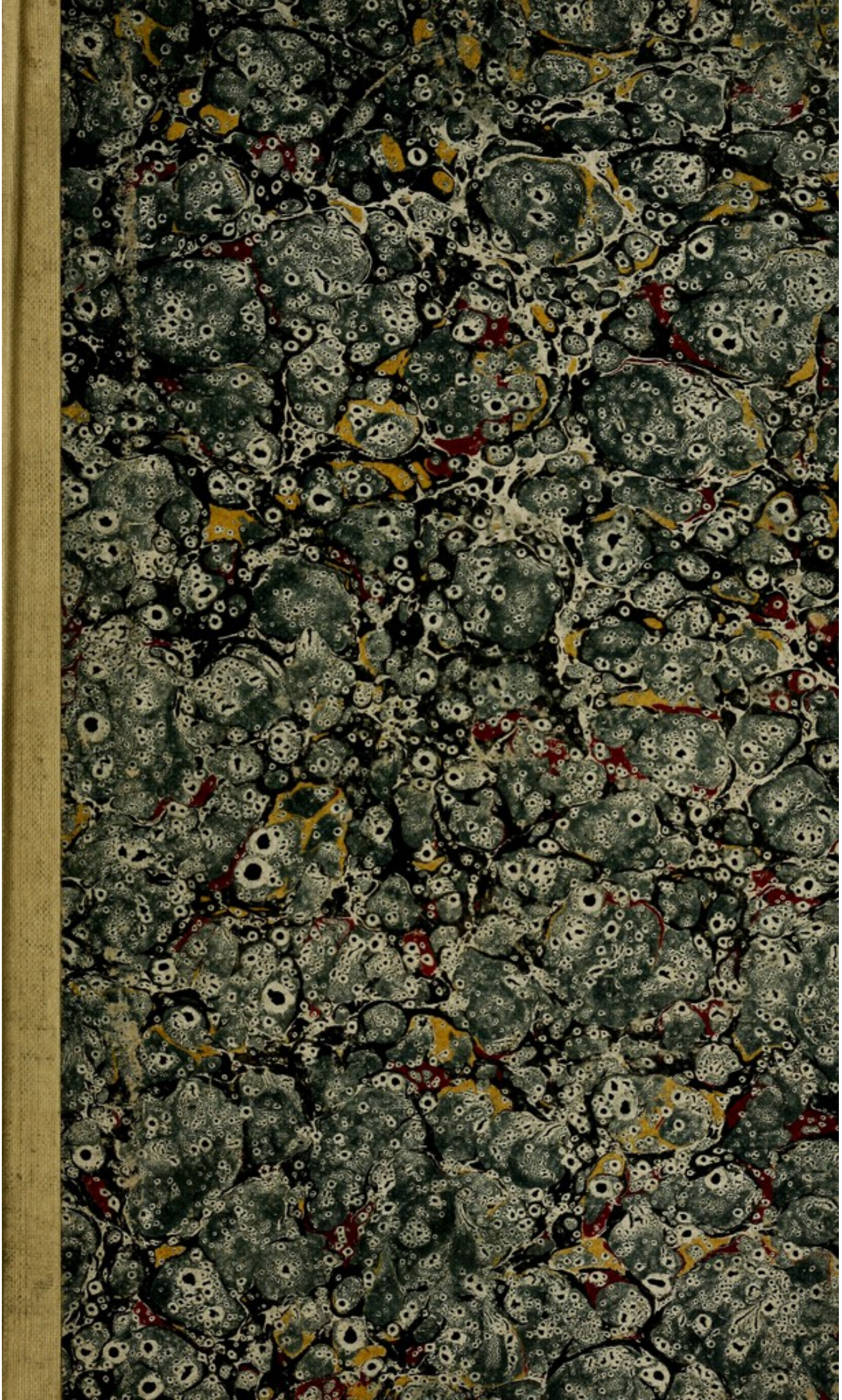
A letter to the right honorable F. Robinson, M.P. ... on the plague and contagion with reference to the quarantine laws : including the history of plague conveyed direct from the Levant to five European ports of the Mediterranean, within the last six years : and also a detailed account of the experiments made on the subject of contagion in plague, by Deidier, Samoilowitz, Desgenettes, Dr. Whyte, Dr. Valli, Dr. Maclean, and Mons. Rosenfeldt / by Augustus Bozzi Granville.

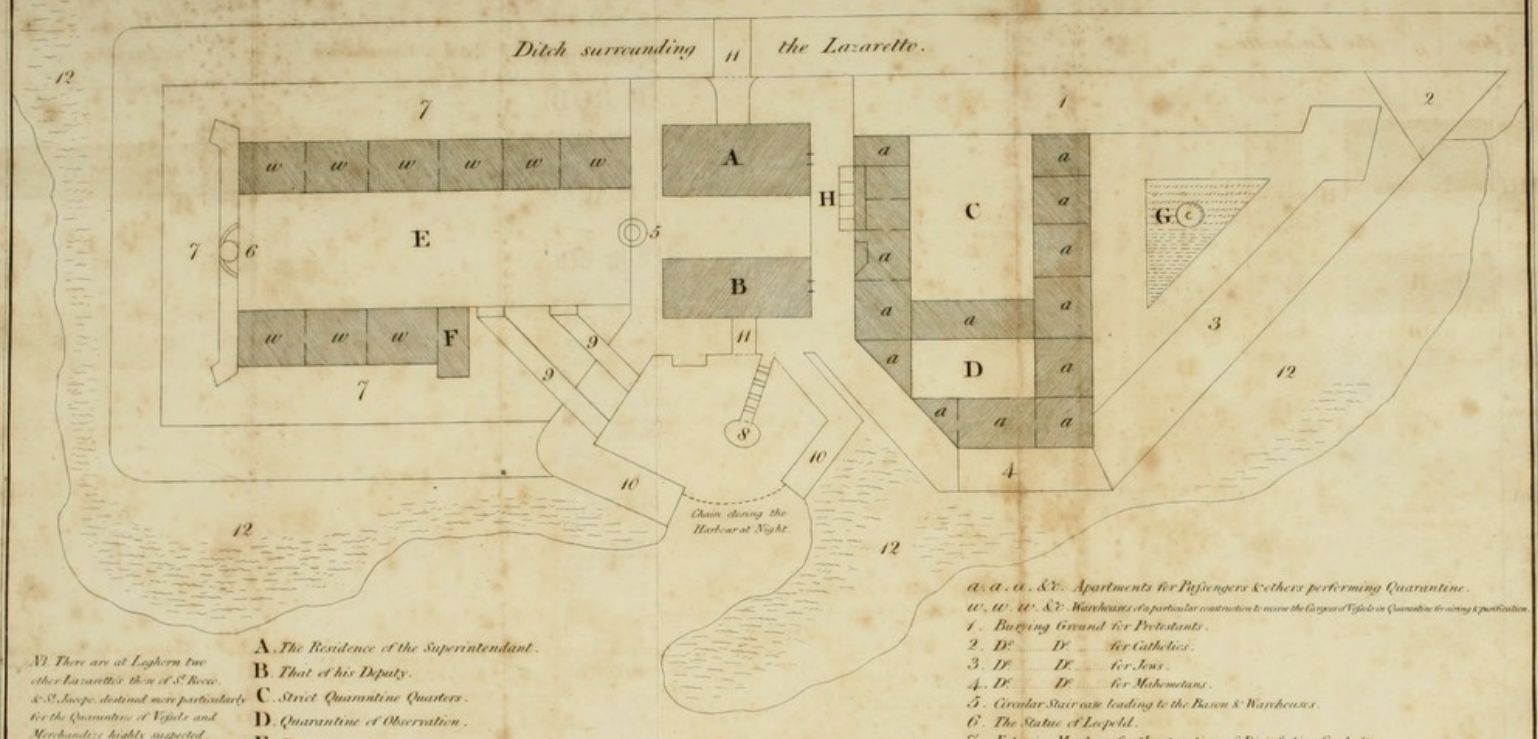


A LETTER

ON

The Plague and Contagion.

Sketch of the Plan of the Lazaretto at Leghorn, taken on the Spot in 1814 by Dr Granville.



N.B. There are at Leghorn two other Lazarettos those of St Rocco & St Jacopo destined more particularly for the Quarantine of Vessels and Merchandize highly suspected. The present plan is that of St Leopold for the accommodation of Passengers & Merchandize only.

A. The Residence of the Superintendant.
B. That of his Deputy.
C. Strict Quarantine Quarters.
D. Quarantine of Observation.
E. Bason.
F. Residence of the Guard in Quarantine.
G. Insulated Tower for the Scrutinage.
H. Small Room for Visitors wishing to converse with persons under Quarantine.

a. a. a. &c. Apartments for Passengers & others performing Quarantine.
w. w. w. &c. Warehouses of a particular construction to receive the Cargoes of Vessels in Quarantine for airing & purification.
1. Burying Ground for Protestants.
2. Dº Dº for Catholics.
3. Dº Dº for Jews.
4. Dº Dº for Mahometans.
5. Circular Staircase leading to the Bason & Warehouses.
6. The Statue of Leopold.
7. Extensive Meadows for the operations of Disinfecting Goods &c.
8. Watch Tower guarding the entrance into the Harbour which is destined to admit Boats only.
9. Landing Stairs & communications between the Harbour & the Bason.
10. The Jetty.
11. Drawbridges.
12. Sea there chiefly Rocks.

A LETTER

TO THE RIGHT HONORABLE

F. ROBINSON, M. P.

PRESIDENT OF THE BOARD OF TRADE, AND TREASURER OF THE NAVY,

ON

THE PLAGUE AND CONTAGION,

WITH REFERENCE TO

The Quarantine Laws;

INCLUDING

The History of Plague conveyed direct from the Levant to five European Ports of the Mediterranean, within the last six years:

AND ALSO

A detailed Account of the Experiments made on the subject of Contagion in Plague, by DEIDIER, SAMOILOWITZ, DESGENETTES, Dr. WHYTE, Dr. VALLI, Dr. MACLEAN, and Mons. ROSENFELDT.

BY

AUGUSTUS BOZZI GRANVILLE, M.D.
F.R.S. F.L.S. M.R.I.

PHYSICIAN IN ORDINARY TO HIS ROYAL HIGHNESS THE DUKE OF CLARENCE, LICENCIATE OF THE ROYAL COLLEGE OF PHYSICIANS; AND PHYSICIAN-ACCOUCHEUR TO THE WESTMINSTER GENERAL DISPENSARY, &C.

LONDON:

PRINTED BY RICHARD AND ARTHUR TAYLOR, SHOE-LANE,

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1819.

LETTER

ON

The Plague and Contagion, &c.

"Διὰ τί ποτε ὁ λοιμὸς μόνη τῶν νόσων μάλιστα τοὺς πλησιάζοντας τοῖς θεραπευομένοις προσαναπίμπλησιν;"

"Why is the plague the only disorder, which more particularly attacks those who approach persons labouring under it?"

First Section of Aristotle's *Medical Problems.*

SIR,

WHEN those who hold responsible situations under government direct their attention, and that of the legislature, to an object of medical jurisprudence, involving some of the dearest interests and much of the welfare of the country; such as that which has recently been brought before the House of Commons; it is the duty of every professional man whose practical pursuits have led him to an acquaintance with the subject,

to come forward and join in the investigation. These are my reasons for addressing you on the present occasion; and my claims to being heard will, I hope, be found sufficiently detailed in this letter.

On the 11th instant you are reported in the public papers to have stated in the House of Commons, "that there existed sufficient grounds for the House to inquire into the validity of *the doctrine* of contagion and infection in epidemic diseases; as this doctrine had lately been questioned, and great doubts had arisen upon it, owing to some recent investigation." If his majesty's government think that any further inquiry they may institute, is likely to set the question at rest, I am confident that every means will be adopted to render that inquiry full and satisfactory, before coming to any determination.

Facts, rather than any other species of evidence, will of course be received before any judgement be formed; and where these are interpreted differently (for obstinacy or incredulity will often pervert the most gla-

ring facts) by different persons;—their respectability, their merits as professional men, and above all the intrinsic value of their works, ought to decide between them.

It is to be regretted, in this respect, that in the debate upon this point, reported in the public papers, no mention was made of the names of those who have questioned the validity of the doctrine of contagion, and thrown doubts upon it, during this recent investigation; though some may perhaps think it was due to the public at large, and to the Royal College of Physicians in particular, who, as guardians of the public health, proposed the existing laws of preservation from contagious diseases, and who still give their sanction to the doctrine of contagion. An appeal *from* such authority, *to* a select committee of the House of Commons, naturally excites an apprehension, however unfounded, that the advocates of non-contagion have made a greater impression on His Royal Highness's ministers, than the Fellows of the Royal College; and unless the names of our adversaries are made known, the public can-

not judge how far they deserve confidence. As yet, on the one hand, we have the opinion of a well-known body of learned, skilful, and experienced medical men, to whom the legitimate cognisance of such matters has always been intrusted; and only one or more anonymous persons on the other. What wonder then, that the public at large should side with the former, and be sceptical as to the efforts of the latter? It is true that the name of a most respectable physician was mentioned during the debate; but his evidence, far from shaking the validity of the doctrine of contagion, really confirms it; for he acknowledges having seen one instance of a fever being contagious; and it must not be forgotten, that the question at issue is not respecting the frequency, but the reality of contagion.

I have read, in common with other medical men, two or three works which have recently appeared in this country and America, written with the professed intention of overthrowing the doctrine of contagion:— an attempt which has been made before,

and has always failed; although made *conscientiously*, and by men of *known* eminence:—but these surely could not be the documents which gave rise to the doubts now said to exist on the validity of this doctrine. Perhaps, then, grounds for scepticism may have been discovered in the evidence given before the committee, appointed during the last parliament, to investigate the prevailing fevers of the metropolis. But even in that case Dr. Bateman's testimony, if truly viewed, was not calculated to induce a conclusion unfavourable to the doctrine of contagion. Besides, I am prepared to show that, even had the evidence respecting the typhus fever, which prevailed in London the last two years, proved that no contagion could be traced in that complaint; still the notions which medical men have of contagion, and contagious diseases, would remain "unshaken and untouched," as the Royal College of Physicians have very properly expressed it.

If I understand rightly the object of His Royal Highness's ministers in bringing for-

ward anew the question of contagion, upon which the final decision of every nation in Europe has long been passed, it is this; that if such a doctrine be proved erroneous, the quarantine laws, which emanated from it, ought to be abrogated; or that, if simple exaggeration in the tenets of such a doctrine be discovered, the said quarantine laws ought to be relaxed. Now, it is generally known that the laws of quarantine have been enacted principally, nay, I may say, exclusively, as a preservation from the contagion of plague; so that, before they are annulled, it should be proved that the *plague* is not contagious. To this simple question, therefore, ought our inquiry to be limited: Is or is not the plague contagious? and to this alternative I shall confine myself in the present letter: for even should it be *proved* before the committee that the yellow fever, for instance, or the Gibraltar fever, or the Cadiz fever, or even the typhus fever of London, are not communicable by contagion, still would it be as impossible as before to show the propriety of abrogating the

quarantine laws, or even of checking their severity.

In order to investigate this question more readily, and with a greater chance of being reciprocally understood, it will not be inexpedient to take our departure from some well defined data respecting the real meaning of words to be employed in the discussion, or great confusion will arise. I shall therefore take the liberty of stating, thus early—though it may appear somewhat pedantic—the real distinction between what is called contagion and any other modification in the development of diseases; and in the next place, why the plague must be considered as contagious. This I do the more willingly, because during the debate, said to have taken place on Sir John Jackson's motion, the words 'contagious,' 'infectious,' and 'epidemic,' appear to have been indiscriminately applied. Misapplication of words has been the source of all errors on this great and important question. A medical man is anxious to account for the great prevalence of any particular disease, and he

throws out a hint that the disease is contagious.—On this opinion being put to the test of the received notions of contagion, it is found to be erroneous and unwarrantable; from which it follows, that when the word contagious is next applied to any other disease, there will always be found persons ready to doubt the truth of the assertion. Let every disease, therefore, be marked by a proper distinction of its characteristic features, and no sceptical person will ever question the fact of its being governed by particular laws, and developed under particular circumstances.

A number of persons in a perfect state of health inhabit a particular spot; where one, two, or more of them fall ill of some specific disease. Others follow, and soon share the same fate: yet persons residing at a short distance, and even *occasionally* communicating with them, exhibit no symptom of any morbid alteration in their health. The inhabitants of certain districts in the Milanese territo y suffer from a particular disorder called the *pellagra*. None that inha-

bit that district escape it. Yet many pass through the country, and communicate freely with the affected inhabitants:—nay, the inhabitants themselves emigrate with their disorder into the neighbourhood; but it never spreads beyond its narrow limits! No person who has resided long at Aleppo has escaped the *bouton d'Alep;* yet at a very short distance from that town you may live without any apprehension of it, although you keep up a constant intercourse with the town and the inhabitants! In some parts of Poland a peculiar and disgusting complaint, affecting the hair, prevails among the inhabitants. The stranger who should *reside* amongst them will probably be affected by the disease,—yet none of the surrounding districts appear to suffer from it; nor has ever an individual, labouring under the disease, been the means of exporting it to another country! Cretinism and the *goîtres* are only found amongst the valleys of the Alps. That particular disease of the eyes, which has been distinguished by the appellation of Egyptian *ophthalmia*, prevails

permanently in that country only. The *cowpox* in England belongs more particularly to Gloucestershire. The fever prevailing in the neighbourhood of the Pontine marshes, where a peculiar *malaria* is known to exist, has never spread beyond the confines of its limited influence. Professor Percy states, that after the battle of Austerlitz in 1815, three hundred Russian prisoners were shut up in one of those numerous caverns which are found in Moravia, to keep them from cold. Towards midnight the sentinel was alarmed by shrieks, and fearful of a revolt, summoned the whole guard to his assistance. The door was instantly broke open; when forty of those unfortunate beings rushed out of the cavern, foaming at the mouth, and vomiting blood; the other 260 were found dead. A short time after, 225 prisoners who had been confined in dungeons at Moelk perished in the course of the night. Such is not the history of contagious nor of epidemic, but of ENDEMIC diseases.

A family is taken ill at a particular sea-

son of the year with any known disease. Another family or person is soon afterwards similarly affected: and many more follow under the same circumstances, until the greater part of the inhabitants of a town or district have, more or less, experienced the same morbid influence on their system. The same occurrence may take place in a prison,—a camp,—an hospital,—a manufactory,—a ship:—the disease goes through its various stages, often unchecked by any effort that can be made to extinguish it. It disappears at last, and for a time, generally indefinite, does not occur again; or it reappears at uncertain epochs: or another disease takes its place, following the same course, affecting equally the greater number of the inhabitants of the place or district where it appears, and terminating at last in the same manner. A catarrh is known to have affected, at particular epochs, two thirds of the inhabitants of a town. Carli in his History of Verona observes, that this disease had been so prevalent in 1438, that it overran the whole of Italy, and was

principally fatal to children and old people. The influenza which prevailed in London in the year 1782 was of this class. The measles will sometimes prevail among children generally, so as to affect the greatest number of them during a given time. In the winter of 1698 almost all the children at Berlin were affected at one time with this cutaneous disease. The croup, the hooping-cough, &c. are known to make their appearance, some years, in particular places, where they attack indiscriminately many individuals. The former became so prevalent in some of the French provinces about the years 1809 and 1810, that Bonaparte offered a premium of 12,000 francs for the best treatise on the disease. Sennertus states, that a particular malignant fever with spasm afflicted the bishopricks of Cologne and Westphalia in 1596-7. While Mantua was besieged by the French army in 1796, upwards of 25,000 citizens and soldiers perished from a peculiar fever: yet after the French army entered that town, no case of that disease occurred, either amongst the inhabitants or the gar-

rison. We read in the History of France, by Mezerai, that a peculiar sort of cough, with fever, attacked generally and indiscriminately all the old people in Paris, during the months of February and March 1414, and that the name of *coqueluche* was given to it, from a particular cap called *coqueluchon* used to keep off the cold air so pernicious in this complaint. The two famous assizes of Oxford and of the Old Bailey cannot be forgotten:—every person confined to a certain spot in the courts, during the trials, felt a peculiar morbid influence, and died: yet, although dispersed in different parts of the town, the individuals, so affected, communicated no disease to any one of their families; nor did any one living, at the time, within a few yards of the baneful spot feel its noxious influence. During the siege of Genoa in 1799, a petechial fever prevailed among the garrison and the inhabitants, the greatest part of whom felt its bad effects: some parts of the town seemed more exposed to the influence of this disease than others, and a very limit-

ed residence in those parts was sufficient to develop the disease in a healthy individual. The same occurred a few years later at Leghorn,—and again at Malaga; in both which places, sleeping one night only in the town was followed by the disease. His Majesty's frigate Gloire, to which I was appointed surgeon, after the event I am going to allude to, lost, while cruising in the West Indies, in 1809, upwards of 80 men of the same disorder; yet it was remarked that, notwithstanding the great number of sick, those persons who slept immediately under the hatchway, where a constant ventilation was going on, although within a few inches of persons ill of the same fever, were not affected by it. The sick were subsequently landed on the Saints near Guadaloupe, and the ship fumigated. The disease immediately took a favourable turn; the people recovered; and on the vessel putting to sea, none of the crew were again attacked by the fever. I need not, I am sure, call to your recollection what course the fever which has been called the Typhus, fol-

lowed both in England and Ireland, during the last two years. Particular districts of a town, and even particular parts of the same house, seemed more liable to the development of the disease than others. The same is recorded of those febrile complaints which prevailed in some parts of America within the last twenty years. Such again is not the history of contagious, but of EPIDEMIC diseases.

If, during the prevalence of epidemic diseases, the deaths be numerous, and the burials carelessly conducted; if there be a great want of cleanliness in the persons attending the sick, and the sick themselves; if the effluvia arising from diseased bodies are not quickly carried away by ventilation; and the healthy be forced to mix with the sick, and breathe the atmosphere in which they linger, the disease becomes then *infectious*; that is, it may be caught by a simple exposure to the ever pernicious influence of an atmosphere, in which diseased animal matter is floating in its minutest state of divi-

sion[1]. In all these cases, the disease is *spontaneous* in the first instance; and we call it *subsequent*, when its production seems to be the effect of the respiration of the same air in which many patients have already been confined. The disease, however, is the same throughout, and marked by the same specific characters. Thus, to speak of the fever at Malaga and Leghorn, or of the typhus fever of London, it may be stated without, I apprehend, any fear of contradiction, that their first appearance occurred in particular districts of those towns, where it attacked indiscriminately many individuals, whether they had communicated or not with each other; and that they afterwards

[1] One of the most enlightened physicians of Italy, whose instructions I am proud to acknowledge, Count Pietro Moscati of Milan, ascertained, that where patients are crowded together, there are emanations of a subtle animal matter, which he was enabled to collect and examine, by suspending, in places where the atmosphere was supposed to be infected, globes of glass filled with ice; around which the effluvia arranged themselves, and were condensed during the night.

spread to persons in health living within, and thereby forced to breathe the contaminated air of the diseased district. On the police and magistrates of health interfering, and separating the sick from the healthy, so as to leave a considerable space of ground between them, the *infectious* nature of the disease was somewhat checked. Nor did any person who, from exposure to the atmosphere of those parts of the town where the complaint was prevalent, had become ill of the disease, and who had left the town in that state, ever communicate the disorder to another person. This was more particularly illustrated in the case of a whole family at Malaga, which was suffered to withdraw to their country-house at Torre Molinos, within a short ride of the town, when under the full influence of the fever which they had contracted by a residence in the very heart of a diseased district. The greatest part of the family recovered; and although full and unrestrained intercourse between the sick and many of the inhabitants of the village had taken place during the progress of the

disease, no symptom of it ever occurred among them[1].

Having thus given you a definition of ENDEMIC or specific diseases, which are permanent in the people[2], or in other words, of diseases which are in their origin peculiar to certain countries, and to no other; and also of EPIDEMIC, or general diseases which may come upon the people[3], or in other words, of diseases which occasionally attack many individuals in the same place, at the same time, and in the same manner, whatever the nature of the disease may be;—the task of defining contagion is reduced within a small compass. I shall borrow a real example from the history of contagion, to convey a clearer idea of what is meant by this word, and with a view of giving an instance of that class of diseases to which the word *contagious* ought to be applied. On the

[1] See Palloni Osservazioni Mediche sulla Malattia Febbrile di Livorno, 1804.—Rasori della Febbre Petecchiale di Genoa, 1799.—Arejula and Desgenettes on the Fever which prevailed at Malaga in 1800 and 1804.

[2] Hell. ἐν δήμῳ. [3] Hell. ἐπὶ δήμου.

29th of March 1813, a vessel called the San Niccolò arrived at Malta from Alexandria in Egypt, where the plague was raging at the time the vessel left that place. During the voyage, two men fell ill and died. At the moment of his arrival at Malta, the master of the San Niccolò, together with the surviving part of the crew, appearing to be healthy, were allowed to disembark in the lazaretto, leaving their clothes behind, and undergoing several precautionary operations. The crew were provided with two separate apartments in the lazaretto, and the captain and his servant lived together in a third. The whole of them seemed to enjoy the most perfect health till the 1st of April, when the captain, while playing at ball, was suddenly seized with head-ache, giddiness, and other symptoms of the plague; and he died in the course of about thirty-six hours. The servant, who had assisted the two men lost during the voyage, and had subsequently attended his master during his illness ashore, was seized with similar symptoms at the same time; and died after a like in-

terval :—they were both buried in the lazaretto. This event created some uneasiness amongst the inhabitants ; but as the vessel had been sent back to Alexandria, and the most perfect health prevailed in the island, they soon began to congratulate themselves on their supposed escape. On the 19th of April a child died of a suspicious fever ; on the 1st of May, the mother gave birth to another child, who died immediately after ; and she herself expired before the next morning with tumours in both groins. A third child and the father of this unfortunate family were next attacked with the complaint ; and the latter, in particular, exhibited glandular swellings under the arms, and in the groins. The woman who had performed the office of midwife to the mother, on being visited by a person, her relative, on the 6th of May, was found to be dying of the same disease ; to which the relation also fell a victim on the 17th. Thus from one individual to another, all of whom, it is not difficult to prove, had reciprocally communicated with each other, the complaint spread

among the population, and ultimately committed those ravages which afflicted the island of Malta in the year 1813.—Such then is the portrait of CONTAGION; and the disease which follows such a course is CONTAGIOUS.

On the 29th of March Malta was healthy; no prevailing disease had been observed, nor had any particular circumstance led to a belief that any specific disorder would break out. A vessel arrives from a port where the plague was raging; two of the crew die; and a few days afterwards the plague attacks in succession all those who, from the first moment of clandestine communication with the strangers, were traced throughout the various ramifications of intercourse, attended by personal or indirect contact. There can be no scepticism on this subject.

The distinctive classification of those diseases which have been generally confounded under the appellation, indifferently used, of endemic and epidemic, infectious and contagious, being so far, I trust, clearly laid down; I shall take the liberty of en-

croaching a little further on your time, and endeavour to prove that the plague, for which the quarantine laws have been chiefly enacted, belongs to that class of complaints which, being like the above-described disease of Malta propagated by contact, can of course be imported from a place affected with it, into another where it did not exist before, by means of personal conveyance or that of merchandise.

But before I proceed further, it may perhaps be required of me, that I should state the grounds upon which I thus come forward as the advocate of contagion; and whence the information has been obtained, which must necessarily have served to form my opinion upon the subject. I shall therefore briefly state, that my claims to a knowledge of the important question of contagion are not exclusively derived from the observations of others; but from an actual and personal inquiry into the nature and mode of action of the plague, watched and studied in the country where it annually commits great devastation;—as well as from an ac-

quaintance with every recent case of *imported* plague—with the regulationsad opted to remedy the evils of such an awful visitation—and with the existing laws of quarantine and lazarettos amongst the principal nations of the south of Europe. In the year 1802, after having visited the northern ports of Italy, and being anxious to see the Levant, I accompanied Mr. Hamilton (now one of the Under-Secretaries of state for foreign affairs) on his second journey into Greece and other parts of Turkey; and when that gentleman returned to England, I remained for some time longer at Constantinople, mixing freely with the Greek and Turkish inhabitants during a season at which the plague was prevailing. I afterwards followed the Turkish fleet in its annual cruize through the islands of the Archipelago—visited the coasts of Syria and Egypt—and, finally, I had occasion to perform quarantine in two of the principal lazarettos in the Mediterranean. Another opportunity having occurred in 1814 of absenting myself from England, I availed myself of it to

examine other similar establishments, and particularly that of Leghorn, for the express purpose of investigating the important point of medical police which has been recently brought forward in the House of Commons[1].

That the plague is one of the most destructive disorders which can afflict a nation, is too notorious to need any further observations from me in this place. Its pernicious effects are such, that whole provinces and towns have, in ancient and modern times, been depopulated by it in the course of a few months. Its existence admits of no doubt; it has many strongly marked peculiarities, which distinguish it from every other known disease. We have now, therefore, only to consider how it originates; in what manner it is propagated; whether it can or it cannot be communicated, like the more familiar disease of the small-pox, by an individual affected with it, to another who is in a perfectly healthy state; and, finally,

[1] It was on that occasion that I sketched the plan of the lazaretto at the last-mentioned place, which I have annexed to this letter.

how far there is any evidence for believing that the disease in question can be transferred, by means of any given conveyance, from a place where it is known to exist, to another which is wholly free from it. To the investigation of these distinct points I shall now proceed, begging leave at the same time to add what information I possess on the principal lazarettos and quarantine regulations which I have been able to examine.

The plague, which in its progress is so distinct from any other disorder, offers, with regard also to its origin, some striking peculiarities. The origin of almost all diseases is either obscure or ambiguous; yet their existence has never been doubted, nor their peculiar characteristic features questioned. Even the loudest enemy of contagion has never ventured to dispute the contagious nature of the small-pox, although the real origin of that malady be not yet ascertained. With regard to the plague, it may probably have been in the first instance an *endemic* disease, peculiar to Africa or some

conterminous country, from whence, like the small-pox, syphilis, and perhaps others, in more modern times, it has spread to other parts of the world—thus assuming the decided character of a contagious endemic. And here it may not be impertinent to notice the distinction between *contagious* endemics and *infectious* epidemics, to which I have alluded in a former part of this letter; which distinction is this:—that whereas the air, and *not contact*, is the only vehicle for the spreading of the infectious epidemic; contact, and in *no case the air*, is the means by which a contagious endemic can be propagated[1]. The first origin of the plague, however, is far from being ascertained; although the above supposition, of its being peculiar to Africa, was an idea familiar to the ancients, and has been adopted by many modern writers.

But if the origin of the plague be obscure, its contagious nature is just the reverse.

[1] The communication of the plague by the *breath* of a person labouring under it, is merely a modification of *contact*.

Contagion is a mere mode of action, and not a *principle*, as some writers have improperly termed it. No abstract meaning can be attached to it; and when applied to medical questions, it merely expresses a fact drawn from experience and repeated observations,—that some few diseases, and those always the same, will affect a healthy subject on coming into indirect or personal contact with them: as is the case, for instance again, with the small-pox, the contagious nature of which cannot be denied. A recent author[1] has been at much pains to compose two volumes, for the purpose of telling the world, that, having set out for Turkey fully determined not to find the plague contagious[2]; he had, actually,

[1] See Results of an Investigation respecting Epidemic and Pestilential Diseases; including Researches in the Levant concerning the Plague. 2 vols. 8vo. By Charles Maclean, M.D. 1817.

[2] Read the whole chapter xx. entitled "Researches at Malta;" where the author, on being shown the fine lazaretto and the admirable arrangements made by Sir Thomas Maitland in that town, for preventing any further importation of the pestilential disease, expresses great

on his arrival there, *discovered* that no contagion existed in that disease[1]; and he concludes by ridiculing altogether the word *contagion*, calling it "an hypothesis, a phantom, a ghost walking in darkness." Yet it must appear rather singular that this writer,

regret that such immense sums of money should be wasted in establishments not only useless, but injurious to the best interests of humanity; although the author had not yet had any opportunity of seeing the plague, against which those establishments had been erected! Also his conversation with the "sprightly" Vicar-general and Colonel Rivaroli, in which he states having forborne any strong expression of his opinion, that the plague *was most certainly* not contagious, because he found those two gentlemen pretty well imbued with the vulgar prejudice of "two hundred and sixty-nine years" standing, that the plague was decidedly contagious.

[1] "After having verified to my entire satisfaction, in the plague, the principles (those of non-contagion) which I had previously ascertained to be correct as applied to other epidemic diseases," &c.; and yet a little before, the author had stated that "with all the advantages of his pre-acquired knowledge, he *barely* found it practicable in Turkey, at the great hazard of his life, to procure a confirmation of the validity, in plague, of the principles which he had in other countries ascertained to be true." Vol. i. p. 42.

who, as he tells us, had *pre-acquired* his notions of the non-contagion of the plague, in India, should not also have had leisure to discover, that an epidemic disease and the plague (which, by the by, he assumes throughout his work to be synonymous; but which, I trust, I have shown you in this letter ought never to be confounded) are as distinct from each other, as the diseases of India are different from the plague itself.

Another mode of attack against contagion is the assertion, that the fathers of medicine, Hippocrates, Galen, and Celsus, have never mentioned the word *contagion* in their works; from which it is inferred, that the notions now conveyed by that word were not entertained in those times, and must of course be of modern fabrication. But this sort of negative proof against contagion, as referred to the plague, is inadmissible; for in the case of Hippocrates, it is highly probable that he had never seen the disease. The word λοιμὸς occurs but once throughout his works; and then it is applied to a fever with tumours in the groins, which he supposes to originate in the air; but he gives no description of the

disease, although his accuracy and peculiar talents for such a task in every other instance are well known. It is true that he has been said to have treated, at Athens, the disease which raged in that city early in the Peloponnesian war; but this, according to Thucydides' description, was evidently nothing else than a violent and overwhelming epidemic, on which class of diseases Hippocrates composed admirable books; and of course it did not fall within his plan to describe the process of contagion, which, as it has been already shown, *never* accompanies epidemics. Celsus indeed has, more than once, mentioned the plague as a well-known disease, and not requiring a particular description: and although on these occasions he does not use precisely the word *contagion*, yet we may infer from one part of the process of prevention which he recommends, "*sub divo ungi*," that he considered the disease as likely to be caught by the skin, or, in other words, by contagion. The *sub divo ungi* has continued in practice, ever since, in many parts of Greece and Turkey, and is recommended to this

present day as an effectual means of avoiding the impressions of contagious disorders.

But by far the most absurd and groundless of all the attacks against the doctrine of contagion, is that in which it is considered as the invention of Pope Paul III., who wished thereby to frighten the fathers of the Council of Trent into a compliance of his desire to see that assembly transferred to Bologna [1]. Upon this occasion, however, the author's humour cannot be taken in exchange for proofs. By his very happy discovery, the doctrine of contagion is found to have existed just about 269 years [2]; and the

[1] See page 5, Prelim. Discourse, vol. i. of Dr. Maclean's work, and chapter iv. page 185.

[2] In the first volume of Dr. Maclean's work, page 180, I find the following assertion: "If I mistake not, the idea of contagion, as connected with *plague* or fevers, or epidemic diseases, is not to be met with previous to the sixteenth century." Why is the plague here associated with fevers generally, or with epidemic diseases, from which it is totally distinct, but for the purpose of fighting the notion of contagion in the latter, which is but a *shadow*, and thus sophistically applying to the former the conclusion, that epidemics are *not* contagious? Now we know that epidemics are not propagated by contact; and therefore, as the plague has

quarantines, lazarettos, and other *public police establishments*, to have been erected

been proved to be propagated by that, and by no other means, it cannot be considered as an epidemic. Consequently the arguments against the contagious nature of the latter, cannot apply to the plague. With regard to the meaning of the quotation itself, I have only to open the first books which happen to lie under my hand, and in which the point alluded to in that quotation is likely to be treated, to show that the idea of contagion applied to the plague and some other disease, is *not* the production of the sixteenth century, as Dr. Maclean has stated it; and that the word *contagio* is employed, throughout those works, in the present received sense of *con* and *tago* or *tango* to *touch*.

Columel. l. 7. c. 6. *post med.*: "Pusula, nisi compescitur intra primam pecudem, universum gregem, *contagione*, prosternit." Plin. l. 26. c. 1. "Quidam ex Asia, lichenarum *contagione importavit*," and in another place, l. 23. c. 8. ad fin. "Folia laurus *pestilentiæ contagia* prohibent."—But the testimony of Q. Curtius is even stronger on this subject: "*contagium* morbi etiam in alios vulgatum est." Curt. lib. 9. c. 10.—Even when writers had occasion to express the importation of an evil, it was not unusual for them to allude to the mode in which the plague is imported and propagated. Thus Sallust. in Catilina, c. 10. intr. says: "Post ubi contagio, *quasi pestilentia*, invasit."—But by far the most unequivocal example is derived from that beautiful description of the plague which raged at Florence in 1348, drawn up by Bocaccio, who wrote a few years only after that

about the same time! But in sober truth, nothing is further removed from the real fact than such an assertion; and as both sacred and profane writings have been misquoted in the endeavours to support it, I hope I shall be allowed the privilege of referring to those two sources of evidence, in order to prove that the idea of certain diseases being contagious has prevailed not *two*, but *ten*, *twenty*, and even *thirty* centuries at least. This mode of discussing

calamitous event. After giving an accurate enumeration of the symptoms of the disease, from which no physician could mistake it for any other than the plague of the East, the author proceeds to state: " E fu questa pestilenza di maggior forza, perciocché essa dagl' infermi di quella per lo *comunicare insieme* s'avventava a' sani, non altrimenti, che faccia il fuoco alle cose secche o unte, quando molto gli sono avvicinate. E più avanti ancora ebbe di male, che non solamente il parlare, e l'usare con gli infermi dava a sani infermità, o cagion di comune morte; ma ancora *il toccare i panni o qualunque altra cosa da quegli infermi stata tocca o adoperata,* pareva seco quella cotale infermità nel toccator trasportare."—Ploucquet, in his Literatura Medica, under the word *Contagio,* mentions a work of a *Le Conte,* published in 1534, that is, *before* the translation of the Council of Trent, on *contagion.*

the subject under consideration, is the only one admissible at the present moment; as no practical experiments, to prove the doctrine of contagion, can be instituted pending the inquiry of the committee; and we must rely on those which have been consigned to the pages of history.

The sacred writings furnish us with several very striking examples of diseases considered as contagious, or capable of contaminating others, when persons who are affected by them mix with the healthy. In the 13th chapter of Leviticus we find a description very nearly approaching that of the plague, with its tumours and swellings[1]; which, together with the leprosy to which it is assimilated[2], is declared to be uncleanly[3] and contaminating; and the priest is ordered to take the precaution of confining the infected persons for a certain space of time from all intercourse with

[1] "Homo cum fuerit in cute carnis ejus, tumor, vel scabies, vel macula."

[2] "*Secundùm* plagam lepræ."

[3] "And the priest shall pronounce him unclean."

other people[1]. Nay, this apparent dread of contagion is carried still further; for it is prescribed, that all garments and wearing apparel of such persons be held unclean[2], and as such they are peremptorily ordered to be burnt[3]. Furthermore, if we look into the 14th chapter, the notions of the possibility of a person, sick from an unclean disease, communicating his disorder to every thing in the house in which he resides, will be found even more evident[4]. And the precaution suggested in such cases, of emptying and shutting the house, of examining it occasionally, and cleansing it,

[1] "Includere faciet sacerdos plagam septem diebus." —"All the days wherein the plague shall be in him *he* shall be defiled, he is unclean, and he shall dwell alone, without the camp shall his habitation be."

[2] "Vestis autem, cum fuerit in eâ plaga, in veste lanea aut in veste linea, aut in stamine, aut in subtegmine ex lino vel ex lanâ, aut in pelle, aut in omni opere pelliceo," &c.

[3] "He, the priest, shall therefore *burn* that garment, whether warp or woof, in woollen or linen, or any thing of the skin wherein the plague is."

[4] "Then the priest shall command that they empty the house before the priest go into it to see the plague, that all that is in the house be not made unclean."

and purifying it, and washing it; nay of demolishing it even if necessary [1], will strike as in no ways different from all those measures of disinfection and precaution against contagious diseases, which successive governments and nations have adopted; and which are at this moment in existence with scarcely any alteration.

But apart from this analogical reasoning, there is a philological fact, which seems to have escaped the commentators, and which removes all doubt that the plague, or leprosy, of which Moses was speaking, in these two chapters of Leviticus, was considered as contagious, in the sense of modern times: for the very word by which the Hebrew term for the disease, נגע (*nenang* [2]) is render-

[1] "And he shall break down the house, the stones of it, and the timber thereof, and all the mortar of the house, and cause it to be carried forth out of the city into an unclean place."

[2] This word, which is interpreted by Parkhurst 'to touch,' and in Kal. 'to strike,' evidently implies the same idea as πλήσσω, 'to strike;' whence is derived *plaga*, 'a blow,' and also 'plague.' דבר (*dubber*) another Hebrew word for plague, means to '*drive*,' alluding, according to Parkhurst, to the effects of the disease in driving num-

ed in the Septuagint, ἀφὴ, bears no other interpretation than *tactus*, *contactus*, or contagion; and accordingly we find the sacred lawgiver using this word as synonymous with plague or λεπρα [1].

Similar passages, proving the antiquity of the notions of contagion, are found in Numbers and the First Book of Kings. —As to the unwarrantable attack made by the noncontagionists against the clergy of old and modern times, it is too absurd and betrays too much ignorance to deserve any remark. The clergy have always interfered in questions of medicine, particularly of medical jurisprudence, during the earliest ages; because, from their exclusive learning, they were deemed the fittest persons to be consulted on those subjects. At all events, their constant humane conduct on such occasions, and the personal sacrifice they made for the service of the sick, particularly during the middle ages, when pestilence was prevailing, show how unjustly they have

berless victims to the grave, and it is rendered in the LXX. αποστολη.

[1] Vide Biel's Thesaurus, and Constantine's Lexicon.

been accused of deception and fraud, by those who consider the doctrine of contagion as their invention.

When the Christian knights took possession of Jerusalem in 1099, it was ascertained that some of the reigning diseases were susceptible of being transferred from the infected to the healthy :—in consequence of which, a place for the reception of those who were taken ill was allotted out of the city to prevent the spreading of the disorder. And as, in all such diseases, *sores* of some kind or other were observed on the body of the patients, the hospitals, which were immediately founded for their exclusive reception, received the name of St. Lazarus; from which circumstance the name of Lazaretto was subsequently given to all similar establishments [1]. This salutary practice once imported into Europe on the return of the Crusades, (and it is a curious fact that the idea of insulation and confinement, as means of prevention, should come to us from the same quarter as the disorder itself,) its application was extended to all other

[1] See the Histoire des Croisades par Maimbourg; and the Abbé Guibert, Hist. Hierosol.

diseases marked by the same specific character of being communicable from one individual to another. Thus the *Ladreries* were established outside the gate of every town in France under Louis the Eighth, to the number of twenty thousand; and in the year 1496 we find an edict of the parliament of Paris, ordering, under pain of death, every individual affected by syphilis to retire into certain houses or hospitals, in order to prevent the *propagation* and communication of the disease to others [1].

The *positive* belief in contagion, and the consequent idea of seclusion as a means of preservation from it, can be traced to a much earlier epoch even than that of the Crusades; for we find them both explicitly mentioned in the acts and edicts of some of the Oriental Emperors during the 6th century, issued with a view of preventing the propagation of the plague. It is there enjoined to those who come from a country known to be infected, to repair to a parti-

[1] Consult the Dictionnaire des Sciences Medicales, vol. xxvii. and Astruc de Morbis Ven. lib. i. cap. 14.

cular spot, there to be watched for the term of FORTY DAYS, in order to ascertain whether they *brought* with them the *seed* of the disorder. Here then is the origin of the word *quarantine* ;—and here may we place the date of the first enactment of quarantine laws, under an impression that the plague was contagious. So that these laws, far from being of the short standing of scarcely *three* centuries, reckon a succession of more than thirteen hundred years [1].

But I will go a little further, and show that if the idea of contagion in some diseases, and the regulations respecting insulation and seclusion as means of preservation from them, are of a very ancient date; the institution of a magistracy to superintend both, with great powers for carrying the latter into execution, is no very recent occurrence. During the plague which raged at Venice in 1448, the first board of health was established by a decree of the senate, to inquire into the nature of the disease, and to adopt measures for preventing

[1] Consult Follerius, in libello pro Custodia Pestis.

its propagation. And to this institution we owe the enactment of laws which have been the ground-work of all subsequent quarantine regulations in every part of Europe[1].

I do not deny that the ancients, as well as many of the moderns, who have confounded together contagious and epidemic disorders, thought that the *semina pestis* were carried through the air from one place to another; or, in other words, that they considered the air to be the vehicle of the disease. But that they also considered the plague, the lepra, and in modern times the small-pox, syphilis, &c., to be capable of being communicated in the manner generally alluded to in this letter, no one can deny who has taken the trouble to read with attention the numerous accounts of the precautionary measures which have successively been adopted.

Having thus far proved, by irrefragable documents, that what has been called the "doctrine of contagion" is neither new, nor

[1] An abstract of the edict is given in the Regolamenti di Sanità, printed at Venice, edit. of 1805.

the invention of monks or the pope, I shall proceed to notice its application to the plague in a more particular manner; and with the assistance of history, and well authenticated recent facts, show the peculiar mode in which that dreadful disease is propagated.

The importation of the plague into the western parts of Europe can be accurately traced to the communications with the Levant; and its subsequent progress throughout the former countries can be proved to have been in proportion to the facilities with which the trade with Asia and Africa was carried on. The time at which the plague has appeared more frequently in Europe, will likewise be found to be that in which either the Saracens carried thither their victorious arms, or the Turks made frequent wars against the states of Christendom. Thus, with regard to the Levant trade, Venice, which took the lead in it, was the first to feel the alarming effects of the *imported* disease; Genoa followed; and Pisa came next in succession. Marseilles and Toulon having soon taken a share in that

commerce, partook also in its dreadful results[1]. Then, with regard to wars, few will be disposed to deny, that the plague which raged in most parts of Europe in 1450 was carried by the conflicting armies from Asia into Illyria, Dalmatia, Italy, &c. —that the plague which prevailed in Hungary in 1566 was carried thither by the Turkish army from Constantinople—and that the same undoubted origin can be ascribed to the plague which desolated Poland in 1623—and again Russia in 1777; not to mention many hundred more such cases.

This *personal* or indirect conveyance of the plague from the Levant into Europe, no writer can well account for, who thinks of nothing else but the air as a vehicle for it. Thus, one of the Italian authors who have written on the subject, says: "the countries in particular which are subject to the

[1] See "Medicine legale" par Foderè, vol. v. and vi.—Gastaldi, De advertenda & profliganda peste, &c.—Ozanam, Histoire des maladies contagieuses, &c. &c. Muratori, Del governo della peste.

Turks are, I should say, a perpetual hotbed of the plague,—for it scarcely ever leaves them; and most especially it rages at Constantinople and in Grand Cairo, so that it is extremely dangerous to trade with them: and indeed the latest plagues which have infected Italy, or any part of Europe, have either come over from Africa into the Christian islands of the Mediterranean, by the *carelessness* of individuals, and have thence penetrated to the terra firma; or they have come from the East into Hungary, Dalmatia, Poland, and other countries contiguous to Turkey, from whence they scourged various other parts of Europe [1]." Now, surely, if

[1] "Gli stati massimamente soggetti al Turco, sono, sto per dire, un perpetuo seminario di peste, perchè quasi mai non se ne diparte ella, e particolamente si fa sentire spesso in Constantinopoli, o nel gran Cairo d' Egitto, di modo che pericoloso é ogni commerzio con que' paesi. E appunto le più recenti pesti dell' Italia e dell' Europa, o son passate *per trascuraggine d'alcuni* dall' Affrica nell' isole cristiane del Mediterraneo, e poi entrate in terraferma; oppure dall' Oriente penetrando nell' Ungheria, Dalmazia, Polonia ed altri confini del Turco, hanno poi afflitte varie altre parti della nostra Europa."—*Del governo della peste.*

the air be the vehicle of the plague, as the noncontagionists will have it, the accusing people of *neglect* in suffering it to pass from Africa into Europe, would be unworthy the dignity of an historian. For who can prevent it?

But the contagion of the plague may be directly proved, 1st, By facts so recent that no excuse can be found for disbelieving them, as the noncontagionists affect to do, with all those which we read of in various books of a more remote date; 2d, By experiments; and 3d, By the striking effects which the laws of quarantine and insulation have produced in extinguishing it in every part of western Europe, where it has at times existed, and in preventing its propagation when imported.—I shall develop each of these points, and then conclude.

With regard to the first, I may again revert to the history of the plague *imported from Alexandria* into Malta in the year 1813, of which I have had occasion to speak in another part of this letter,—to that of the plague which from the coast of Dalmatia

was carried to Corfu in 1815,—to that which in the years 1815 and 1816 ravaged Noja in the kingdom of Naples,—to that of a similar calamity which visited a particular part of Cephalonia in 1816,—and finally, to the plague which was imported from Vallona in Albania, in October 1818, into the lazaretto at Venice.

The official reports I have been enabled to consult, leave no doubt that the disease which appeared in Malta in 1813 was the plague; and that the master of the vessel San Niccolò, and his servant, died in the lazaretto, of that disease: but no positive information exists respecting the mode in which the disease passed from the lazaretto into the town. Dr. Calvert, from whose able paper I extracted the short account I have given of the transactions at Malta, is strongly inclined to think that the disease was carried through the air, or, in other words, that the contagious principles of the plague (for he fully admits its contagion) travelled from the lazaretto to La Valletta, and lighted upon Salvator Borg,

the father of the unfortunate family who, as I have before mentioned, were the earliest victims of the disease [1]. But Dr. Maclean, who was at Malta two years afterwards, gives another explanation, in the shape of a memorandum, in which it is stated, that on the 14th of March (just fifteen days before the arrival of the vessel from Alexandria) "light showers fell in some parts of the island, which brought down a *reddish earth* with them;" and that on the same day there fell at Palermo much rain and *mud*; which, considering every thing, is a very clear way of accounting for the plague getting into Malta,—or, at all events, for explaining the "pestilential constitution of the air [2]." The people in the island, however,—and the people, generally speaking, are very correct in their observations on these subjects,—firmly believe, even at this day, that Salva-

[1] See Dr. Calvert's papers on the plague at Malta, in the 6th vol. of the Medico-Chirurgical Transactions.

[2] Read the chapter entitled "Researches at Malta," in the second vol. of the Results of an investigation respecting epidemic and pestilential diseases, &c. by Charles Maclean, M.D. page 9, &c.

tor Borg, who was a shoemaker, had purchased some linen to line shoes from a Jew who had received it from Alexandria. But Dr. Calvert calls this a story ;—and Dr. Maclean prefers his *mud*. An enlightened public will decide which of the three *stories* is most likely to be the true one : only it must not be forgotten, whichever explanation be adopted, that it has cost the lives of upwards of 6,000 inhabitants in a population of not more than 80,000 souls, and that in the short space of a few months [1].

If we turn now our attention to the history of the plague at Corfu, no difficulty will be experienced in accounting for its appearance in that island. The whole range of coast from Albania to Spalatro in the immediate neighbourhood of the Ionian islands was, in 1815, infected with the plague to a great degree. On the 26th of December of that year, it appears that a

[1] I have since learnt, from the perusal of official documents, that the *story* of Salvator Borg is the *true* history of the introduction of the plague into the town from the lazaretto.

malignant fever[1] broke out in the southern district of the island, called Lefchimo, containing a population of 7000 souls, living in twenty-two villages, and which formed about the fifth part of the superficial extent of the whole island. It soon exhibited symptoms of a highly *contagious* nature, as ascertained by the investigation of the British medical officers, and others, whose reports were forwarded to the director-general of the army medical board in London. Sir James Campbell (then commanding in the island), without waiting for any further development of the disease, determined to treat it with

[1] The precise mode in which the plague is introduced into any part of Europe must necessarily be difficult to ascertain. For as the act by which the introduction is effected is a crime punishable by death, it becomes the interest of all those concerned, to keep it a secret; hence the difficulty of its detection. We are loth to surrender our belief to the presence of any imminent danger, at all times; but particularly in the case of plague visiting the country we reside in. We prefer deceiving ourselves at first, rather than acknowledge the disease: and we call it a *malignant fever*, to quiet our fears; until we can no longer deny the evidence of our senses.

precisely the same precautions and measures as are adopted in cases of *confirmed plague*: and to this decision, as well as to the subsequent vigorous measures of Sir Thomas Maitland, the islanders owe their salvation; for it was not long before the disease was ascertained to be the Egyptian plague with glandular swellings, &c. The mortality during the first progress of the disease was in the proportion of 21 in 47 sick of the plague in the short space of eight days[1].

That the plague was *imported* into the town of Noja[2], all the official communications from the superintendant-general of health, now before me, sufficiently prove. The circular issued by the magistrates on that occasion leave not a shadow of doubt

[1] In another part of this letter, the official account of the manner in which the plague was introduced into Corfu will be found, as I received it, since printing the above, from a person holding a high responsible office in the island at the time.

[2] Noja is situated on the coast of Apulia, opposite the coast of Dalmatia, 25 miles from Bari, the chief town in the province of Bari, and distant about 140 miles from Naples.

on the subject: "Questa terribile sciagura (say they) non ha potuto venirci che dalla Dalmazia, e non ha potuto essere *introdotta* nelle nostre contrade che per mezzo de' contrabandi, e della pochissima vigilanza onde è stato fatto il servizio del cordone." The first link of the chain of contagion in this case was a poor labourer named Liborio di Donne, by whom the disease was soon communicated to several indigent families, all of which had been proved to have had intercourse, either with Liborio himself, or with some other person who had communicated with him subsequent to his illness. The disease was described, by the medical practitioners sent to Noja to examine it, to be a fever eminently contagious, accompanied by giddiness, delirium, head-ach, and diarrhœa; with a great prostration of strength, swellings either in the groin or under the arm; and the appearance of carbuncles, or pestilential tumours with livid spots, spread over different parts of the body. The disease terminated fatally on the 3d--5th, or at furthest on the 7th day. On the 28th

of December 1815 four had been attacked by the disease, three of whom died on the 29th : and this circumstance, together with the number of deaths which had occurred before that time, and the symptoms above described, left no room to the committee of health for hesitation. They therefore declared the disease at Noja to be the true plague of the East ; and dispatched circulars to all the ports in the Mediterranean, accordingly. On the 14th of January 1816—we collect from a table, which, together with a summary history of the plague taken from official Italian documents, I had the honour of communicating to His Majesty's principal Secretary of State for foreign affairs,—out of 293, who were taken ill in the small town of Noja after the 21st of November, 131 had died, of both sexes and of all ages. In two, only, the disease had been protracted to the 9th, and in one case to the 11th, day. All the individuals infected had communicated among themselves, being either relations or friends of Liborio di Donne, or connect-

ed with the former in some degree. In almost all these cases the swelling in the groin was present, and in some the carbuncles and pestilential tumours also.

It was during the decline of the plague which had raged in the maritime districts of Albania, in the *winter* of 1816, that by a fatal accident the disease was carried over from the main land to Cephalonia, another of the Ionian islands, being but a few miles distant from the coast. It is a well authenticated fact, that two poor peasants, natives of Cephalonia, were, at the time here alluded to, on their return from the continent, whither they had repaired, as usual, during the harvest season. On their way through *Arta* they fell in with the bodies of two men lying near the roadside, who had recently died of the plague. Ignorant of the cause which had occasioned their death, the poor labourers stripped the bodies of their jackets. These they concealed, in the first instance, and proceeded on their way to the coast to embark for Cephalonia. On landing in the island, they were placed under a quarantine of ob-

servation; but owing to the scanty accommodations then existing for enforcing the laws of quarantine, with respect to the numerous parties of the poorer peasantry of the island, who were in the habit of continually crossing and recrossing the channel for the purposes of subsistence, the two peasants in question were unfortunately discharged too soon. On being released, they repaired forthwith to their homes in the village of *Comitata*, in the district of Erisso, in the north-east part of Cephalonia. This happened in the month of May 1816, and a few days afterwards it was discovered that the plague had actually broken out in the village of *Comitata!* The two unfortunate peasants were the first who died of the disease; and next to them, all those who had communicated with them, in regular and well-ascertained succession. A formal confession of their having stript the dead bodies, near Arta, of their clothes, and of their not having been taken ill until they used the jackets, was made by the two first victims of the disease which, but for the prompt and vigorous measures of that distinguished

officer Sir Thomas Maitland, would have proved most destructive to the inhabitants.

As to the plague which appeared in the lazaretto of Venice on the 20th of October 1818, it is too fresh in our recollection to need being again detailed. The two dispatches of the British consul Mr. Hoppner, on the subject, short as they are, give a sufficient account of the transaction; and leave but little doubt that, had not the quarantine laws existed at Venice, or had they just been abolished, as Dr. Maclean would recommend *by way of experiment*, or had the magistrates of health been remiss in their duties, Venice, and perhaps the whole north of Italy, would at this moment be a prey to the plague: for to judge of the rapidity with which the eight individuals exposed to the contagion in the lazaretto, fell victims to it in succession, it is justifiable to believe, that, had the disease been suffered to spread, every town and village in the Peninsula would have felt its ravages.

The five preceding great facts of impor-

tation of the plague, which will now stand recorded for ever in the history of that disease, might be deemed more than sufficient to remove all doubts respecting the mode by which it is propagated. But as it is possible that some might think the evidence too scanty, I shall take the liberty of adding a few more authentic anecdotes in support of the "doctrine of contagion."

In the year 1803, a domestic of the late Marshal Brune, then French ambassador at Constantinople, (and whose family I had once or twice visited,) having been taken ill on his return from Scutari, and having exhibited symptoms of plague, I recommended his removal from the palace to a small house at some distance, where he was attended by an old Greek woman and a Jew servant, hired for the purpose. The patient died three days after his removal; the Greek woman was taken ill of the disease, but recovered; one of her children, who had only paid a visit to her mother on hearing she had been indisposed, caught the plague and died; the Jew ser-

vant died also, but not until he had contaminated the whole house in which he lived. From this house the contagion spread throughout the village of Terapià, which but a few days before had been quite free from the plague, and obliged the ambassador's family to shut themselves up within the gates of the palace. And here I may take the opportunity of stating, that the delightful villages situated on the north bank of the Bosphorus, are known to be, comparatively speaking, free from the plague, when the disease is raging at Constantinople; which may be explained by the considerable number of noble and wealthy Greek or Franks families who reside in them, adopting, invariably, the practice of confining themselves to their houses when the plague is abroad. In the family of Statachj, (the father-in-law of Prince Suzzo, and principal officer of one of the Wallachian princes,) in which I resided, this practice was never neglected; nor did ever a case of plague occur in it, even during the time when that disease was committing the

greatest ravages all around. Signor Gobbes, the oldest and the most respectable physician at Constantinople, at the time of my residence in that city, and first medical attendant of the Sultan, was in the habit of relating a variety of well marked cases, in which the propagation of the disease from one individual to another, and from one house to another, was distinctly and positively traced to contact with affected persons or infected goods. Toselli, who had been the first naval physician in the arsenal and on board the fleet for several years, used to relate how he became a convert to the doctrine of contagion, immediately after his arrival at Constantinople from Bologna, whence he had set out with a strong notion that it was unfounded. I have often conversed with him: and had I been an unbeliever, or an obstinate perverter of the occurrences which were *daily passing* under my eyes, I should have become a convert to his reasoning, supported as it was by numerous and indisputable facts. But the vain hope of discover-

ing that the plague is not contagious, has been the chief motive which induced many others, besides Dr. Maclean, to proceed to the Levant. Several young men flushed with that most pernicious doctrine of Brown, —itself a plague,—came to Constantinople from France and Italy early in the first years of the present century, with similar views; but either fell victims to their foolish temerity, or owed their safety to a prompt recantation of their principles [1]. There is, however, this difference between them and the author whom I have mentioned last;—that whereas the former, when they had narrowly escaped the fatal effects of their rash experiments, acknowledged their error, and bowed to a doctrine which had stood the test of centuries; the latter, on a similar occurrence happening to him, returned with the same erroneous principles which he had imbibed in India [2], and carried with him into

[1] I am happy to say that this absurd doctrine has since been entirely laid aside in the universities of Italy.

[2] See A View of the Science of Life, in a pamphlet of a few pages, *with a postscript*, published by C. Maclean, M.D. and Dr. Yates, in India.

Turkey. The lesson was lost upon the Doctor. But then again, there was the flattering prospect of standing *unique* in the midst of the vast tide of general opinion which would rush against him from every known part of the globe; and the very tempting idea of seeing the numerous and venerable establishments erected by the accumulated wisdom of ages, crumbling under the mighty shock of a non-contagionist! When we have lost the chance of gaining a great name by raising great and durable monuments, the only resource left, is to endeavour to destroy them.—But to return to facts. During the plague of 1812, which destroyed 300,000 inhabitants at Constantinople, the individual cases in which the effect of contagion was evident to every observer were so numerous, that their enumeration would comprise the whole history of that dreadful calamity. One, however, I must not omit to state, on the authority of Mr. Frere, secretary of embassy at Constantinople. Mr. B. an English gentleman now in England, with two others, and a servant, repaired, during the prevalence of the disease at Con-

stantinople, to St. Stefano on the Propontis. They abstained from promiscuous intercourse, as much as their daily occupation of shooting would admit of, and they gave similar orders to their servant. The plague was raging in the village, and the domestic, who served as a cook, caught the disease. Before it fully developed itself, he continued to dress the gentlemen's dinner, and to make their beds, while they proceeded regularly in their daily pursuit. The disease at length broke out, and the cook died;—one of the gentlemen caught the contagion, but recovered;—a second fell ill, and died,—while Mr. B. alone escaped. If the effects of contagion be questioned because Mr. B. escaped them, the same objection may be made to the theory of the *pestilential constitution of the air*. Why, if such a theory were the true one, did not Mr. B. feel the pestilential influence of the atmosphere as well as his less fortunate companions?—Nor were the well authenticated instances of a similar nature less numerous during the plague at Malta. Dr.

Calvert reports a few of them, some of which I shall relate. A man received a will from his mother who was infected with the plague; and on the following day he was himself attacked, and died. G. B. Doffen was attacked at a house opposite another in which a boy named Cessal had died suddenly the preceding day; and it was found that the former had received two eggs from the latter the day previous to his death. Three days afterwards (the 12th of August) the father of the boy died also. Again: a priest who had been in the habit of communicating with Cessal's family, sickened on the 13th, and died the following day. The surgeon who had visited Cessal the father professionally, on the evening previous to his death, was attacked on the 16th, and died two days after. These and other cases served to revive the contagion in the Valletta district, No. 8, where several of the guards and others were attacked.

While the plague was raging at Corfu in 1815-16, the following striking in-

stances of the contagion among many others occurred. They are given from the first authority.

One of the twenty-two villages of the district of Lefchimo had so far become free from the plague, after having lost the best part of its inhabitants by it, that it was supposed *pratique* would be granted in a few days. A man of the name of Ulassi, however, resident in one of the villages, still unclean, thinking himself seized with the disease, and fearful of being sent to the lazaretto, left in a clandestine manner his own residence, and contrived to enter the healthy village. The consequences of this unlawful and criminal step, were most fatal to the few inhabitants who had hitherto remained free from the plague;—for they soon fell ill in common with the offender, and many of them died. Ulassi recovered, was tried by a court-martial, and sentenced to be shot.—On the 27th of April 1816 the plague seemed to have ceased in Lower Lefchimo: no case had occurred for many days. But

on the 1st of May a person died of it, and it was traced to have been in consequence of concealment of the infected articles of a family which had had the disease. But the most remarkable case remains yet to be related;—it is in the official communications from that island, dated the 1st of April. No case shows more forcibly the virulence and the particular mode in which the contagious nature of the disease acts on the human system. "One of the villages had been upwards of thirty days clear of all plague, and it was ordered to be expurgated for the last time: when the officer in charge very properly proposed the expurgation of the church in which he himself had resided for upwards of two months. The people, however, represented to him, in the strongest manner, a wish that this should not be done by the regular expurgators, but by the priests belonging to the church. This was acceded to: but the priest had no sooner touched the clothes that had remained shut up since the beginning of the plague, than he was taken violently ill, and died

before he could be carried to the lazaretto —that is to say, *three* hours from the time he touched the infected articles!"

The plague at Noja, also, like that in every other country, furnishes numerous instances in which the justice of the universally received notion of *contagion* in this disease appears manifest. The town had been divided into two equal districts, for the better ensuring the observance of the regulations of segregation. One part of the town had kept comparatively free from the disease; when an unfortunate inhabitant of the other part, yielding to the strong conviction that to fly from the plague is its best preservative, eluded the vigilance of the guards, and penetrated into the healthy district. Forty-eight hours after this took place, the number of sick and consequent deaths became as large as that of the more infected district!—On the 12th of January 1816 fourteen individuals were attacked, seven of whom died the same day. They had all of them communicated personally with the diseased friends of Liborio!—On another

occasion a man, not suspected to have the plague, threw a pack of playing-cards to the soldiers on guard at the first cordon. The consequences were most fatal to the latter; for three of them died of the disease shortly after, and two more lingered with it in the lazaretto for some time. The transgressor was shot.

But the multiplying the examples could not make my argument stronger, if those I have now described fail to convince the few who may yet remain sceptical on this question. The fact is, that one case alone, that of Venice, is sufficient to mark the necessity of rendering the existing laws of quarantine in this country, even more vigilant, with regard to the Levant trade; rather than of entertaining the most distant thought of repealing or even relaxing them. Suppose them for one moment abolished, and the vessel which carried the plague into the lazaretto at Venice in October last, to have arrived in London, where the crew would have died either at an hospital or in some obscure lodging in the most populous part of the town;

—who can contemplate without horror and dismay, the terrible consequences which would have resulted to this overgrown city on the visitation of such a calamity!

We are now arrived at that part of my letter in which I proposed to refer to the actual experiments that have been made to set the question of contagion at rest.

It is not as a mode of cure, or of diminishing the virulence of the disease, that I shall speak of the experiments which have been made at different times with regard to the plague. It would involve us in questions wholly foreign to the present investigation, were I to pursue such a course. I shall therefore confine myself to a short narrative of the experiments themselves, as they stand recorded in the medical history of that disease.

Samoïlowitz was the first who proposed the inoculation of the plague, under an impression that the disease would be rendered milder, as is the case with the smallpox; and also because he supposed it not liable to occur twice in the same individual. The

plague which he had recently witnessed at Moscow had, however, ceased entirely before any proposition for its inoculation was made; so that it could not be carried into execution.

The next person who not only proposed, but carried into effect, the inoculation of the plague, was Desgenettes, first-physician to the French army in Egypt, and now a professor at the Ecole de Medecine at Paris. His object, in so doing, was to diminish the excessive terror which had pervaded the army on the appearance of the disease, and at the same time to inculcate the necessity of cleanliness, as a sure mode of preservation; for after having inoculated himself, both in the groin and armpit, with a lancet which he had dipped into the bubo of a convalescent at the hospital, he immediately washed the parts with soap and water. These are his words: "Ce fut pour rassurer les imaginations et le courage ébranlé de l'armée, qu'au milieu de l'hopital je trempai une lancette dans le pus d'une bubon appartenant à un convalescent de la maladie

au premier degré, et que je me fis une légère piqûre dans l'aine et au voisinage de l'aisselle, sans prendre d'autres précautions que celles de me laver avec de l'eau et du savon qui me furent offerts." The experiment was therefore imperfect, and does not prove that the disease was or was not contagious; though the decided opinion of Desgenettes on the subject is well known to have been for the former alternative [1]. It was about the same time that Bonaparte, to inspire his soldiers with courage under the trying circumstances in which they were placed at Jaffa, is said to have gone about touching the tumours of those unfortunate men afflicted with the plague, to whom, as a result of a conference with the same Desgenettes, laudanum was administered in hopes of shortening their sufferings with their lives. Many of them, however, escaped the fatal effects of both the opium and the plague; and flying from the hospital in which they had been left to perish by their comrades,

[1] Histoire medicale de l'armée d'Orient, par M. Desgenettes.

with difficulty and in the most wretched state reached Acre, where they joined the besieging army. It was during the continuance of the French army in Syria that Monsieur Pugnet, who wrote on the pestilential diseases of the Levant, had occasion to witness, and learn from undoubted sources, several striking facts, in support of his belief that the plague was contagious. Amongst several others I may mention the cases of eight Frenchmen at Caifa, who were successively affected with the disease, by conveying a pelisse to each other;—and again of those who by disputing the cast-off clothes of one of their companions, who had died of the plague, caught the disease;—or the case of four others, who were immediately taken ill on wearing the neckcloths of an apothecary, who had also fallen a victim to the plague [1]. It is a coincidence not less curious than true, that an English naval surgeon who was doing duty on board His Majesty's ship Theseus before the town of

[1] See Histoire des maladies pestilentielles &c. *passim* par Pugnet.

Acre, at the same time, should relate some cases of plague contracted by touching individuals affected with the complaint, or some of their wearing apparel [1].

It was in the beginning of December 1800, that Dr. Whyte, who had followed the Earl of Elgin, then ambassador at the Porte, as a volunteer physician, wrote to London that he was soliciting for admission into the plague hospital, with a view of proving that the plague was in no instance either a contagious or an incurable disease [2]. In that object he did not, however, succeed; and we are told that in May, June, and July 1801, he proceeded to make experiments in Aboukir Bay, by touching all those who were ill of the plague, and by inoculating himself in the arm, besides rubbing on his thighs some matter taken from the pestilen-

[1] See "An account of some cases of the plague, which occurred on board of a British ship of war, communicated by Dr. (now Sir Gilbert Blane) to the editors of the Medical Journal, vol. v. p. 538.

[2] See a letter from Dr. Whyte, dated 7th December 1801, from Constantinople, addressed to the editors of the London Medical Journal.

tial abscesses of a seaman. For all this, however, we have only the written assurances of the captain of a transport lying in Aboukir Bay. But even were it true to the whole extent stated, that in the course of that practice Dr. Whyte had not contracted the disease, such a result would not in the least invalidate our notions of the contagious nature of the plague; for on a repetition of the experiment of inoculation, more accurately performed, the Doctor felt the fatal effects of contact with the pestilential matter he had applied to his skin; and he died on the third day, of the disease he had thus contracted! Will the non-contagionist deny that the smallpox can be conveyed either by contact or engraftment, because in several hundred cases this operation has failed, until repeated three or four times?—Dr. Maclean is the only person who ever attempted to throw any discredit upon the fact of Dr. Whyte's death from the plague; and his reason for disbelieving it is, that according to *his own* theory "it is impossible the disease should ever be communicated by con-

tagion." But a theory wholly unsupported by any evidence cannot be admitted in opposition to a fact, for the truth of which the friends and relatives of Dr. Whyte, as well as the whole British army then in Egypt can answer. Even taking it for granted that Dr. Whyte had already inoculated himself *twice* (although the assertion is perfectly gratuitous, as it does not appear in Captain Gunter's certificates) with impunity; it does not follow that a third experiment should be attended by the same negative effect; for although the chances, in that case, would be, as Dr. Maclean has mathematically stated them, *two to one* against the malady having been produced by inoculation; still the event might occur notwithstanding the doctrine of chances, in which there is nothing positive, and the application of which to any event, furnishes us simply with its degree of probability, and does not refer to the possibility or impossibility of its taking place.

The views which Dr. Valli, an Italian physician of some repute, had formed, with

regard to the inoculation of the plague, were of a twofold nature. He believed in the first place, from analogies, that the disease when engrafted would prove milder in its progress, and seldom so fatal in its ultimate results; and in the second place, that if combined with the cowpox, it might produce a species of mixed disease, which would protect the individual, thus affected, from any subsequent attack of the plague.

Both these assumptions had for their principal ground the proposition, that the plague can only affect a person once during life: but the latter, in particular, could only have been the work of fancy; for no previous analogy could have led the professor to its adoption. Be it as it may, Dr. Valli arrived in Constantinople at the time of my residence in that city, and took up his abode with another Italian physician resident there, Dr. Pigioni, through whom he obtained the patronage of Prince Morousi. He immediately set about performing his experiments, of which I then heard him state the principal

outlines, and which consisted in making an incision in the left thigh, into which he introduced a mixture of pus from a plague tumour and from a cowpox vesicle; and in rubbing some of the same mixture on the fleshy part of the thumb. The operation was performed in the presence, I believe, of five or six physicians, of whom I was one, and in the plague hospital at Galata. Some slight indisposition, accompanied by sores, followed this experiment: but it should be stated also, that, besides having washed the parts almost immediately after, the doctor had forgotten to prove to us, by some positive evidence, that the morbid fluid with which he was about to inoculate himself, was really, as he pretended, a mixture of the plague and cowpox virus, but particularly of the former. As it was, none of those who had witnessed his operation believed that he had really inoculated himself with the plague; and one strong reason for this doubt, on our part, was found in his studiously avoiding all contact and intercourse with the few patients who were in the same

hospital, at the time, ill of that disorder; and in his keeping in a complete state of segregation. Dissatisfied with the little impression he had made on the public by his first attempt; yet perfectly convinced, as he repeatedly asserted afterwards, that he had, by his experiment, rendered himself invulnerable; he next entered the pest hospital near the Seven Towers, confident of his own security from contagion. He was soon, however, convinced of the futility of all theories when opposed to facts: for he had scarcely resided there a few days than he contracted the disease, during his intercourse with the sick in that establishment, but fortunately recovered. After the due performance of quarantine he again returned to the society at Pera; and such was his conviction that by his first experiment he had at least discovered a mode, if not of preventing, at least of rendering the plague much milder in its effects, that he solicited permission, and the means, which were readily granted by the Sultan Selim, to proceed to Asia for the purpose of collecting vaccine

matter; as it was known that in some of the plains near the Asiatic coasts of the Bosphorus, the peculiar disease of cows from, which that matter is obtained, was very prevalent. On his return, no further experiments were attempted: but what has never been divulged is the fact, that a pomatum, in which was a mixture of the matter from the plague and the cowpox, was sold by an apothecary at Constantinople to all those, who having been persuaded by the reports circulated, of the efficacy of Dr. Valli's nostrum, in exciting a mild attack of the plague, which was to preserve them ever after from any other, willingly adoped his propositions. This practice continued for some months, but in a very private manner, until even the sluggish vigilance of a Turkish police was roused by the innumerable cases of mischief it produced; and the apothecary and his drugs were treated in the summary mode of justice peculiar to that country—the one being put to death, and the other thrown into the sea. Whether the doctor had been or not privy to this pernicious

imposition on the public, I shall not take upon me to say; but I can vouch for the fact.

The next in succession to make experiments on the plague was Dr. Maclean. The result of his inquiry is even more satisfactory to the contagionist than any that has been before instituted. He proceeded to Turkey, as I have already mentioned, with a firm persuasion that the plague was not contagious. The Levant Company had furnished him with letters to our Ambassador, and the Minister for Foreign Affairs had added another on the demand of that commercial body. Shortly after his arrival at Constantinople, he entered the hospital of the Seven Towers on the 15th of August 1815, and immediately began his operations. In his visits to the few patients then in that hospital ill of the plague, he displayed great courage, kindness, and attention: in no instance did he shrink from contact either with them, or their sores, or their linen; the consequence of which was, that on Sunday the 20th of August he was seized with the malady, from which he recovered

but slowly. Whether the doctor's plan of treatment of the disease contributed to his recovery and that of some of the patients he had attended in the hospital, it is not the purpose of this letter to investigate. I wish to speak with the utmost respect of Dr. Maclean, whom I have met, at the house of a common friend, as a professional man of long and laborious experience; and can, therefore, join cordially with Sir Robert Liston in saying, that as far as the Doctor's inquiry refers to the endeavour of discovering a better mode of treatment of the plague than the one hitherto adopted, "his ardent zeal, his intrepid resolution, and the total neglect of all personal consideration he has displayed in the course *of his inquiry*, entitle him to some suitable reward." But I cannot agree with Dr. Maclean in the conclusion which he draws from his own experiment, that the plague is *not* contagious. How, indeed, can any person who has read the Doctor's own narrative, admit his conclusions? He enters on his experiment on the 15th of August, and scarcely five days

after that period the plague breaks forth on him with all its accompanying symptoms! Could any one say, "*therefore* the plague is *not* contagious?" But, indeed, Dr. Maclean himself has admitted, "that to be seized with the plague is an invariable consequence of residing in a pest-house in the Levant as an investigator[1];" or, in other words, that the plague invariably affects a person who exposes himself to its contagion; for the antiquity of which aptitude in the human body I beg to refer the Doctor to the quotation from Aristotle, prefixed to this letter.

The public journals have spoken in a very detailed, and I should say extravagant manner of the latest experiment made to ascertain the nature of the plague. I shall relate it very briefly, as I received it from an English gentleman residing in Constantinople, and holding a high diplomatic situation at that court. Mr. Von Rosenfeldt, a German by birth, who had lived some time at Constantinople, and was intimately persuaded of the contagious

[1] Page 144. vol. ii. op. citat.

nature of the plague, flattered himself that he possessed the means of *preventing* the effect of contagion. He therefore made proposals to the Austrian minister residing at the Porte, for making some experiments in the Greek hospital, on condition that a reward should be granted to himself and family, if he succeeded in his undertaking. The proposition having been accepted, he entered the plague-hospital on the 13th of December 1816, accompanied by Dr. Burghardt, who, after recommending him to the directors, withdrew. From that day up to the 12th of January 1817, it is stated that M. Rosenfeldt communicated freely with all the patients ill of the plague in the hospital—that he remained a long while in contact with some part of their bodies, or with their clothes—and finally, that he had thrust his finger deep into the suppurating tumours, and besmeared his arms with the running matter. Still his health remained sound; and considering, therefore, that his means of preservation were confirmed by those trials, he applied to be

released, and for the award of the premium from the Austrian minister. But M. Rosenfeldt was not destined ever again to quit the hospital. The answer from the ambassador was clear and positive: it purported, that as the term of forty days had, ever since the time of the Emperor Justinian, been considered by every lawgiver and physician, as the period during which the disease might break out from the first moment of contact with persons ill of the plague, or with any infected goods,—it was expedient that M. Rosenfeldt should extend his trial to that period, or lose the promised reward. This alternative induced that gentleman to remain. On the 29th of January he was seized with the plague, and he died about two o'clock in the afternoon of the 21st, after a residence of *thirty-eight days* in the hospital!—The secret spring of his conduct in this enterprise was discovered after his death. M. Rosenfeldt was an illiterate man, and one who had never acquired the slightest knowledge of medicine. It appeared that he had un-

bounded faith in certain charms and talismans, and the particular protection of some saints; and that upon the strength of this he imagined that he might live in the midst of pestilence, and touch the "gory sores" with impunity. His body was found covered with amulets and written hieroglyphics[1]. From the time he had remained about ten days in the hospital, M. Rosenfeldt showed evident signs of agitation and alarm. These same symptoms, but in a much stronger degree, were indeed exhibited by Dr. Maclean, as related by himself, after a few days residence in the hospital at the Seven Towers. The priest and every servant appeared to him to have conspired against his life. In every one who

[1] Amongst the experiments instituted for the purpose of ascertaining whether the plague be contagious, may be reckoned those made by Mons. Deidier, inserted in the Journal des Savans, Mars 1722, pag. 541, and entitled "Experiences sur la bile des pestiferès," &c. It appears from them, that the bile drawn from the gall-bladder of subjects who had died of the plague, and with which dogs had been inoculated, never failed to produce that disease with its accompanying tumours, &c.

approached him, or asked after him, or spoke near the door of his chamber, he saw a midnight murderer, commissioned like Rugantino (to whom he compares them) to cut his throat. Nay, he even was seized with such a sudden terror of immediate death, when the Greek monk Nioffitè *offering to embrace him, in a pretended fit of enthusiasm, attempted to introduce something deleterious into his ear, that he thrust him from him with some violence, and sent him reeling head-foremost down stairs*[1].—Dr. Valli, whom I visited twice during his first experiment, was equally the victim of incessant terrors, and an extraordinary agitation of the mind, as he himself describes in his "Giornale della peste di Constantinopoli:" and it is curious that all these nervous symptoms should very often precede, as they did in the three foregoing cases, the development of the malady in almost every individual.

From this part of my letter we collect,

[1] Read, "Researches at Constantinople," chap. xxv. and xxvi. in the work so often quoted.

first, That the non-contagionists can find nothing in the experiments I have related, in support of their tenets: and secondly, That if the experiments prove any thing, it is the *contagious* nature of the disease; since every experimentalist has felt its effect on exposure to contact, and two out of the four died of it. But fortunately for the friends of humanity, and for those who uphold the established laws of preservation from *contagion*, the reality of this mode of propagation of the plague does not depend upon the crude conclusions drawn from a few experiments. The annals of history swarm with the testimonies of contagion; and this letter has furnished many more, equally authentic, and entitled to the serious consideration of the legislator.

I have promised to say something of the effects which the quarantine laws, and the methods of insulation and segregation, have had in checking, extirpating, and preventing the introduction of the plague: and I shall now perform my engagement, preferring always facts of a recent date, and within

the reach of every person desirous of investigating their truth and reality. Those of a remoter period I shall only allude to, as they may seem to fall within the plan I have set down for the present investigation. If by this third species of argument I should succeed, as I trust I have done by the two former, in proving that, by preventing direct or indirect *contact*, the plague has also been prevented, its contagious nature, or in other words, the "DOCTRINE OF CONTAGION" will have been demonstrated *verbis et actis*, in all its bearings, and by such a mass of evidence as could not fail to obtain a verdict from an unprejudiced and impartial jury.

It has already been shown that the laws of segregation, as a means of preventing the importation of the plague, were first enacted under the emperor Justinian in 542[1]; when persons arriving at Byzan-

[1] Another early instance of the precept of insulation in cases of plague, may be quoted from the rabbinical author cited by Castell, under the word דֶּבֶר, *pestis*, in this maxim "Tempore pestis *collige* pedes tuos; *h. e.* contine te

tium, from places where that disease was known to prevail, were forced to remain under the surveillance of proper officers for the space of *forty days*, before they were allowed a free communication with the inhabitants. From that time, the practice of segregating the crews and passengers of vessels coming from the East, obtained progressively in every civilized state in Europe; but particularly in the ports of the Mediterranean. In 1448, the quarantine laws were promulgated at Venice by a decree of the senate, " per impedire il progredimento della contagione da un individuo malato ad uno sano," after the plague had been raging in that city, imported from the East: and the same were adopted and put in force, first at Marseilles, and next in Tuscany and Genoa; not only from a conviction that by such means a recurrence of the plague might be avoided, but also from a knowledge of the fact, that the French and Italian

domi :—tempore famis disperge pedes tuos; *h. e.* discurre hinc inde ad comparanda necessaria."

merchants residing at Alexandria and Cairo, by shutting themselves up in their own houses on the first appearance and during the prevalence of the plague, always escaped that disease.

It was high time that some measure should be adopted to check the great prevalence of a disease which seemed to baffle all calculation respecting winds, seasons, and the various states of the atmosphere. As long as the notion of "a pestilential state of the air" was allowed to prevail over the more sound one that contact with infected persons and infected goods were the only channels for the propagation of the plague,—this disease was suffered to visit at various periods all the ports in which a trade was carried on with places infected with it, and all the principal inland towns which drew their commercial supplies from those ports. Thus, not to mention many other examples, it was by a vessel from Spain laden with merchandise, which the inhabitants bought, that the plague was carried to Marseilles in 558. The ravages began in the family which

had been foremost in the purchase; all the members of it died,—next the relations of that family; and soon a dread of approaching those ill-fated persons seem to have suspended, for a time, all intercourse with the first individuals affected, and with it the disease was also suspended. But on the goods of those who had died being sold, the plague reappeared; and the inhabitants who had by that time returned from the country, whither they had taken refuge on the first breaking out of the disease, fell now in numbers the victims of its fatal effects [1].

In the month of December 1570, a ship, whose crew was infected with the plague, arrived at Siacca in Sicily from Tunis, when the officers of health very properly refused her admittance. The president, Don Carlo d'Arragona, who then governed the kingdom, hearing of the circumstance, censured the officers, and ordered the ship to be received into the port of Trapani. The consequence was, as is natural to expect,

[1] See Gregoire de Tours and Aimoinus De Gestis Francorum.

that the disease was communicated to the inhabitants of that town [1].

Between the year 43 B. C. and 1720, A.C. the plague raged about twenty times in the ill-fated town of Marseilles, the emporium of the Levant trade; and in fifteen of those cases the importation from the East has been clearly proved [2]. In the year last mentioned the disease prevailed so violently in that town that it destroyed upwards of 40,000 inhabitants. It was imported from the Levant; and the first who died were the guardians of health, and the servants employed in purifying goods [3].

Vessels which had sailed from Turkey in the year 1347, carried the plague into Sicily and Genoa. From thence all the towns of Italy, which drew their Oriental supplies from those ports, became infected [4]. Dr. Hodges states that the last plague of London, in 1665, had

[1] Parisi, lib. vii. c. 50.

[2] Read Foderè's chapters on plague and contagion, in his admirable treatise De la medecine legale.

[3] See Relation historique de la peste de Marseille en 1720.

[4] Muratori Del governo della peste, p. 3.

been brought from Holland, in a bale of cotton from Turkey.—In 1813 the plague at Malta was imported, as we have seen, from Alexandria, in a vessel, and communicated from it to the town of La Valletta by means of infected linen [1].—In 1815 the same disease developed itself at Corfu, by the distribution of a number of skullcaps of red cloth, left in the island by the captain of a vessel from Tunis, which had put in in great distress at Lefchimo. The contagion was traced in the clearest manner: first, in the village, where the box had been left; secondly, in the family who had charge of it; and next, to all the friends of the family residing in that same village, and in four others [2].—The magistrates at Noja traced the importation of the plague, which destroyed the whole population of that town in 1815-16, to smuggled goods from Spalatro [3].

[1] Official reports,—and Sir T. Maitland's dispatches

[2] Note communicated by a gentleman holding at the time a high situation in the government at Corfu, but at this moment in London.

[3] See Giornale del magistrato di sanità stabilito a Napoli, per investigare l'origine e la natura della peste di Noja 1815-16.

—The village of Comitata in the island of Cephalonia was suddenly afflicted with the plague in May 1816, from the importation of two infected jackets.—The plague which was observed in the lazaretto of Venice in October 1818, was clearly traced to a vessel from Vallona in Albania, where the disease was prevailing.

But it would be needless to repeat all the well-ascertained examples of imported plague, which might be quoted on authorities not only as good as those which the non-contagionists usually bring forward in support of their *theories*, but also much more numerous; and many amongst them persons of the first rank in society now living, and who had an opportunity of acquiring the certitude that the plague was contagious, from actual observation, and from circumstances forming the strongest evidence that can be obtained on the subject.

It was not, however, before the end of the 16th century that the quarantine laws were vigilantly put into execution in the ports of the Mediterranean; namely, those

of Italy, France, and Spain: and it ought to be remarked, as an undeniable proof of the efficacy of those laws, and at the same time of the contagious and not epidemic nature of the plague, that from that time, although so common in those ports before, the disease almost suddenly disappeared; nor did it again occur, except in solitary instances, and then only in consequence of a well-ascertained violation or non-execution of the laws of quarantine and segregation. A remarkable example of this occurred in the plague which proved so fatal to the inhabitants of Venice in 1535, eighty-seven years after they proposed the first model of quarantine regulations: and a still more striking instance is found in the history of the Marseilles plague in 1720, to which I have already alluded. I cannot help borrowing the descriptive language of Papon[1], in giving an account of that calamitous visitation:—"Nothing

[1] Relation historique de la peste de Marseille; and Histoire de Provence, liv. 15, p. 172, &c. Also Foderé's Medecine legale, vol. v. p. 402.

could be more regular than the seasons in 1720, the weather perfectly fine, the provision in great abundance; Marseilles was in its splendour, free from every apprehension from contagious diseases, when the vessel of captain *Chataud* came in from Seyde and Tripoli, where the plague was raging, richly laden on account of several French merchants. This occurred on the 25th May 1720. The quarantine was not very strictly performed on this occasion, and the passengers were suffered to take away their own apparel before they had been purified,—when, on a sudden, death spread desolation in every quarter of the city, beginning first in the lazaretto. From Marseilles, in consequence of the numerous persons who fled from it, when already affected by the disease, the pestilence was communicated to twenty-three different towns and districts, between May 1720 and January 1721, without being in the least checked either by the heat of the summer or the cold of the winter. Of 247,899 in-

habitants exposed to the contagion, 87,659 perished, from May 1720 to June 1721, at which time the disease ceased for want of victims; nor did it spread beyond its former confines, thanks to the severe execution of of particular laws enacted during the worst time of the contagion."

"In comparing the frequency of the plague during the last centures," says Foderé [1], "with the kind of security in which we now live; we cannot but look upon the distinction between those diseases which are produced by contagion, and those that are not so, as one of the most precious discoveries to humanity, and as the greatest step towards the attainment of good, by means of accurate observation. The same language applies to the institution of those measures of prudence, which, when rigorously attended to, are sure of preserving us from contagious diseases."

From the calamitous period of 1720 the plague has never made its appearance at

[1] See his Traité de medecine legale, vol. v. 1808.

Marseilles, where the quarantine laws are most rigid, and its lazaretto a model of what those establishments should be ; although the intercourse with the Barbary coasts and the Levant is even more extensive than in former times, when the plague, as we have seen, was so frequently imported into that city.

Since the establishment of quarantine laws, no case of plague has occurred in England for the space of a hundred and fifty-four years ! Are we tired of this species of security, that we are now disputing the validity of the "doctrine of contagion ?"

It is evident that if the *plague* depended on the specific constitution of the atmosphere, and other inherent local circumstances, at the place where it prevails, no measures of quarantine could prevent the appearance and development of the disease. A climate which has been unhealthy and productive of the plague, as Drs. Maclean, Mitchell and others have asserted, as for ex-

ample that of Marseilles, Venice, Genoa, Leghorn, London, &c. for many centuries, could not have been rendered healthy by a few decrees of the magistrates at those places. And even supposing, for a moment, the strange idea to be entertained, that laws such as those of quarantine, which have reference to any thing rather than to climate, should have had the property of purifying the climate and topographical situation of many seaport towns previously exposed to the plague;—how happens it, that the inland towns of Italy, Spain, France, and other countries, which had equally, and as frequently suffered from that disease, before the enactment of those laws—have been altogether free from it, since they have been put into execution [1]?

[1] One of the numerous absurdities into which the non-contagionists have fallen from adopting the fanciful theory of the "pestilential constitution of the air," is their being obliged to account for the appearance of the plague in any place, by a recourse to the hacknied expressions of "peculiarities of climate," "influence of particular seasons," &c. Now it must have struck every one who has perused this letter, that the plague

But the subject is now coming to a very narrow point indeed; and when the non-contagionists shall have answered to the above dilemma, they will next have to explain why, if the climate be really changed, cases of plague should occasionally appear in the *lazarettos*, or in vessels from the Levant confined by quarantine, both at Marseilles and Leghorn[1], and as recently

seems to respect neither climate nor season. Thus it rages in Egypt in the early part of the year; at Smyrna during the summer; at Constantinople during the winter; and may be found in each of these places throughout the year. Then again, with regard to the more specific and recent cases of plague related in this letter: although the climate of Malta, Cephalonia, Corfu, and Noja be in every respect similar, yet the plague broke out in the former of those places during the summer; in the second during the spring; and in the third and fourth during the winter! Nay, more: we collect from the meteorological observations annexed to the official records of those calamities, that the weather was dry and the wind easterly at Malta,—that it rained, was cold, and the wind blew northerly at Corfu and Cephalonia,—while a succession of fine weather prevailed at the time the plague was committing those ravages, by which Noja was destroyed!

[1] Foderè and Nacquart both state that the officers of

occurred, at Venice [1]; where by the measures of strict insulation they are prevented from spreading further.

The efficacy of the laws of non-communication, in impeding the progress of the plague, when imported from the Levant or the coasts of Africa, being thus proved by undeniable and recent facts, no difficulty will be found in adducing examples, where insulation and segregation have succeeded also, in putting down the disease when it existed, or in preventing it from spreading to other places. The town of Conversano in the kingdom of Naples, was afflicted with the plague while the see of Rome was vacant on the death of Alexander VIII.;

health at Marseilles, Leghorn, and Toulon, assured them that, cases of plague break out occasionally in the lazarettos of those towns, after the arrival of vessels from the Levant, and that the disease is extinguished immediately by vigilant segregation. *Traité de medecine legale* 1808; and *Dictionnaire des sciences medicales* 1810. General Spanocchi, governor of Leghorn in 1814, assured me that two cases of plague had shortly before occurred in that lazaretto.

[1] See the Consul-general's dispatches, 1816.

yet, none of the nearest neighbouring villages caught the disorder, owing to a strict insulation of the infected city [1]. The same may be observed of the plague which raged at Milan, Mantova, Padova, and Venice, from which latter place it had spread to the former in 1576. On those towns being immediately segregated, when the disease first appeared, the contagion was not conveyed to any other part of Lombardy [1]. Treviso and Ferrara in particular offer similar striking examples of security during the plague, which raged all around them in the north of Italy in 1630; and it is remarkable that the disorder, which, on this occasion, was fast travelling towards the southern extremity of the Italian peninsula, and threatened to infect Rome from the great difficulty of preventing persons leaving their native town, after the appearance of the disease, was suddenly checked by the establishment of a strong cordon on each side of a river near Faeuza, where the governor himself became one of the most ac-

[1] See Muratori *Del governo politico della peste*, 1722.

tive superintendants and magistrates of health. The history of the plague at Malta in 1813 is full of proofs of the efficacy of segregation in keeping certain parts of the Islands free from the disorder, and in preserving from it particular streets, houses, and even rooms in each house [1]. The same may be said of that which raged at Corfu two years afterwards: the contagion never having spread beyond the cordon established immediately after the proclamation declaring that the plague was prevailing in the district of Lefchimo [2]. At Noja similar measures saved from contagion, not only another town within two short miles of the former, and on the same line of the coast; but also succeeded in keeping part of the infected city, in which no case of plague had occurred, entirely free from it, while it was committing devastation in the other; until an individual, affected with the disease,

[1] See Dr. Calvert's paper before quoted; Mr. Thomas's official report; and Sir Thomas Maitland's or Lieut.-general Sir Hildebrand Oakes's dispatches.

[2] See Sir Thomas Maitland's dispatches.

contrived to elude the vigilance of the officers, and penetrated, as before stated, within the healthy district[1]. But in the plague of Cephalonia, the fact that segregation and insulation are the only means of putting down the contagion appeared most evident. On the plague having broken out at the village of *Comitata*, the most decisive measures were instantly adopted for extinguishing the disease in its birth. The district, and the villages within it, were invested and separated by proper cordons of troops, and the system of non-communication and segregation most vigorously enforced by the proper officers and other persons well skilled and experienced, in all the details of a service of such paramount importance. As soon almost as the regulations of non-communication were in activity at *Comitata*, the contagion DECLINED; having been exclusively confined to those persons who already had had contact and material communication with the plague pa-

[1] Read the *Giornale* &c. published by the magistrate of health.

tients, or the infected articles belonging to them. The disease never extended beyond the cordon. The persons who died of it were few; a general expurgation ensued, and the segregated district was, within a few months after the contagion appeared, restored to *free pratique* [1]. This is the third plague which Lieut.-general Sir Thomas Maitland has succeeded in completely stopping and in preventing its propagation, while commanding in the Mediterranean; and no measures have ever been enacted better calculated for that double purpose, than those which, even at this moment, exist in the different Islands under his government. The plan of *insulation*, which Sir Thomas Maitland has adopted, founded on the firm conviction *of the validity of the doctrine of contagion*, is so admirably conceived, that were the plague again to be imported into Malta, for instance—in less than a week every district, street, and house, in that

[1] For this account, and one or two more facts, I am indebted to the kindness of my friend Mr. Meyer, late Government secretary in the Ionian Islands.

town would be respectively segregated, so as to place each individual beyond the contact of every other. This is the system which Dr. Maclean has stigmatized as not only extravagant, with regard to the expenditure of money it requires to put it into force, but also as injurious to humanity[1]!

If the plague were a spontaneous disease, and followed the same course as epidemic diseases, no such results as those I have just detailed could be obtained from segre-

[1] Some time in 1817 the French minister of the interior addressed to the faculty of medicine of Paris, certain questions respecting the real nature of the yellow fever of America, principally with a view to ascertain whether that disease depended on contagion, as some writers have stated; and in that case what precautions were necessary to prevent its introduction into France. The faculty of medicine appointed a committee, composed of the *doyen*, and the two professors of physiology Chaussier and Hallé. Their report is now before me: and in the course of it, they incidentally speak of the plague, and the measures of precaution hitherto adopted to prevent its importation from the Levant. It may not be improper to state, that their notions of contagion with reference to the latter disease, are as orthodox as ever; and that they conclude by recommendiug vigilance, severity, and *segregation*.

gation and quarantine. If the air were the vehicle of the plague—how could we conceive that the disease should ever cease? How could it be imprisoned within the walls of a town or a lazaretto? The insulation of those infected, could not prevent the spreading of the contagion! Doctor Marten would not have succeeded in preserving the Hospital of the Orphans, placed in the centre of Moscow, from contagion, during the great plague which raged in that city[1]: nor could the French military hospital at Cairo, established on one of the islands of the Nile, have been kept entirely free, as it was, from the plague, when that disease was raging in every other hospital in the camp, and in the towns of Alexandria, Rosetta, and Damietta[2]. Why, also, should the Franks constantly escape the plague, from merely shutting themselves up in their own houses at Cairo, Aleppo, Smyrna, Constantinople, &c.; if the disease be in the air[3]? Nay

[1] Maertens, *Histoire de la peste de Moscow*, 1777.

[2] See the Courier de l'Egypte du mois Pluviose, An. 9.

[3] The *Franks* at Cairo keep strictly and generally to their houses, from November till the latter end of June,

more; if the air be the source of infection, can it be conceived that the plague should be committing great devastation within the walls of a besieged town, while another totally distinct fever (the ship fever) prevailed on board the besieging fleet, which for upwards of four months during the summer kept cruizing before it, and approached it daily within gun-shot, without any other communication? Yet this was the case in the Turkish fleet, at the siege of Acre in 1804, under Cadir Bey the Capitan Pacha, who was ordered to reduce that place, then in possession of a rebel, the favourite of the Djezzar Pacha, who had recently died on his way to Egypt. Being on board the ship of the Chiaïa Bey at the time, I had ample opportunities of making the preceding observations.

Indeed the notion of contagion, with respect to *plague*, far from being shaken by the attacks of a few individuals who

at which time it is believed that the plague ceases. They then appear in public to sing a *Te Deum* on St. John's day.

have written against it at different times, is gaining ground so rapidly, that even among the Turks themselves, fatalists as they are, measures of insulation are occasionally adopted. Thus when the same Capitan Pacha, whom I have just mentioned, reached *Stancho* in 1804, on his way to Cyprus and Syria, finding that the plague was raging in the former island, and fearful that if it got on board the fleet, his lucrative cruize of six months might be miserably shortened, ordered, in the most peremptory manner, that no person should go ashore; and he himself, with a few officers only, landed on the beach, where he received the usual number of piastres as a tribute, which were previously dipped into the sea; and weighed anchor the same evening of the day of his arrival. While the districts of South Albania were visited by the plague in 1816, and that disease raged chiefly in the three populous townships of *Paramathia*, *Margariti*, and *Arta*, the vizier, Aly Pacha of Yannina, endeavoured to arrest its progress by adopting the measures which he

had pursued with much success on former occasions, when his territories had been afflicted by a similar calamity. He caused strong cordons of troops to be formed around the infected districts, and then insulating the houses, segregated the families, as far as his means enabled him to effect that object. His highness thus succeeded in saving his capital and every other part of his dominions, which were not enclosed within the line of segregation.

One argument more on the part of the noncontagionists now only remains to be answered. They assert that the Dutch, who at one time carried on the most flourishing trade with the Levant, never had the plague, notwithstanding the total absence of all quarantine regulations. This is their sheet-anchor argument, their last resource; and, they have hitherto availed themselves of it not unsparingly. Why it has not been answered before, cannot be imagined; but from the records I have consulted, and from a conversation with a person holding a distinguished situation under the present

Dutch government, I am enabled to give the following explanation of this apparent anomaly, and thus, I hope, disarm completely the enemies of some of the most useful and beneficial institutions to humanity.

The Dutch republic, from the time of their embracing the Levant trade in 1612, were constantly at war with the Barbary powers; and thus with regard to that nation, one great source of importation of the plague was done away with, from the impeded communication with the coasts of Africa. This continued state of warfare, and the dangers to which it exposed the Dutch vessels to and from the Mediterranean seas, necessarily gave rise to some regulations, the drawing up of which devolved upon a Chamber of Directors of the Levant trade, appointed by the States General. On looking into the "Groat Placaat Bock, 1 Deel." fol. 907, where these regulations are detailed at full length, we find it enacted, that no Dutch vessel should be allowed to proceed to the Mediterranean unless properly armed and prepared for

defence; and moreover, that they would not be received into any of the ports of Holland, when coming home from the Mediterranean, unless they had come under the convoy of a man-of-war, appointed for that purpose[1]. Heavy fines, and the forfeiture of the freight, were imposed upon all defaulters. The port of Leghorn was, with the permission of the government of that country, selected as a rendezvous for the convoys previously to their leaving the Mediterranean; and every vessel from the Levant was obliged to repair thither for that purpose[2]. Now, it must be evident to every one, that besides the object of protecting their own vessels from the pirates, the Dutch government had in view, when they legislated in this matter, their performing a sort of quarantine at the place of rendezvous, which has been famed in all times for its admirable and strict regulations on the subject. By this practice they

[1] See Etat present de la republique des Etats-Unis, &c. par Janiçon, tom. i. p. 447.

[2] De la richesse des Etats-Unis, &c.

freed themselves of all dangers of imported contagion, and of the embarrassments naturally arising from quarantine establishments at home; while at the same time the government at Leghorn could not but see with satisfaction the execution of a plan calculated to bring more wealth into its territory. But even supposing that the Chamber of the Levant trade in Holland had never thought of this second useful deduction from their regulations respecting the Turkey trade; still the fact would not be the less true, that Dutch vessels performed a quarantine of more or less duration, previous to their free communication with Holland, although that quarantine was performed abroad. It is natural to suppose that if any plague case had happened in any of the vessels during their stay at Leghorn, or in the course of the voyage home under convoy of a man-of-war, such vessel would have been kept segregated in either case until purified, either at Leghorn or in its way home by the commanding officer, or in Holland by the

proper magistrates deputed for that purpose. Nor was there any great chance of concealment; as no vessel was suffered to come home alone from the Mediterranean. But there is another circumstance tending materially to the elucidation of this same point; and that is, the strict injunction under which the Dutch consuls, settled in every part of the Levant, acted with regard to vessels of that nation sailing from thence for Holland. By a law of the United Provinces, they were directed to withhold what was called *le passeport de mer* from any vessel preparing to quit a port in Turkey where the plague was raging at the time of their taking in their cargoes; and without these passports they were neither safe in sailing through the Mediterranean, nor were they admitted into Holland. All these facts would amply explain the unfrequency of the plague in Holland: for as to the occasional occurrence of that disease in that country, none but those who have never read the general history of that contagion can deny. That the want of specific quaran-

tine in Holland did not proceed from any incredulity on the part of the Dutch in the doctrine of contagion, the institution of pest houses, such as had been erected in England under and before the time of James I. during the prevalence of plague, sufficiently proves. One of those establishments is still in existence on the island of Rozenbergh, at Rotterdam, within which any case of plague or other contagious disorder, which has happened to make its appearance in that town, is instantly confined.

However careless the Dutch may have appeared in regard to quarantine laws, from the total absence of any specific regulations on that subject, and lazarettos, (an inference which by the bye I have shown cannot logically be drawn from their conduct,) it is no less curious than true, that, within these few months, instructions have been forwarded to this country by the government of the Netherlands, to collect and communicate all useful and positive information tending to form a code of quarantine laws, to be forthwith established in

that kingdom [1]. The same occurs with regard to Russia, the agents of which country are *at this moment* investigating the subject in England, for the same purpose, of establishing in that empire those institutions, the offspring of long experience and wisdom,

[1] It must not, however, be supposed that Holland has always been without quarantine regulations. I have now lying before me the circular of the Dutch minister of marine, dated *Gravenhage, den 21then Maast* 1817, to all the commanding officers and superintendants of the various seaport towns in the kingdom of the Netherlands, confirming and even extending certain regulations respecting vessels coming from the Levant, or any other place where infectious diseases may reign; and ordering such vessels to perform quarantine. These regulations were first enacted about thirty years ago, under the *Staats-Bewind der Bataafsche Republiek;* and they are nearly similar to those which are generally adopted in every port in Europe. There are also full instructions to the different officers for their conduct with regard to vessels and cargoes from the Levant, with the mode of examining, purifying, insulating, &c. &c.—See *Instructie voor de Geneeskundigen, belast met de Visitatie der Schepen,* &c. &c.*

* In referring to this code in the original, I beg to add, that I am not myself conversant in the Dutch language, any more than in the Hebrew, to which I have had occasion to apply for proofs of my case in a former part of this letter.

and which have saved Europe from devastation, for upwards of two centuries! And this, too, at the very time when the British Legislature is invited to doubt of the propriety of those institutions! The Report of the Committee appointed to investigate the question of "Plague and Contagion," will be one of the most important documents that shall have issued from that house. Its intrinsic interest, I have no hesitation in saying, is paramount to that which may be attached to the questions of Crime, Prison, and Police, now under investigation. Such a Report will be ever after referred to as containing the deliberation of the most enlightened legislative body in Europe; and according to its resolutions, it may do infinite good, in confirming a doctrine never more to be disputed; or incalculable mischief, in erasing it from the books of medical jurisprudence. Let the evidence of many centuries,—of hundreds of persons who have recorded their opinion in books of great value,—of innumerable and uncontradicted facts, together with the

testimony of many living witnesses of the direful effects of the plague, and the reality of its contagious nature,—face on one side of the bar before your committee, the few individuals, on the other, who, from a desire of being distinguished for superior and original thinking, court not the truth, but public fame! Let it be borne in mind, should they prevail, that the abrogation of laws imposing very trifling shackles to a limited trade, besides exposing the whole nation to the visitation of a most destructive disease, will also subject the *whole shipping trade* of this country to the vexatious obligation of performing quarantine in every port of France, Spain, Portugal, and Italy, *at all times and under all circumstances*, where those laws are not likely ever to be abrogated, and where the fear of the plague has hitherto been their surest preservative from that calamity. England, without quarantine laws, will *instantly* be noted in the books of health of every European nation, as an infected country!

It was my intention to have added some

information upon the principal lazarettos in Europe as they are now conducted; but this letter has already trespassed too much on your time, and the limits I had prescribed to myself when I began it. I have, however, thought proper to accompany this communication with a plan of that most admirable establishment, the Lazaretto of Leghorn, which I visited in a particular manner in 1814, and in the examination of which I was materially assisted by the polite condescension of General Spanocchi, the then governor of that town.

THE perusal of the foregoing Letter will naturally suggest the following

CONCLUSIONS.

1st. Diseases, when reference is had to their origin and mode of propagation, may be divided into SPORADIC[1] and ENDE-

[1] Those diseases which seem to *start up* spontaneously and in small number, attacking sometimes one, at other times another individual—which in fact furnish

MIC [1], or in other words into spontaneous, transitory, and permanent.

2d. If the particular causes which gave rise to any sporadic disease in one individual, should happen to act equally and at the same time upon many,—as is not unfrequently the case in catarrhs, inflammations of the chest, agues, remittent fevers, the typhus, &c.—then such sporadic disease is said to be *epidemic* [2].

3d. When a *sporadic* disease has become *epidemic*, it may, after a certain time, assume an additional character, viz. that of being *infectious* (or contaminating, which is a more apt expression). This happens when many individuals have been affected in succession, in the same town, village, district, street, house, prison, or ship; and the circumambient atmosphere has become, from that circumstance, unfit for the healthy

the daily occupation of medical men, and are as distinct as possible from each other,—are called *sporadic*. This class comprehends the $\frac{9}{10}\frac{9}{0}$ of all the diseases which afflict mankind.

[1] For an explanation of this term, see page 18.

[2] See also page 18.

exercise of the functions of life : in which case a person exposed to such an atmosphere will feel, more or less, its bad effects in the development of a disease the type of which will be similar to that of the prevailing malady : for example, the bilious remittent fever, the typhus gravior, the yellow fever, the gaol and camp fever, the scarlatina, the putrid sore throat, and perhaps the inflammatory and intestinal fevers of lying-in women confined in the same room, &c. &c.

4th. No *infectious* or contaminating disease can be communicated by *contact* ; either direct or indirect, far or near, early or late in the disease.

5th. No individual labouring under an *epidemic contaminating* disease, nor any of his apparel, nor the objects that have been touched by him, are capable, when transported to a healthy place, of conveying the disease to a person in health.

Thus far with regard to the sporadic and epidemic diseases.

6th. Some few of the *endemic* diseases are propagated by *contagion*; such as the plague, small-pox, lepra, syphilis, the cow-pox, and some other eruptive complaints.

7th. By *contagion* is meant the action by which a diseased body, through immediate or mediate contact, communicates its own disease to a body in health, which in its turn conveys it to others by the same means; and so on in succession, without any exception of age, sex, temperament, or mode of life.

8th. A *contagious* disease is that which may be conveyed to a healthy place by any individual labouring under it, or by his apparel, or any other thing which has been in contact with some part of his body.

9th. *Contagious* diseases are independent of all influence of the atmosphere. They commit ravages when no possible cause of unhealthiness exists: they are neither checked nor promoted by the south or the north winds; by the winter or the summer; by an elevated or a low topographical situation. They are never, therefore, *epidemic*.

10th. Another specific character of the contagious disease is, that it may be communicated by engraftment or inoculation. This alone sufficiently distinguishes *contagious diseases* from *infectious epidemics.*

11th. Chemical and other processes for purifying the air will often reduce an *infectious* epidemic to a simple epidemic, and ultimately put a stop even to the latter. Not so with a *contagious* disease, of which no process whatever can change the character. Fumigations have succeeded in checking the yellow fever, and in depriving an epidemic typhus of its *infectious* property ; but in the case of the plague, smallpox, &c. no such change has ever been effected by similar operations.

12th. The only mode of prevention from the plague is to avoid the contact of persons suffering from that disease, and of their garments, or any thing that has been used by them.

13th. *Insulation* and *segregation* are the surest preservatives against contagious diseases. But no such means can save a

person from the influence of *infectious* epidemics.

14th. The plague has been proved to be *contagious*. It has been demonstrated that this disease can be imported from Turkey into Italy, France, Spain, England, &c. by personal or other conveyances: therefore, the laws of quarantine, insulation, and segregation, ought to be maintained in full force, and executed with the utmost degree of vigilance in every one of those countries, if it be wished to protect the inhabitants from the visitation of such an awful calamity.

I have the honour to be,

Sir,

Your very humble Servant,

A. B. GRANVILLE.

8, Saville-row, Burlington-gardens,
15th of March, 1819.

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