he, "two or three families were seized, not immediate neighbours, but in the same quarter of the town. Afterwards, the poor children in several parts of the town were attacked at a considerable distance—in some places half a mile—from each other." Yet many portions of all the large streets were not infected in November, (the epidemic began in May,) but so late as December and January the distemper returned to attack many who had escaped when it was in their neighbourhood some months before. In the middle of the city, in one street, (King-street,) of twenty-four who never had passed through the distemper, only two, both in the same house, were attacked. During the summer and autumn of 1777, while this epidemic was general in Chester, many of the surrounding villages, (as Christleton, Barrow, Tarvin, &c., and some larger towns,—as

Nantwich, Neston, &c.,) were visited by the small-pox in one or more families; yet *the distemper did not spread generally through any of these towns.*" We ask, have not such irregularities occurred in cholera? Do they prove the non-infectious character of cholera, when the same circumstances attend such a notoriously infectious disease as small-pox? Positive facts of contagion are not to be laid aside for negative facts, which disturbing causes as clearly explain as they do the perturbations of Uranus. Though these puzzled the astronomers for some time, no one was bold enough to attribute them to the non-existence of the laws of gravitation.

In the *Provincial Medical and Surgical Journal* of Nov. 15th, I have related the circumstances attending the origin and spread of cholera in the village of Bere Regis in this county, in 1832. One solitary case from London, where cholera was raging, terminated fatally. Within a month, twelve other cases of Asiatic cholera occurred, six of which were fatal. Not a single town or village around Bere presented a case before or since that period. Such well-marked and definite instances are not to be explained away.

We will add another signal instance of contagion during the present epidemic:—A boatman on the canal, with his wife and family, returned a few weeks ago from London, where cholera was of frequent occurrence on the river. They were seized with illness on the way. One child died on the passage, and they were all very ill when they arrived at the village of Offchurch. They were put into a room occupied by other persons. No suspicion of cholera existed. After

the death of the woman and two children it was suspected that they had been been poisoned and an inquest was held. The truth now became manifest, and eight other cases followed, six of which proved fatal. Within the last fortnight four fresh cases have occured. Now, Offchurch is a village in the very centre of England; no case of cholera had happened in its neighbourhood until the fatal boat from London introduced it. Had such facts been related with regard to small-pox, not the slightest doubt of contagion would have existed in any mind. The style of reasoning must be very far-fetched which refuses a parity of logic for the Asiatic cholera. We deem these instances glaring and decisive, and little short of the "Experimentum crucis" of Lord Bacon.

The contagion of hooping-cough is one in which the atmosphere forms the vehicle of morbific germs, but in which *no eruption like the exanthemata* exists. Within the last six months it has fallen to my lot to trace its invasion of a village in Dorsetshire, owing to the importation of a single case from Portsmouth, and during the same period a connection of a patient of mine has carried the disease to the island of Teneriffe, where the disease *never appeared before*. Soon after the introduction of the first patient, who had the disease on board-ship, (having caught it of a sister at school in the west of England,) the whole island became the subject of this contagious epidemic. It is quite erroneous to call this disease, or scarlatina, or measles, infantile diseases; they are diseases to which all adult mankind are liable, as is clearly proved when *they attack a new community*. The *adults who have gone*

through the disease in countries where these epidemics have long existed are contagion-proof; the children are generally the only parties left susceptible of the poison.

This should teach us a lesson with regard to cholera. If possible, those only should be employed with the sick as nurses, who have gone through the disease previously; they are generally contagion-proof.

The February number of the *Journal of Public Health*, alludes in terms of high and deserved eulogium to the efforts of the Medical Staff of the army and navy in improving the health of the soldiers and sailors, by wise sanitary regulations. We think the praise is well deserved, but on the subject of contagion there is much still to be done, as will suggest itself to anybody who peruses the following short statement of facts, which have lately come to my knowledge. Last year six hundred men, principally fresh recruits from the north of England, were ordered to Portsmouth to embark on board a transport ship for Malta, to relieve our Indian regiments. They arrived in London, but instead of being located in barracks, they were distributed by their billets into various lodgings about town. The public houses provide these temporary accommodations instead of receiving them as inmates. On the following morning the regimental roll was read over at the station; every man, to his credit, responded to the call. They went by the train to Portsmouth, and embarked the same day. Before their arrival at Malta, the small-pox and typhus fever, which *a few* of the men *caught in one night's sojourn in London*, broke out, and they were obliged to go into quarantine at Malta, where two hundred lay sick, of which number

eighty men died. The commanding officer was obliged to return invalided, and two hundred men were put *hors de combat* from this one night's exposure to the infection of indiscriminate lodgings found for them in London. At their depôt in Lancashire, the men were perfectly healthy. The ship was a large and roomy one, affording the usual accommodations; and contagion alone, which might have been guarded against by the men going into healthy barracks in town, was the *sole efficient cause of this dreadful mortality*, which exceeded that of the Pauper Asylum at Tooting. We have not heard that any verdict of manslaughter has yet been recorded against any of the Government authorities, whose want of foresight led to this sad catastrophe! Mr. Grainger would have been puzzled to find Tooting drains and Tooting starvation to account for the mortality on board this Government ship!

In an article of mine, published in the *Provincial Medical and Surgical Journal* of Nov. 15th, 1848, it was observed:—"The mortality from yellow fever on board the *Eclair*, in one of our own roadsteads, clearly proves that the scourge of Africa can propagate itself in the temperate climate of Britain; and while we keep up at an enormous expense of human life and treasure a blockading squadron along the African coast, in the vain hope of exterminating slavery by such means, it is very possible, at some future period, the fever of the Niger may locate itself for a while on the banks of the Thames." The last mail from the West India islands announces, in corroboration of my opinion of the danger arising from the African squadron if quarantine be abolished, the recent re-importation into Barbadoes, by a vessel

from Africa, of this pestilential yellow fever, as an alarming fact. The African fever has been actually imported into this island by the very channel pointed out, and sixteen officers appear to have already fallen victims to the plague. We have not yet an accurate report of the number of the men belonging to British regiments who have been attacked and perished, but the quarantine of the *Eclair* at the Mother Bank was ridiculed by the non-contagionists, and in Barbadoes their free pratique system had its full fling, and has produced its frightful fruits. In the midst of the dying and the dead, we are told that the work of Sir William Pym, which demonstrated so conclusively the contagion of yellow fever, is read with terror and dismay, and the speculative dogmas of the non-contagionists are scattered to the winds by the force of facts patent to every understanding. No doubt we shall hear the old story of drains and swamps, and cess-pools, and dust will be thrown in the eyes of the community to prove that yellow fever has been generated in a locality where so little has been latterly known of it, that the medical officers seem to have mistaken entirely the character of the new disease, which baffled all their efforts. No isolation of the sick, no quarantine regulations, seem to have been adopted to arrest the first inroads of the invader, and the penalty of ignorance has been paid to teach (we hope,) the non-contagionists another lesson, which Sir William Pym has had great difficulty in enforcing on the authorities at home. We have no doubt the next news from the West Indies will bring us the mournful intelligence of the extension of this contagious disease, which committed such ravages in the last century that in some

places the living could not bury the dead; yet Barbadoes is one of the healthiest of the West India islands.

I cannot resist upon this point quoting a paragraph from Dr. Copland's valuable work as illustrative of the danger of those non-contagionist views which have received such countenance at home, in spite of the remonstrances of practical men. These errors have led to the repetition in 1848 of the same fatal results as they did in 1795. Not only Barbadoes, but all the West India islands and even Philadelphia and New York, in a more northern climate, were most severely visited by an enemy, which might have been warded off by a correct knowledge of its laws of propagation, which, fortunately for us, influenced our own Quarantine Board in the case of the *Eclair*.

Dr. Copland, in allusion to the year 1795, remarks:—

"The re-appearance of this malady in the West Indies, after an immunity from it during many years, was attended by many distressing results, owing to the circumstance of its having been confounded, by superficial and inexperienced observers, with the common remittent fever of the country. We frequently find, upon referring to reports of medical officers, that the pestilence broke out, and was most destructive, among regiments which had marched into barracks in which it had already prevailed. Thus the 35th Regiment landed in Guadaloupe on the 12th of May, 1795, and on the 30th of June of the same year, in six weeks, it had lost 136 men. The 2nd Regiment landed at Martinique in March, 1805, and in the following May it had lost ninety-seven men. These men landed during the

prevalence of this pestilence in these islands, and without any exposure they instantly, and without marching or service, occupied quarters in which this malady had prevailed, but as it was supposed not to have been infectious, the highly-predisposed troops were instantly introduced to the operation of its efficient cause. The distemper was viewed as having been free from infectious properties, and as being the common seasoning fever of the climate, and *no precautions were taken in* these instances, as well as many others, against its dissemination. Numerous other instances might be adduced of the dreadful effects resulting from monstrous ignorance on the part of those who ought to have been informed by the experience and judgment of those who had gone before them, if they were incapable of arriving at rational inferences from their own unassisted reason; but the subject is humiliating to human nature, especially when viewed in reference to medical doctrine and to professional character."—*Copland's Dictionary of Practical Medicine.*

We have been told on high authority that cholera invariably followed the fever-track; and learned statistics designated the districts in which we were to expect it. The Registrar of Tooting, however, states that it has always been a healthy locality. Had the measles or scarlet fever broken out in an asylum where fourteen hundred pauper children were crowded together, they could not have more clearly shown their contagious properties than the Asiatic cholera has done. Twelve hours of the contagious emanations of a few cholera patients, are sufficient to infect a whole

ward. *The diarrhœa is not the avant-courier, it is the cholera itself; complete separation from the non-infected, and ample space and ventilation should have been adopted on its earliest manifestation.* To suppose the drains of Tooting could have produced the disease, is manifestly absurd, as the inhabitants of the village, who were in the more immediate proximity, were, and are at this time, perfectly free from the malady. The recurrence of cases weeks after the boys had been removed into other localities, and the *fatal cases among the nurses who had never been at Tooting at all,* are direct proofs *that contagion alone was the efficient cause.* When the disease has spent its fatal influence on the more susceptible, it subsides spontaneously; and from Dr. M'Cann, at Bilston, down to Dr. Sutherland, at Glasgow, great credit is always given to those who are called to act in the last few weeks of a cholera invasion. It reminds us of the Prussian victory at Waterloo.

It is too much the fashion now-a-days to confound all distinctions in classifying diseases. The efficient cause of scarlatina and typhus is, without evidence, assumed to be identical. In earlier times small-pox and measles, and chicken-pox, were thought to be the same malady. Our modern pathologists, who took so much trouble to rectify the errors of ancient diagnosis, are now set aside as drivellers by men who deem yellow-fever, plague, typhus, and continued fever, only types of the same disease. We think the common sense of the profession will repudiate such dogmas, though stamped with the authority of our Board of Health.

We have already alluded to the fact that there are two essentially different diseases in all countries, in India as well as England, though we call one of them English and the other Asiatic cholera. If the specific name of cholera is to remain attached to the pestilential variety, the other should be called *choleroid*, and the analogies of other diseases suggest the propriety of the distinction. Syphilis has its pseudo-syphilitic mimic in some of the forms of scrofula; there is the grocer's itch, as well as genuine psora. Febrile petechiæ somewhat resembles measles; typhus shades off into some of the forms of uninfectious typhoid; variola possesses its varioloid imitations; roseola, with sore-throat, looks very much like scarlatina. We must not, however, confound these essentially different diseases, which require very different treatment, though they possess some points of similarity. Typhoid, varioloid, scarlatinoid, and choleroid, are available terms by which we may at the same time designate their differences as well as their resemblances. The *choleroid* of the summer season of all countries depends on atmospheric or dietetic causes, though it may sometimes assume an epidemic and severe character, as it did in Sydenham's time. But the true pestilential cholera braves even a Russian winter, and so well-known is its grand commercial track, that its visitation is now pretty accurately predicted. *The laws of contagion alone can fully explain its calculable travelling propensities.*

We must, I fear, reasonably expect a general diffusion of the disease in the spring and summer of 1849. Its progress in Scotland has been in a far more rapid

and fatal ratio than in 1832. The experience of Tooting should induce our Poor-Law Commissioners to revise all their dietaries, for the general plan sanctioned by them, of porridge and pea-soup feeding three or four times a-week, increases, as we have already shown, the susceptibilities of the pauper population. It is unfair that poor Drouet should be made the scape-goat of such dietetic errors as have been sanctioned on high authority; and should cholera appear among the inmates of Norwood, I have no doubt we should soon find that the germs of contagion would produce their amply-developed fruit even in that establishment. The abolition of the whole system of farming the poor, should be immediately insisted upon by the Poor-Law Commissioners; and if they abolished at the same time the practice of farming the medical supplies, it would be a great improvement on their system. Physic as well as food should be supplied as they are in our hospitals and dispensaries, and the skill and attention of the medical officers should alone form the basis of their remuneration.

The inconveniences of quarantine laws to a commercial nation like England, holding extensive and rapid communication with all parts of the world, have produced for many years a strong tendency to question their propriety, to obtain a modification of their stringent application, or at once to get rid of them entirely. If it be a fact that these laws have never yet been able to accomplish the object for which they were designed,—that evasions and illicit communications have generally rendered them nugatory,—that the facilities of modern travelling by sea and by land, through the application

of the steam engine render them intolerable and less effective than in the earlier states of society, let the Government abolish quarantine with its eyes open, and with a full recognition of the risks we are to run. These questions ought not to weigh one feather in the scale when we enter upon the specific inquiry as to the contagiousness of any disease. It may be true that quarantine laws are now no longer practicable, and yet the plague and the cholera, and the yellow fever, may be infectious. We do not wish to mix up the abolition of the quarantine system with the strictly medical enquiry; the one belongs to the sanitary police of nations, the other involves pure medical truth. Let not, however, the quarantine laws be abolished on a fictitious plea, and under false pretences. If commercial reasons are of sufficient importance to induce a great commercial people to suspend or abrogate these laws, let those reasons rest on their proper basis. We must not bend medical truth to meet the demands of modern society. On the quarantine system I have now no purpose to enter: our present enquiry is limited to the contagion of pestilential cholera; neither do I wish to mix it up with those sanitary improvements which experience has taught to be so essential to the well-being of the community. *Good drainage, ample space, fresh air, a copious supply of pure water, and the removal of all filth and impurity, are valuable and necessary conditions for the healthy physical, and moral development of man;* they are sacred projects which I would not for a moment interfere with or oppose; they have an important influence on the health of man, and the course of all

diseases, whether contagious or not. These objects, however, must not be advanced at the sacrifice of truth; they must not be obtained surreptitiously by false statements, erroneous inferences, or unfounded perversions of facts; it is too holy a war for such desecrated weapons. A pious fraud may suit the morality of the medieval period: it is not justifiable in the nineteenth century.

To sum up, then, the results of these enquiries, we are driven to the following conclusions:—That the cholera is a contagious disease;—that the morbific germ has a period of incubation, varying from three days to a fortnight;—that the milder diarrhœa which, *pari passu*, accompanies the severe form of cholera, is *a variety of the same essential disease*;—that the emanations from the bodies of the affected, whether in the stage of diarrhœa, collapse, or consecutive fever, are productive of the genuine Asiatic cholera;—that the arrest of diarrhœa, though it does not always prevent cases from running into collapse, is of the utmost importance in mitigating the severity of the disease, and should be considered as the first stage of cholera, to be met by the most prompt medical interference, and careful watching;—that the susceptibility of receiving the disease, *in the severest form*, is very much lessened by regular, solid, and wholesome diet, partaking in a suitable proportion of animal food, and moderation in the use of stimulants;—that the contamination of fæcal evacuations being the most fertile source of the disease, demands the most cleanly sanitary arrangements; that as the exuviæ of the skin in small-pox and scarlatina, produce those special diseases alone,

and not cholera, so the exuviæ of the mucous membrane, in this disease, produce the special symptoms of Asiatic cholera; (the ordinary results of common vegetable or animal putrefaction being quite of a different character;) that the contagion may be mitigated or destroyed by the free ventilation of the sick, the non-concentration of the poison, and the purification of the clothing, bedding, and utensils of the affected;—that while its introduction by tramps and vagrants has already, in numerous instances, propagated the disease in England, its invasion of Belfast, New York, New Orleans, and the Texas, in a less time than it has taken to reach our western ports, proves its more easy communicability by means of shipping, and its necessarily *portable and contagious properties.*

The English word contact has nothing to do with the meaning of contagion. Contact is, mathematically, impossible; and the contagions of scarlet fever, hooping cough, &c., are never connected with the idea of physical touch or contact. Neither has the term been used with such restrictions by any medical writer of the contagionist party, or by the public, or by the Legislature. Even Virgil himself does not refer to actual contact when he says,—

"Nec mala VICINI pecoris contagia lædent."

Vicinity is quite near enough, without actual touch. Those who use the word contagion only in the sense of contact, must be narrow-minded classics, for no fair rules of criticism can justify the exclusive meaning which they would attach to the term contagion.

The history of "Asiatic Cholera" now reaches a

period of thirty-two years. *We have no record of any epidemic which could continue in existence in successive years over the various climates of the globe for so long a period, without the ever-living and active principle of contagion as its efficient cause.* No atmospheric cause could have continued in existence so permanently and unchangeably as to produce the same identical disease in all the countries it has visited. Even now many insular situations have been left entirely unvisited. No cause of telluric or magnetic origin could have given birth to such a roving pestilence. We are driven, *par voie d'exclusion*, to the one cause of contagion, and till that is generally acknowledged and fairly met, we are like sailors navigating without a compass. Boards of Health are, indeed, truly enough described by Lord Carlisle, as only Boards of Works, and those works are of a very questionable and blind description. Their first fundamental principle of non-contagion is erroneous; no wonder they flounder on as the registrars of a mortality far greater than their predecessors. The philosophical historian, Gibbon, takes the same view of contagion as the poet Virgil. The graphic description which he gives of the plague in the time of Justinian may be quoted as a beacon for modern times. "Contagion is the inseparable symptom of the plague, which, by mutual respiration, is transfused from the infected persons to the lungs of those who approach them. While philosophers believe and tremble, it is singular that the existence of a real danger should have been denied by a people most prone to vain and imaginary terrors; yet the fellow-citizens of Procopius were satisfied by *some short and*

partial experience, that the infection could not be gained by the closet conversation, and this *persuasion might support the assiduity of friends or physicians* in the care of the sick, whom *inhuman* prudence would have condemned to solitude and despair. But the *fatal security*, like the predestination of the Turks, must have *aided the progress of the contagion*, and those *salutary precautions* to which Europe is indebted for her safety were unknown to the government of Justinian. No restraints were imposed on the free and frequent intercourse of the Roman provinces; from Persia to France the nations were mingled and infected by wars and emigrations, and the pestilential odour which lurks in a bale of cotton was imported by the abuse of trade into the most distant regions. The mode of its propagation is explained by the remark of Procopius himself, that *it always spread from the sea-coast to the inland country*; the most sequestered islands and mountains were successively visited; the places which had escaped the fury of its passage were alone exposed to the contagion of the ensuing year. The winds might diffuse the subtle venom, but unless the atmosphere be previously disposed for its reception, the plague would soon expire in the cold and temperate climates of the earth. Such was the universal corruption of the air, that the pestilence which burst forth in the fifteenth year of Justinian, *was not checked or alleviated by any difference of the seasons.* In time its first malignancy was abated and dispersed: the disease alternately languished and revived; but it was not till the end of a calamitous period of fifty-two years that mankind recovered their

health or the air resumed its pure and salubrious quality. No facts have been preserved to sustain an account or even a conjecture of the numbers that perished in this extraordinary mortality. I only find that in three months five, and at length ten thousand persons perished each day at Constantinople,—that many cities of the East were left vacant, and that in several districts in Italy, the harvest and the vintage were left withered on the ground."

In conclusion, then, I would seriously advise the lay-members of our Board of Health, to associate with their body some of those members of the medical profession who recognize the principle of contagion as the efficient cause of cholera. Fundamental errors have been already committed, as the statistics of the progress of cholera during the last four months clearly prove Let it not be recorded against them at the end of the year, that the ultimate mortality has exceeded by one-fourth that of the last epidemic. Sanitary laws are better understood than they were in 1832. The removal of the potato as a general article of food has thrown our population upon the healthier cereals for their sustenance; and the resources of medicine have been replenished with new agents available to meet the evil, while the general recognition of the disease in its early and premonitory symptoms, offers a fairer opportunity for the employment of those resources which are not only within our reach, but are proved to be so efficient in the first stage. All these circumstances combine to render our defences against the foe more definite and more complete. The contagious principle of the epidemic being authoritatively denied by our

Board of Health, must influence the practice of a large portion of the misguided community, and the means of arresting and destroying that contagion, cannot be enforced by men who "discredit the once-prevalent opinion, that the cholera is in itself contagious." Here is the weak point of our citadel of defence;—here is the Trojan horse which will import the armed enemy into our besieged towns. The confidence of the profession is already shaken in our Board of Health, and should a far more fearful mortality await us, a verdict of "manslaughter" may at some future period be recorded against a body who have failed in pointing out the first fundamental law of a disease, which the last Board of Health, under the presidency of the late Sir Henry Halford, did not fail to recognize and act upon.

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