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COND REPORT on QUARANTINE •

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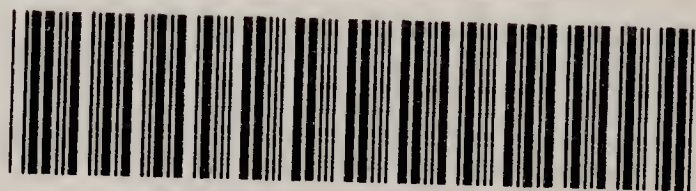
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LONDON SCHOOL OF HYGIENE
AND TROPICAL MEDICINE.

[DIV. OF EPIDEMIOLOGY]

GENERAL BOARD OF HEALTH.

APPENDIX V.

TO THE

SECOND REPORT

ON

QUARANTINE.

REPORT of Dr. W. H. BURRELL on the
PLAGUE of MALTA in 1813.

Presented to both Houses of Parliament by Command of Her Majesty.

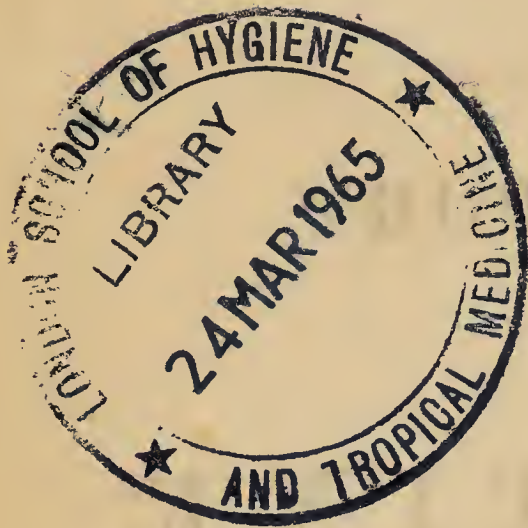


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THE PLAGUE AT MALTA IN 1813.

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*The General Board of Health, Whitehall,
5th June 1852.*

SIR,

I AM directed by the General Board of Health to convey to you their sense of the value of the report presented by you to the Lords of Her Majesty's most Honourable Privy Council, stating in detail the reasons for the opinions given by you as member of a Board of Inquiry assembled at the office of the Army Medical Department, on the subject of yellow fever, and which the General Board have inserted in the Appendix to their Second Report on Quarantine.

The Board desire me further to express their hope and belief, that those reasons will assist in diffusing juster views on the mode of propagation, not only of yellow fever in particular, but of epidemic diseases in general; and I am therefore to request that you will favour them with any assistance which your observation and experience may enable you to render, with a view to extending a knowledge of the science of prevention in reference to Plague, and leading to a practical reform in quarantine.

I have, &c.,

(signed) C. MACAULAY.

W. H. Burrell, Esq., M.D.,
Principal Medical Officer, Malta.

Malta, 8th July 1852.

SIR,

I HAVE the honour to acknowledge the receipt of your letter of the 5th ultimo, conveying the favourable opinion of the General Board of Health on my report on yellow fever, and requesting any remarks I may be able to furnish with reference

to plague ; and, in reply, beg you will express to the Board the value I attach to their approval of my performance, and the pleasure I shall have in forwarding to them a paper on the plague of 1813 in this island, which is now nearly ready.

I have, &c.,

(signed) W. H. BURRELL, M.D.,
Staff Surgeon, P.M.O.

C. Macaulay, Esq.,
General Board of Health, London.



Villages of Malta.

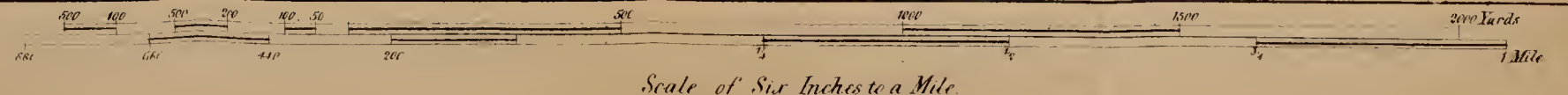
Sluema	Attached	7 th May	Gudja	Attached	17 th May
Luscar	"	7 th "	Micabriba	"	21 st "
Zabbar	"	25 th "	Luca	"	29 th "
Zetum	"	24 th "	Zabbar	"	30 th "
Allard	"	22 nd "	Bircaraca	"	27 th "
Carma	"	22 nd "	Floriana	"	26 th "
Carpiawan	"	31 st "	Vittoriosa	"	25 th "

The Division of Floriana so near to Valletta would go far to prove that intercourse had little or nothing to do with the spread of the Disease or its appearance could not have been so long delayed.

- A. Barmela
- B. Vittoriosa
- C. Corradino
- D. Isola Point
- E. Floriana
- F. Pietra & Mostida
- G. Sluema

PLAN OF VALETTA AND ITS HARBOURS.

- | | | | |
|-----------------|---------------|---------------|-------------|
| 1. Gita Vecchia | 7. Guggur | 13. Zetum | 19. Zorriek |
| 2. Casal Balzan | 8. Bircaraca | 14. Ascan | 20. Siggewa |
| 3. Iza | 9. Carma | 15. Gudja | 21. Gndi |
| 4. Allard | 10. Luca | 16. Bircaraca | 22. Zabbar |
| 5. Marfa | 11. Bircaraca | 17. Micabriba | 23. Dugh |
| 6. Mostida | 12. Pietra | 18. Safi | |



Scale of Six Inches to a Mile.

REPORT

ON

THE PLAGUE AT MALTA IN 1813.

MY LORD AND GENTLEMEN,

THE island of Malta lies between Sicily and Africa, in latitude $35^{\circ} 54'$ north, and longitude $14^{\circ} 34'$ east. It is about seventeen miles in length by nine in breadth. The surface is diversified by hill and vale, the highest point rising about seven hundred and twenty feet above the level of the sea, while a part of the valley, at the head of the grand harbour, is a few feet only above the water. Limestone of various density forms its rocky base, which in many places appears almost bare, while, in others, its gentler declivities are covered by terraces, on which the scanty calcareous soil has been collected, in order to extend the area of cultivation. In some of the valleys the soil is deeper, and partakes more of an alluvial character; but in one or two spots only can it with propriety be designated as marshy. The villages, or casals, into which the great bulk of the rural population is congregated, stand, with few exceptions, upon high ground, and the habitations of the dense population in the various sections of the capital are, for the most part, favourably situated as regards elevation. The climate of this island is considered healthy. The mean temperature of the first quarter of the year is 57° ; of the second, 67° ; of the third, 79° ; and of the fourth, 68° . The average fall of rain is about seventeen inches, and occurs chiefly in winter; the period from April to October being remarkably dry. As summer advances, the ground becomes parched, under the influence of a powerful sun. Vegetation languishes, or is checked. The winds are light, or long calms prevail, which are only interrupted by the oppressive sirocco. With the first rains, in October, the temperature speedily changes, the herbage assumes a fresh verdure; and the inhabitants, who had sought the shade as a protection from the scorching sun, now bask in the rays wherever houses or walls afford them shelter against the cooler northerly winds.

The formidable fevers, which led to the desertion of the casal San Paolo, on the border of the wet ground at the head of the

grand harbour, show that the salubrity of Malta is due rather to the general elevation and dryness of its soil than to any peculiar advantages of climate.

The island was ceded, by Charles V. to the Order of St. John, in October 1530. The incessant hostilities carried on by this martial order against the Ottoman power, then at its height, caused Malta, in turn, to experience the horrors of war; yet, during the alternate invasions, successes, and reverses of the next 145 years, the population suffered only four times from plague; namely, in 1592-3, 1623, 1655, and 1675-6. As the fanaticism and resources of the belligerents became exhausted, the Maltese turned their attention to the peaceful occupations of trade and agriculture; and when the island surrendered to the British, in September 1800, the supremacy of our flag secured full protection in these pursuits, when the coasts of Italy, France, and Spain were blockaded. Malta, in consequence, became "the emporium of commerce in the Mediterranean;" merchants and refugees in great numbers resorted to it; and the population of its towns was augmented by many thousands, who found lucrative employment in its abundant prosperity.

"One of the most material branches of this commercial intercourse," says Dr. Tully, "was the trade carried on between Malta and the Levant; and the produce of the latter hourly appeared in her ports. In consequence of the frequency of the plague, which for centuries past had existed in almost every part of the Levant, the general quarantine precautions were invariably resorted to, and, after due expurgation, both ships and cargoes were admitted to pratique in Malta."

The consul at Alexandria had apprised the government, in January 1813, that plague prevailed in Egypt; and we may hence infer that quarantine had rather become more rigorous than undergone any relaxation in Malta at that time, for the brigantine "Nancy," which had two of her crew under plague on arrival, and the polacca, "Bella Maria," which had lost one by the same disease about the time of her departure from Alexandria, both arrived on the 28th of March, and were required by the authorities to leave the island the following day. They were both loaded with grain.

The brigantine "San Nichola," Antonio Maria Muscara, master, had also arrived on the 28th of March, 1813, with a foul bill of health from Alexandria, where the disease existed, having lost two of her crew on the voyage; "measures of increased rigour were immediately resorted to; all arrivals from the Levant were placed in the strictest quarantine, and on the 29th of the same month, the captain and crew were transferred to the Lazaretto, and the ship was placed under the

“immediate charge of health guardians.”* The captain was attacked on the 1st of April, his attendant, a sailor, on the 2d, and both died on the 7th of April, in the Lazaretto. The public it is said became alarmed; the Government, in consequence, determined on sending the “San Nichola” back to Alexandria; and on the 10th, she took her departure with a fresh crew.

“The public mind,” says Dr. Tully, “was now somewhat tranquilized by the sailing of the ‘San Nichola;’ but at the moment they were thus indulging themselves in the fond hope of security, this insidious disease was insinuating itself in every angle of the city, *in places remote from the scene of its first appearance.*”

The “Giornale di Malta,” of the 31st of March, takes no notice of these occurrences, nor can I find any allusion to the subject of plague, in the following weekly numbers, until the 12th of May.

The first case *recognized by the Committee of Health as plague* occurred on the 14th of April, in the daughter of a shoemaker, named Salvatore Borg, residing in Strada San Paolo (No. 227); a few hours after her death, on the 19th, the wife was attacked; and on the 30th, a son, four years of age, was taken ill. The wife, after being prematurely delivered of a seven months’ child, died on the 4th of May; and Borg himself was seized with the disease on the same day. Inquiry was then made for other cases, and two suspicious ones were found. Nevertheless, in the proclamation of the 5th of May, “The Board of Health observes with pleasure, that from the reports which, during the present meeting, have been received from the various medical practitioners, both civil and military, it appears that this city is at present free from any contagious malady, excepting only the family of Salvatore Borg (now in the Lazaretto), respecting which the board hitherto sees no reason for diminishing the suspicions it has entertained.”

According to the “Giornale di Malta,” of the 12th of May 1813, which reports these attacks in the Borg family, only three persons died under suspicious circumstances in the whole population, including the shipping, military, and prisoners of war, between the 14th of April and the 11th of May.

Dr. Tully also states, that “until the 19th (May), the advance of the disease was slow, and many even began to doubt the existence of plague in the island.”

The “suspicions” of the board seem to have arisen during the illness, or after the death of, Borg’s wife; for the daughter’s disease was considered by a very able physician, Dr. Leone

* Tully, p. 38.

Gravagna, who visited her on the 16th of April, as “putrid typhus;” and, in consequence of this opinion, the body was carried to the church and buried in the usual manner. Though the mother’s case seems to have been more decided, even her corpse was carried to the church; but a conference of physicians having decided that her disease was plague, the body was removed, under a military escort, and interred outside the walls. On the 5th of May plague was declared to be present, and the survivors of this family, as well as every other individual proved to have had communication with them, were forthwith removed by order to the Lazaretto.

The only cases known as in any way connected with the disease in the family of Borg, are, 1st. Maria Agius, the midwife that attended Mrs. Borg, who was found dead in her room in Strada San Ursula, on the 6th of May, with “some signs of plague on her body.” 2d. Grazia, daughter of Giovanni Batista Pisani, sexton of the church of St. Rocco, who, with her whole family, consisting of eight persons, was sent into Fort Manoel, in consequence of having communication with, and passing the night in the house of Maria Agius. On the 15th, she is reported as being affected with glandular swellings. 3d. Signore Delicata, brother-in-law to Maria Agius, who, being suspected, had also been sent into Fort Manoel, and is reported as having been attacked with fever and carbuncle on the 17th, which proved fatal on the following day. 4th. The father of Borg, eighty years of age, who was taken ill on the 8th, and died on the 9th, without having shown any symptoms of plague. Neither Dr. Gravagna, the physician, nor the several relations and friends, who, according to the Baron de Piro, were in attendance on Mrs. Borg, are noticed as having suffered.

Grazia and Delicata had been shut up in Fort Manoel on the 8th of May, and as the disease did not appear in the former until the 15th, nor in the latter before the 17th, there is no reason to suppose that these cases had any connection with the subsequent outbreak in Valetta; for between the 8th and the 15th, when Grazia was attacked, the only declared cases of plague were in two ships; one on the 9th, at St. Paul’s Bay, eight miles distant; the other on the 14th, in a vessel about to sail for Lampedosa. On the 16th were reported, the deaths of a daughter and son of a baker, 92 Strada S. Christophoro; and of a Greek; the attack of a girl eight years of age in Strada Pozzi; of a man and his wife in Strada St. Giuseppe; and a girl of fourteen in Strada St. Giovanni. On the 17th, no fresh cases. On the 18th, two new cases in Strada Pozzi: one in Strada St. Paolo, a death in Fort Manoel, another in Casal Gudia, four miles distant, and one attack and one death in the Veterans.

The cases in the Borg family, and those which immediately followed them, can only be looked on as the more prominent and decided ones in the beginning of May; for, in addition to a boy at Sliema, whose father afterwards died of plague, there was the death of a girl on the 5th in the Maltese hospital, so suspicious that it was alleged the body was burned; the death of a boy, 150 Strada San Paolo, on the 7th, the whole of whose family was moved to Fort Mancel; a case at the village of Tarxien the next day, which proved fatal during the removal of the patient to the Lazaretto; the attack of a boy at Birchircara, who was placed in quarantine; another in the Marina, and on the 9th a young man in Strada Saluto, both of whom were sent to Fort Manoel.

All these cases were sufficiently suspicious to be placed in quarantine; but the Committee of Health conceiving (Dr. Calvert) that they had the disease in their power, remained in that belief till the 16th, when no further question could arise as to its diffusion. This unwillingness to proclaim the disease existed at a still earlier period, for the Baron de Piro (p. 13.) mentions the well-marked cases of three servants of a friend, and the death of a priest, about the 22nd of April, none of which occasioned alarm or led to any precautions.

I can neither trace from public documents, as Dr. Tully says can be done, "the attack of many near relatives," nor can I find that "the malady displayed itself by an uniform and faithful progress," according to the same author, characteristic of contagion. The relatives of those who suffered were considered "suspected," and placed in quarantine; intercourse with the diseased being, I am informed, more frequently presumed than proved. That many of these were attacked is certain; but as they had been exposed to the same local influences, no sufficient reason can be adduced for attributing such attacks to intercourse.

The statements of Dr. Tully, that "some of the health guards* of the 'San Nichola' were among the first attacked," and that "the persons who were next and in succession attacked, were those who made purchases of susceptible goods from the shoemaker Borg, and who themselves traced their disease to this very source," (pp. 50, 51,) are unsupported by any official or other admissible evidence, and must be coupled with that loose hearsay testimony on which this author frequently rests important conclusions.

According to Luigi Borg, the youngest son, who is still living, neither his grandmother nor his two uncles Antonio Borg and Giovanni Bonnici were attacked, though they visited the family, and were in consequence sent to the Lazaretto. I think it not

* Mr. Garcin, the very best authority, contradicts this in the most unequivocal terms. Six guardians, Mr. G. states, were employed in this duty, a number offering little security, under promise of reward, for any concealment.

improbable that the great number attacked bearing the name of Borg may have tended to strengthen the common belief that the shoemaker of that name was the cause of the introduction and spread of the disease ; and it may be well to explain that this name is to be met with in nearly every part of the island, predominating much in the same way as Smith in England, or Jones in Wales. Excepting the members of the shoemaker's family, however, it does not appear in the bulletins till the 22^d of May, from which date up to the end of the epidemic it is to be found more frequently than any other.

The Committee of Health having reported "the public health to be in imminent danger," efforts were made to trace the disease from the "San Nichola," or Lazaretto, to the house of Borg—a distance of fully a mile. It was said that Borg had had contraband dealings with the health guardians, who had watched in boats alongside the "San Nichola," with her ports closed. Sliema is mentioned as the place of deposit of the articles alleged to have been stolen from the San Nichola, apparently because a public-house there is said to be the resort of persons from the quarantine ground ; and an anomalous case of disease (which proved fatal on the 7th of May) in a boy there, although pronounced by the Committee of Health not to be plague, seemed to furnish a connecting link eagerly laid hold of by a population believing that, without importation, the disease could not exist. It is not alleged that Borg had been seen with the guardians after the arrival of the "San Nichola," nor is there any evidence to prove that the latter had left their very responsible duty at a ship, about which there was so much public alarm, to carry on a petty, but to them most dangerous smuggling transaction with a shoemaker.

Such was the current opinion at the time, and it prevails at the present day. Dr. Tully gives it as the only one, but the Baron de Piro, in his excellent account of the plague, published in 1833,* says, "I cannot confirm it, on account of the following circumstances : 1st. It appears by the deposition of the captain and crew of the 'San Nichola,' that the port-holes had been shut and secured in the course of the voyage.† 2^d. The new crew, embarked to take her back to Alexandria, arriving there, and, after having disposed of their cargo, returned to Malta, without a single individual having been sick. 3^d. The British consul in Alexandria,

* "Raggualio Storico della pestilenza che afflisse le isole di Malta e Gozo negli anni 1813 e 1814 dal Barone G. M. De Piro—Livorno 1833.

† Mr. Garcin, then Captain of the Lazaretto, informs me that additional fastenings were made after arrival, and before the captain and crew left the vessel for the Lazzaretto, and that no communication could have taken place except by the guardians, and that he utterly discredits.

“to whom the said ship was consigned, assured our Government by letter that no part of the cargo was deficient.”

Sir Thomas Maitland, in his despatch of the 8th of April 1819, to Lord Bathurst, says; “As far as I have been able to ascertain, “I think I am warranted in stating, that it (the plague), was “brought into Malta by a ship from Egypt, and conveyed out of “that ship by a person smuggling some *leather*; this person and “his family were the first sufferers from it.”

Dr. Tully seems to have given credit to this story, but the Baron de Piro (a Maltese), who would appear totally to disbelieve it, says, “I consider it proper to state that Dr. Tully, “by false accounts given to him, erred in characterizing the “shoemaker Borg as a noted smuggler; for, by common consent “of those who knew him, he was always regarded as a respect- “able artisan.” Moreover, Dr. Hennen says, “in a letter now “before me, the President of the Board of Health candidly “confesses that the only clue to inquiry as to Borg’s guilt was “his dying exclamation, ‘Oh! the linen, the linen.’”* “Nor “is it likely,” observes the Baron de Piro, “that the guardians “having the penalty of death before them, and the knowledge “of plague on board the ‘San Nichola’ should have ventured “on leaving their post; it is more reasonable to imagine that “if they abandoned it at all, for the purpose of theft, either “they went on board some of the other vessels, or they had “stolen infected articles from the Lazaretto. But without “wandering into idle conjectures and suppositions, I consider “it better for us to adhere to what has been uniformly attested “by several of my fellow citizens, and published by Dr. Naudi “and Dr. John Hennen in their respective works, namely, that “the plague, although not recognised as such, had been intro- “duced amongst us previous to the arrival of the ‘San Nichola,’ “by means of various pieces of cloth, which had been seen in “circulation in Valetta, enveloped in their original wrapper, “the manufacture of Alexandria; thus showing that, in contra- “vention of the quarantine laws, they had been brought into “commerce, without being previously purified. Dr. Naudi, in “his learned work, relates this fact in language the most positive.”

(p. 22.)

But to refer to the opinions of two very competent eye-witnesses of the occurrences of 1813, Dr. Calvert states, “nothing could bring to light the way in which the infection “was brought;” and Dr. Faulkner says, “it appears to me “little less than mere waste of time to take any pains in tracing

* Linen formed no part of the cargo of the “San Nichola.” (De Piro, p. 24.)

“ this event to any particular instance of laxity in the department of public health.”

The mere circumstance of the arrival of the “San Nichola,” without proof that any of the first persons attacked among the population had come in contact either with those infected with the disease or infected articles, does not prove its introduction by that ship. The phrase “it must have been introduced” is a gratuitous assumption, with which this matter-of-fact age is not inclined to rest satisfied. We must have adequate proof, and not simply the arrival of a ship with plague on board ; which has happened over and over again without any injury to the population of Malta.

Dr. Tully says, (p. 223) “ It is well known that merchant ships from Alexandria, Smyrna, and Constantinople, with their crews labouring under plague, have repeatedly, within the last three years, entered almost every port in the Mediterranean where the British flag was flying ; and many such instances took place during my residence in the Ionian Islands without being productive even of alarm, much less of danger ; and ships under such circumstances remained for days in strict quarantine, closely surrounded by guard boats, until the moment of their departure, receiving every necessary assistance during their stay ; the same repeatedly occurred at Malta, and no apprehension whatever was entertained by the Government, which trusted with perfect confidence to the vigilance of the public officers.”

I have examined every account I could find of this alleged introduction of plague, and nothing like proof is adduced in any of them ; the whole appears to be pure conjecture ; the invention, in short, of a panic-struck population to verify a preconceived opinion.

That the plague was in Malta ; that the daughter of Borg was *the first case recognized by the Committee of Health*—that his wife, a son,* and himself were subsequently attacked by the disease ; that packages of cloth from Alexandria, were previously to those occurrences circulated, are facts not to be disputed ; but that Borg was a smuggler ; that he had gone to Sliema or met the health guardians ; that the latter had gone on board the “San Nichola,” stolen goods, and sold them to Borg ; that the packages of cloth from Alexandria had not been deputed, and, in consequence, plague communicated to the population, are simple matters of assertion, in support of which not a tittle of evidence exists.

* Another son of two years of age, was attacked on the 14th of May, or two days after the death of Borg in the Lazaretto on the 12th : he recovered. The rest of the family, and the two Greeks who nursed Borg and this child, were reported well on the 15th of May.

The "San Nichola" arrived on the 28th of March, and disease, according to Dr. Hennen, "though not recognized as plague, " was in Borg's family on the 2d of April," and he, the supposed medium of communication, was not attacked until the 4th of May, thus showing, even had he met the guardians on the evening of the day of the arrival of the "San Nichola," a confusion or rather an inversion in the incubatory stage in the same family, which cannot be reconciled with a common sense view of contagion communicated from without, since the first and chiefly exposed was the last to suffer, though undoubtedly susceptible of the disease.

The following facts communicated to me by Dr. Bardon, the best living authority in Malta, on the plague, prove that cases of the disease occurred in Valetta previous to those in Borg's family; if not before the arrival of the "San Nichola." Dr. Bardon states that "about a fortnight previous to the attacks " of plague in the family of the shoemaker Borg, residing in " Valetta, I was called to a Sicilian living in a *small room*, " No. 46, Strada San Dominico, who, in addition to symptoms " of gastric fever, presented a bubo in the right groin, which " suppurated, and was opened by me, and at the end of fifteen " days the patient was quite well: this case, in my opinion, was " one of plague. About the same period that I attended the " Sicilian, I was called to see a woman living in a *small room*, " at 75 Strada San Ursula, who was labouring under fever, with " severe pain of head, and vomiting. In a few days a carbuncle " appeared on the outer side of left knee; the symptoms became " aggravated, and on the 7th day the patient died of plague."

Besides, corroborative evidence is still extant that there was no precise information, either as to the previous state of the public health, or the commencement of the epidemic in 1813, there being many graves in the vaults of the churches of Valetta, Floriana, and Burmula, secured to prevent disturbance by iron bars, which contain the bodies of persons who had died for several weeks previous to the disease being declared.

There is then no proof that the plague of 1813 was introduced into Malta. The disease was already in the island when the "San Nichola" arrived; and that an epidemic influence was wide spread in 1813, I shall presently show.

"Many gross errors," says Dr. Hennen, "were committed at " first (both by the public authorities, and the population) from " ignorance of the real nature of the disease, and from dread of " the quarantine police." From the date of Mrs. Borg's death (the 4th of May) all cases in the least suspicious were placed in quarantine; business of every kind was suspended; intercourse enjoined to be avoided, and all assemblages of people strictly

prohibited. On the 21st of May, all the infected were transferred to the Lazaretto ; lights were placed at night on infected houses ; the veteran guards were posted at the doors to prevent intercourse ; the name of every person in the house was affixed upon the door, and the inmates were made to appear daily for the inspection of the deputies ; the town was divided into eight districts ; a market established in each ; and vendors were even required not to fold their commodities in paper. Pincers were generally used for the exchange of every article between one person and another ; and the Inspector General of Police directed the picking out by these means particles of hair, straw, feathers, &c., in macaroni and other articles sold.

It will be further seen by reference to the proclamations, p. 78, that the restrictions were made more and more severe in proportion as the cases increased. On the 1st of June, the deputies and guards were instructed to prevent communication, not only between the different districts, but between the different families in each district ; and on the 24th of June all communication between the towns and villages was ordered to be cut off ; allowing only the officers of Government and such as procured passports from government to go through the barriers.

Dr. Calvert says, "almost every human means were put in force, in conformity with the popular doctrine of pestilential contagion, * * * but all was to no purpose. The disease seemed to laugh at their exertions, while it jumped from house to house, and from street to street. Those who had no communication together, as well as those who had, fell alike victims to its fury ;" and at length he seems to have considered that "a single infected person is sufficient to contaminate the air of a whole city."

The official bulletins for 1813 omit to notice the residence of some of the first cases ; but I have been able to trace the great majority of those which occurred up to the 31st of May, and find that eighteen streets of Valetta, Floriana, and Cospicua, and Vittorisa, situated on the other side of the grand harbour, as also ten villages had been attacked, between the 12th and 31st.

In May plague had reached localities, some of them several miles apart ; yet it was believed that all this had been effected by a single individual, who did not die for six weeks after his alleged exposure. Fifteen of the streets infected during this month were the worst in Valetta, in which the disease continued to linger, and six of the villages were among the most populous, two of them lying lowest, namely, Curmi and Birchircara.

No less opposed to the doctrine of contagion is the circumstance, that while Strada San Paolo, the recognised *fons mali*, had only six cases from the 12th to the 31st, the streets "Pozzi,"

“Nicola,” “Ospedale,” and “Mandraggio,” had sixteen, eight, twelve, and six respectively; and by referring to map No. 2, it will be observed that this presumed mode of extension is also invalidated by the few instances, comparatively, in which the disease attacked house after house; its march having been always interrupted by space, so that the consecutive cases often occurred at great distances, and in streets having no connection. But the progress of the ordinary fever of Malta* so similar in its march, in the same months, to that observed by the plague, renders a common cause for the progress and decline of both highly probable, and explains in another way,† the safety with which Sir Thomas Maitland, on the 4th of December, “proclaimed that the plague was completely at an end; and allowed the whole population of Valetta to mix together, the very day that a strong case of plague had taken place within a mile of that city.” (Despatch to Lord Bathurst, 1819.)

On the 20th of December, “the town of Valetta,” says Dr. Calvert, “was again thrown into the greatest state of alarm by the occurrence of two suspected cases, both situated not far distant from the gate leading to Floriana.”

On the 14th January, the day on which the clean quarantine expired, a sudden death occurred at Casal Nasciar, which suspended pratique to the whole island for a few days; but on the 27th of January general pratique for the whole island was announced, and did take place on the 29th. It will be seen by the subjoined authentic extract from Dr. Bardon’s Register, that the island was not even at this time free from the disease. In fact as many undoubted cases occurred and passed into the

* AVERAGE Number of FEVER CASES during the months from April to October among the Troops stationed at Malta, in each year from 1816 to 1851 inclusive, compared with the Deaths from Plague during the same months in 1813, among the Civil Population.

	April.	May.	June.	July.	August.	Sept.	October.
Annual average of admissions } (military) - - - - }	20·8	24·9	47·1	82·5	75·4	70·4	34
Deaths from Plague in civil popu- } lation, 1813 - - - - }	3	110	800	1,595	1,012	674	211

† In fact, it was season that here had mastery, not quarantine, which tended in every way to exaggerate the disease, and, in consequence, to exclude the light that would otherwise have broken upon the medical part of the community by watching the fevers among the troops; for in these they would probably have discovered the mitigated forms of the same fever that was devastating the more crowded and miserable civil population. “I myself saw,” says Dr. Calvert, “but two cases of fever unattended with pestilential symptoms of one kind or other.” * * “The most respectable of the Maltese physicians acknowledged to me that they believed every case of fever that occurred during the season of plague was pestilential.” (Med. Chir. Tran., vol. vi.)

Lazaretto after the 4th of December as during the first six weeks of the epidemic; and, from the great number of places whence they were transported, the number of persons employed in that duty must have been as likely to extend the disease, had that been possible, as at any previous period, yet we do not find a single case traced to this source. The number of recoveries in these last cases will also prove, contrary to Sir Thomas Maitland's assertion, that "the last cases were" neither "the most violent," nor, "in the instance of the last hundred, by much the most fatal." (Despatch of 1819 to Lord Bathurst.)

LIST OF PATIENTS admitted into the Plague Hospital of the Lazaretto, from the 13th of December 1813 to the 16th of February 1814.

MEN.

Name.	Age.	Nation.	Admission.	Result.	Discharged.
1. Salv: Sant. - -	1		13 Dec. 1813.	Cured.	1 February.
2. Piro. - -	30	Portugal.	17 "	Do.	" "
3. Guis: Borg. - -	18		" "	Do.	" "
4. Fran: Cilia. - -	17	Zebbug.	" "	Do.	22 "
5. Guis: Delto. - -	6	Do.	" "	Died.	20 "
6. Sav: Borg. - -	20		" "	Cured.	22 "
7. Scerri. - -	23	Zebbug.	4 Jan. 1814.	Do.	" "
8. Gius: Cini. - -	4		" "	Do.	1 "
9. Vin. Detto. - -	2	Do.	" "	Do.	" "
10. Salv: Baldachino. - -	18		10 "	Do.	22 "
11. Giov: Gatt. - -	17	Do.	17 "	Died.	30 January.
12. Giov: Agens Reschid. - -	12	Floriana.	21 "	Do.	22 February.
13. Mich: Ellul. - -	40		22 "	Do.	23 January.
14. Giov: R. Ajat. - -	20	Ancona.	26 "	Do.	28 "
15. Torn: A. Raschid. - -	20	Valetta.	30 "	Cured.	22 February.

WOMEN.

1. Paola Sant. - -	28		13 Dec.	Cured.	1 February.
2. Maria Farugia - -	35	Do.	16 "	Do.	22 "
3. Maria Magro. - -	5		16 "	Do.	" "
4. Evang: Camelier. - -	26	Valetta.	20 "	Died.	14 "
5. Rafela Debono - -	64		4 Jan.	Cured.	22 "
6. Grazia Cini. - -	30	Birchiscara.	" "	Do.	1 "
7. Grazia Schiaro. - -	23		" "	Do.	22 "
8. Mar: Delica - -	13	Do.	" "	Do.	" "
9. Dorn. Mala. - -	43		" "	Do.	1 "
10. Maria Schembri. - -	33		17 "	Do.	22 "
11. Cal. Borg. - -	7	Do.	21 "	Died.	22 January.
12. Mar: Baldachino. - -	70		22 "	Do.	23 "
13. Mad: Schembri. - -	8	Do.	27 "	Do.	22 "
14. Rosaria N. - -	4	Valetta.	16 Feb.	Do.	19 February.

I certify that the above is a true extract from my register of the last cases of plague in the epidemic of 1813.

B. SALVA BARDON.

A careful review of the whole of the occurrences, such as the nearly complete exemption of the better classes everywhere; the escape of those left in comparatively free intercourse, though in equally questionable dwellings; the arrest or mitigation of the disease by pure air; the much greater proportion of recoveries among the military and others provided with proper accommodation in houses or hospitals; and the great mortality in the poorer populations subjected to rigorous restrictions, and labouring under every social and sanitary disadvantage, have left on my mind a deep impression that no small share of the mortality in 1813 may be laid to the account of quarantine. Let us well consider the facts; that in a population, amounting to 47,654, inhabiting sixteen infected places, in all of which quarantine was comparatively lax, and in several nearly neglected, there were only 219 deaths; whereas in six other places, containing 44,247 inhabitants, subjected to the most refined system of restriction ingenuity could devise, 4,221 persons perished.

There is nothing so very different in the climate, or in many of the habitations and modes of living of the people of Malta, from those of the Levant, where plague is admitted to be indigenous, as to induce the belief that they should be exempt from the disease. On the contrary, a careful investigation excites surprise that this island should not have been more frequently visited by Plague. Whatever may be the salubrity of its climate, we cannot believe that it enjoys any special exemption from that occasional distemperature of atmosphere extending over large portions of the globe, about the same time, and giving rise to different forms and degrees of disease with different people according to their respective local peculiarities. Hecker (p. 240) in speaking of the sweating sickness in England in 1528, says: "As soon as the occurrences of this unfortunate year could be more closely surveyed, a conviction was at once felt that it was one and the same general cause of disease which called forth the poisonous pestilence of the French camp before Naples, the putrid fever among the youth of France, and the sweating sickness in England, and that the varying nature of these diseases depended only on the conditions of the soil and the qualities in the atmosphere in the countries which were visited."

That an epidemic influence extended far and wide about this time is obvious. In the beginning of 1812, the plague broke out in Constantinople, then in Smyrna, then in Cyprus; in August 1812, the yellow fever broke out in Murcia; in January 1813, the British Consul apprized the Government of the presence of plague in Alexandria; on the 28th of March following, the public health of Malta was "considered in imminent danger," not from

the extension of an epidemic influence, which a careful study of the laws of epidemic disease might have pointed out, but from the cases of plague on board the "San Nichola;" and in June a suspicious fever prevailed in Gibraltar, which, in July, was recognised as the yellow fever. We have had repeated evidence of a similar diffusion of the choleraic and yellow fever influences; we have seen the one and the other arrive in spite of the most rigorous quarantine, and for a season commit equal ravages.

Nor were indications of some similar influence absent from Malta, before as well as during the epidemic. Dr. Hennen states (p. 527), "The winter immediately preceding the plague was mild, but during the whole period of the disease high winds prevailed; those which were most so were from the north-west, and it was a coincidence constantly observed, that on those days the winds blew strongest the number of attacks and deaths were always greatest. The rains in the Plague year fell *early*, and *were copious*; this, however, caused no alteration whatever in the progress of the disease. For four or five years preceding that in which the plague raged, sudden deaths were much more frequent than ordinary, and during the twelve months immediately preceding, and especially for the last month of the period, the increase was still more observable, insomuch as greatly to excite public observation and alarm. Canine madness during these years prevailed with a frequency and violence never before observed, and many individuals perished in a state of hydrophobia. Apoplexies and palsies were increased in a remarkable degree; and intestinal worms, *tæniæ*, *ascarides*, and *lumbrici*, were never so general or so numerous in the memory of man. *In this state of the public health* the contagion of plague was *introduced* (?) and spread among the people."

If Malta, with its rigorous quarantine has not been able to keep out small pox and measles, which are of frequent occurrence, how are we to expect that it should be able to exclude the plague, the spontaneous origin of which is much less questionable? If this island has been visited in seven different years by the plague, this is sufficient to prove that the disease can take root, spread, and maintain its ground in spite of the most strict and best organized quarantine.

The long absence of any extraordinary disease especially dreaded for its fatality, has with the bulk of mankind been held a proof of its foreign origin. To this day not a few medical men advocate and encourage this belief; and as relates to Malta there is scarcely a native doctor who is not firmly convinced of the imported and contagious nature of plague. It is not, therefore,

surprising that an ignorant people should have adopted an opinion forced upon them by the influence of rank and intelligence, and, even as it were, at the point of the bayonet; for it seems to have been little less dangerous than treason, for any one to evince a doubt on the subject. I believe, however, it was no seeming submission to authority, it was an unshakeable conviction from the Governor downwards; for I have met with few, whether English or Maltese, inclined to qualify the opinion they held in 1813: namely, that the plague is imported, only spreads by contact, and that there is absolute security in isolation.

It is amusing to listen to recitals of how the disease was communicated by a pair of new shoes, which had not hung for a fortnight before being worn, the shoemaker having died immediately; how a piece of beef or money had not been immersed long enough in vinegar and water; how a doctor had forgotten that he had touched a bubo with the end of his cane, and fell a victim; how an unfortunate painter in going to his work had trodden upon a piece of old rag in the street, thrown from an infected house, was alarmed by the exclamations of the horror-struck lookers on, and though leaving his shoes, was attacked, and infected his whole family; how even cats were accused as the medium of communication; for in no case do the Maltese fail in tracing plague to contact in some shape.

To give credit to the accounts detailed to me by men otherwise intelligent, would be to believe that everything in the neighbourhood of an infected person was charged with a subtle poison which neither distance, purification, nor time was effectual in destroying. The comment on all these wonders is, that notwithstanding the most paternal injunctions of the Government, and the most stringent restrictions on intercourse the world ever perhaps witnessed;* together with extreme caution, dictated by fear, on the part of the inhabitants; still the disease increased, attained its acme like common epidemic fever, and at the proper season declined and disappeared, except in Casal Curmi, which, surrounded by double walls and cordons of troops, continued to suffer from a disease, which would have been more successfully opposed by the free dispersion of the people.

We must believe that Sir Thomas Maitland, and his predecessor, General Oakes, acted from a sincere conviction that the disease could only spread by contact; and we cannot, therefore, but respect the decision and activity displayed in the measures used for its repression. To cut off all communication by barricading

* See Note A. at the end of this Report.

the approaches was obviously the true means of arresting a disease extending by contact. But within the devoted district, the plague was fearfully increased in frequency by this measure. The fear of contagion drove every one within the precincts of his own dwelling; and here, under every circumstance that could depress the mind, or disease the body, this unfortunate community, accustomed to live much in the open air, awaited a doom which was hurried on by the very means (seclusion) employed for their protection.*

At an early period of the epidemic (21st May) the healthy members of infected families, as well as the suspected and diseased, were transferred to Fort Manoel and the Lazaretto. The permanent accommodation here being soon found insufficient, small wooden houses, or *barrache*, as they are called, were erected in the ditches of the fort; and subsequently similar ones were placed in the ditches near the Porta de Bomba and other spots about the bastions at Floriana. The master carpenter, Carlo Mifsud, who superintended the erection of these huts, informs me that they were built against the wall, about twelve feet square, formed of $\frac{3}{4}$ -inch boards, with sloping roof, and with small windows. They were placed about twelve feet apart, with bars between to prevent communication, but without furniture or convenience of any kind excepting what might be provided by the inmates.

“All these receptacles of human misery,” says the Baron de Piro, “presented but desolation and death;” and, judging from their plan and material, altogether unsuited for the climate, it is probable that the change from the town was in many instances greatly for the worse, more particularly to those in the ditches, the accumulated heat and stagnant atmosphere in which must have been insupportable. It is certain that the number attacked in the latter was very great, including the whole of the *becca-morti* (except one) employed in Valetta and Floriana. Nor could those at Fort Manoel fare much better; for exposed to an unmitigated summer sun, and the reflected heat from high walls and

* In 1813 they seem to have followed very closely the measures adopted in the plague of 1676, by far the most fatal that has yet visited the island, no less than 8,569, or, according to common belief, 11,300, out of a population of 60,000 having perished. The disease commenced in December 1675, abated in February and March 1676, attained its height in June and July, and declined about the middle of August. By a census taken at the time in Valetta, 12,144 persons were found in 2,700 families. This dense population was required under the penalty of death strictly to segregate themselves in their own houses. Crowds of the infected were sent to the Lazaretto, and the suspected placed on board ships in the harbour, where nearly all died. It visited every part of the island, and, as in 1813, it seems to have been almost confined to the lower orders, the deaths of only ten gentlemen and seven clergymen being noticed.—“*Historia della Sacra Religione Militare de S. Giovanni Gerosolimitano. Venezia, 1715,*” *Passim*.

equally arid ground, the suffering during the day could scarcely be compensated by the sea air at night. The great object of these arrangements appears to have been to limit contagion; all else was subservient to that, and the result was as mischievous as many similar attempts to arrest the progress of epidemic disease.

Nor was the necessary hospital accommodation provided: that at Fort Manoel consisted of two small casemated ground-floor barrack-rooms, in which 234 persons died in June; yet this seems to have been the best. The three hospitals in the ditches at Floriana were of similar construction to the barrache; and in these the mortality in July and August amounted to 791. The Lazaretto was the only place, Fort Manoel excepted, that held out any reasonable hope of succour in such a visitation; and it proved so, the attacks and deaths here, according to Mr. Garcin, being, even in the tents, inconsiderable compared with those in the barrache. The families in the permanent buildings, Mr. G. states, suffered very little.

Mr. Thornton, Auditor-General, has furnished me with details of the sums expended in a daily allowance (about 3*d.*) to every individual detained in Fort Manoel, and of the provisioning of the hospitals,* by which I am enabled to deduce that the greatest number of persons in barrache, tents, and the hospital in the ditch at Porta de Bomba (on the 24th, 25th, and 26th of July) was 250; at Fort Manoel, about the same period, 935; and in the middle of August, 1,059. Later in August the number in the latter, and the Lazaretto, including 56 in hospital there, amounted to 1,389; on the 31st to 1490; on 10th September to 1,965; and on the 30th to 2,064. Taking the days of the greatest expenditure, namely, 17th and 22d July, in the hospital in Porta Reale ditch, and in that of Porta St. Anna, the number of sick about that period in the two largest hospitals would appear to have been 200; which, with those in Fort Manoel and the Lazaretto, would give about 300 under the disease; of whom from 30 to 50 died daily. Of the management of these hospitals and the chances of recovery we may form some idea from the following:—

“The result of about half an hour’s visit to the Maltese pest hospital,” says Dr. (afterwards Sir Brook) Faulkner,† “on the 2d of June, may convey some faint idea of the sufferings and privations to which those labouring under this horrible disease were subjected. These miserable creatures lay within a very short distance of each other, five or six on the floor of the same room; twenty-eight of them were attended by two convicts. They had

* See note C. at the end of this Report.

† Ed. Med. and Surg. Journ. vol. x.

“no change of linen, and were therefore obliged to lie either without shirts, or in their foul every-day clothes.”

ATTACKS and DEATHS among the Populations of Valetta and Floriana from the 5th of May, when Plague was declared, to the end of October 1813.

Places of Attacks. and Deaths.	May.		June.		July.		August.		Sept.		October.		Total.	
	Attacked.	Died.	Attacked.	Died.	Attacked.	Died.	Attacked.	Died.	Attacked.	Died.	Attacked.	Died.	Attacked.	Died.
In Houses in Valetta . . . }	72	41	344	160	463	326	207	105	35	7	8	2	1455	641
In Houses in Floriana . . . }	2	2	122	83	281	194	58	27	20	3	9	4	492	313
In Fort Manoel . . . }	16	35	23	234	16	26	.	.	.	.	1	.	56	295
In Barrache at Fort Manoel . . . }	.	1	5	49	51	18	42	.	16	.	4	.	118	68
In Barrache at Floriana . . . }	.	.	26	5	76	12	60	12	53	4	5	1	220	34
Plague Hospital of Valetta (in the ditch) . . . }	.	.	.	28	6	262	8	149	3	39	.	1	17	481
Plague Hospital at Floriana (in the ditch) . . . }	.	.	13	48	2	263	5	115	5	76	3	21	28	523
In Lazaretto . . . }	2	3	4	6	7	5	.	22	13	24	20	26	68	86
In Hospital of Observation (in the ditch) . . . }	6	13	50	20	13	2	13	.	6	.	.	.	88	35
In Maltese Hospital in Valetta . . . }	.	.	.	2	1	2	4	1	.	.	.	.	5	5
Total . . .	98	95	587	635	916	1110	397	431	151	153	51	55	2568	2481*

The impossibility of preventing the extension of the disease by the best organized system of quarantine, both in Malta and Corfu, showed that the calculation and foresight of the most vigilant were at fault; and that something more than segregation was required to stay its progress. Dr. Tully (p. 102), after describing the very complete arrangements for arresting the disease in the district of Leftimo, in Corfu, says, “Nevertheless the great object was yet unattained, as the extension of the contagion hitherto baffled all our efforts. The vigilance of the public authorities was excited in the strongest manner; and I immediately repaired to every place where disease broke out

* The difference in numbers between one Return and another in this Report arises from discrepancies in the Bulletins which it would be in vain attempting to adjust.

“ anew ; but all was ineffectual ; for, at the very moment we had
 “ formed the best grounded hopes of success, some unfortunate event
 “ occurred to subvert the whole ; and it not unfrequently happened,
 “ when we had reason to be certain that every danger was securely
 “ confined, it would suddenly start upon us, mocking all ordinary
 “ efforts ; and not because it was invincible, but (as I have before
 “ said) because we could not thus early arrive at anything like
 “ perfection, more especially on the part of our subordinate agents ;
 “ at this very period, when we supposed we had grasped the disease
 “ with Herculean force, it escaped with all the changes of a Proteus.”

All who have visited the villages of Corfu, and seen the squalid, aguish aspect of the inhabitants, and their small dark, filthy cabins, will be able to appreciate the probable effects of the following means of arresting a febrile disease. “ The character of
 “ the people we had to contend with,” says Dr. Tully (p. 112),
 “ left us still in the most anxious doubt ; for although sentries
 “ were placed everywhere, both day and night, assisted by frequent
 “ patrols, we still apprehended that attempts at clandestine com-
 “ munication would be made ; and learning, for the first time, from
 “ His Excellency, that a similar infatuation to incur disease existed
 “ in Casal Curmi, in Malta, where the inhabitants were not only
 “ walled in, but locked within their respective dwellings, I deter-
 “ mined upon having recourse to the latter method ; and in addition
 “ to the security granted by the presence of the guards, I caused
 “ each house to be locked every evening, *previous* to sunset, and
 “ the key of each door placed in a contiguous secure situation,
 “ where it remained until *after sunrise*, when the doors were
 “ opened for the purpose of general ventilation and for receiving
 “ the daily supplies ; so jealous was I of this duty that it was
 “ invariably executed in the presence of an officer of health ; and
 “ further, when the nature of the building led me to apprehend
 “ danger by means of the windows, I then caused them to be
 “ barred ; nor was I satisfied with the execution of these orders,
 “ but the whole came almost daily under my own inspection ;
 “ thus it might be said that the plague was hermetically sealed.”

According to Sir Thomas Maitland, a zealous perseverance in these means, during four months, sufficed for the extermination of a malady of which Dr. Tully says, (p. 90)—

“ Reflecting upon the nature of the disease, which presented
 “ itself for our examination, the poverty of the inhabitants
 “ amounting almost to absolute want, the natural unhealthiness
 “ of the whole district during the autumn ; considering also that
 “ these people had but recently recovered from the effects of a
 “ remittent fever, which had been most severely felt in every
 “ part of the district ; the village, although elevated, being nearly
 “ surrounded by marshes, inhabited by a peasantry wholly
 “ unconnected with commerce, removed from the sea-shore, and

“in the very heart of the district, no disease having been discovered in any other part of the island, all combined to impress upon our minds that the disease before us was the offspring of the soil; nevertheless, conceiving that it was not only of a malignant, but also of a contagious nature, we considered that it was that particular description of disease which demanded the strictest measures of precaution.”

Sir Thomas Maitland states “it was almost a proscribed idea that plague existed there at all,” as well with the inhabitants as the physician of the infected district, and it never seems to have occurred to him that four months might well comprise the whole existence of an epidemic.

The following Table, showing the number of attacks and deaths by Plague in Malta from the 18th May to the 30th of October 1813—after which date no more bulletins were issued—is an accurate transcript from these documents.

Day of the Month.	May.		June.		July.		August.		September.		October.	
	Attacks.	Deaths.	Attacks.	Deaths.	Attacks.	Deaths.	Attacks.	Deaths.	Attacks.	Deaths.	Attacks.	Deaths.
1	..	..	13	18	43	42	27	50	13	37	11	12
2	..	..	17	13	34	44	41	48	53	33	10	16
3	..	..	11	19	46	53	39	27	23	32	4	15
4	..	..	31	16	53	43	22	47	15	28	9	7
5	..	..	22	24	57	49	24	43	33	33	9	6
6	..	..	14	19	54	58	20	35	32	34	9	14
7	..	..	11	28	37	55	25	37	14	37	1	13
8	..	..	16	24	51	51	28	14	15	31	3	9
9	..	..	23	32	30	52	28	16	14	29	3	8
10	..	..	36	27	56	56	24	28	22	25	4	5
11	..	..	40	33	60	63	26	16	14	17	8	3
12	..	..	14	33	54	59	26	31	7	26	3	5
13	..	..	17	36	51	55	29	31	18	17	2	4
14	..	..	15	19	30	65	36	29	14	17	3	3
15	..	..	16	19	32	67	28	34	22	30	5	5
16	..	..	30	23	37	36	28	29	8	23	3	5
17	..	..	25	28	47	50	28	32	20	12	8	5
18	3	8	24	21	29	41	25	38	16	20	6	4
19	11	10	23	18	47	43	27	27	19	24	6	7
20	5	6	34	24	41	41	19	32	9	21	5	10
21	5	6	19	24	30	55	23	32	7	12	4	2
22	3	4	30	29	39	48	17	34	6	12	6	4
23	3	7	42	35	43	45	23	33	12	16	4	7
24	4	4	36	23	41	44	30	34	14	11	7	6
25	10	5	36	34	51	53	12	31	9	11	1	2
26	17	5	39	39	61	47	18	38	10	19	2	3
27	10	7	46	37	36	64	17	27	19	12	5	5
28	12	16	50	44	50	49	25	25	13	15	4	1
29	15	10	48	47	49	53	15	29	9	14	..	5
30	16	12	44	53	38	63	20	28	11	16	..	5
31	11	18	..	..	41	58	32	26	..	..	..	..
	125	118	822	829	1,368	1,602	782	981	491	664	145	196

The excess of the deaths over the attacks in this table shows, that, notwithstanding the severest penalties were enforced against persons concealing the illness of themselves or others, yet many cases of plague must have escaped the vigilance of the Committee of Health ; for, upwards of one-seventh of the fatal cases became known only after the death of the patient ; yet, in the most mortal epidemics, some of the plague-stricken recover. It would hence appear that neither the fear of punishment, nor the instinct of self-preservation in a population thoroughly imbued with the doctrine of contagion, could enable the authorities of Malta either to trace every case of plague, or to carry fully into effect the separation of the sick from the healthy ; thus proving, in the very stronghold of quarantine faith, the utter failure of restrictive measures to exterminate pestilential disease.

I would direct attention in the following table to the deaths of four surgeons, so late as August and September, indicating that an epidemic, which for several months had been resisted by the husbands, or brothers, in daily intercourse with the sick, had almost simultaneously attacked their wives or sisters.

Except with surgeons and the better classes, the designation or employment of persons is not stated in the bulletins till the later months of the epidemic. It is, in consequence, impossible before this to discover how far the disease attacked those having direct intercourse with the sick. The deaths of six criminals at Fort Manoel in May and June, in addition to those attacked in the Grand Prison, are noticed, but whether employed as beccamorti does not appear.

TABLE showing Attacks among Persons supposed to be more peculiarly exposed by immediate intercourse with the Sick.

* Those marked with an asterisk do not appear a second time in the Bulletins, and therefore probably recovered.

NAME.	Employment.	Date of Attack.	Date of Death, or Result.	Street or Place.
Dr. G. Scifo - -	Surgeon -	16 June	Recovered	S. Teatro.
Carlo Grech - -	Do.	22 „	22d June	Maltese hospital.
Salv. Bardon - -	Do.	4 July	Recovered	Fort Manoel.
Salverio Musci - -	Do.	14 „	16 July	Plague hospital.
Samuale Caruana - -	Do.	18 „ *	Unknown	S. S. Lucia.
Salv. Pisani - -	Do.	„ „	21 July	Vittoriosa.
F. Cortesi - -	Do.	27 „	6 Aug.	Plague hospital.
O. Luca - -	Do.	28 „ *	Unknown	Do.
Onoralo Deluca - -	Do.	—	1 Aug.	Do.
Franc. Castellana - -	Do.	—	5 „	Do.
V. Marciretto - -	Do.	5 Aug.	10 „	Do.
E. Santilli - -	Do.	8 „ *	Unknown	Do.
Luigi Mazzei - -	Do.	10 „	Do.	Do.
Felice Brignone - -	Do.	„ „	13 Aug.	C. Zebbug.
Domenica Brignone - -	His sister -	„ „	„ „	Do.

NAME.	Employment.	Date of Attack.	Date of Death or Result.	Street or Place.
Leone Gravagna -	Surgeon -	—	16 „	148 S. Mercanti
Emm Micalleff -	Do.	—	29 „	C. Curmi
Anna Micallef -	His wife -	29 Aug.	2 Sept.	Do.
Giov. Briffa -	Surgeon -	„ „	30 „	Do.
Vin. Briffa -	His wife -	„ „	—	Do.
Car. Ebeir -	Beccamorto	8 Sept.	11 Sept.	Rabbato.
Gio. Tr. Falzon -	Surgeon -	—	16 „	Do.
Ant. Falzon -	His sister -	17 Sept.	18 „	Do.
Gaet. Zammit -	Beccamorto	16 „	18 „	Do.
Car. Madrenza -	Surgeon -	17 „	19 „	8 St. Guiseppe
Pietro Soliman -	Beccamorto	20 „ *	Unknown	Lazaretto
Akae Imhammet -	Servant -	—	3 Oct.	Plague hospital.
Guis. Portelli -	Beccamorto	—	4 „	Rabbato
Lorenz. Corradi -	Do.	4 Oct. *	Unknown	Barrac.
Mar. Spiteri -	Do.	12 „	16 Oct.	C. Siggieui.
Elia Adatt -	Servant -	15 „	17 „	Lazaretto, servant to Jewish surgeon.
Sal. Gauci -	Beccamorto	16 „ *	Unknown	Lazaretto.
Fran. Pace -	Do.	—	18 Oct.	Do.
Guis. Martino -	Cook -	17 Oct.	19 „	In Lazaretto
Francesco -	Servant -	—	8 Sept.	Plague hospital, Siggieui.
Vin. Micallef -	Do.	—	5 „	Do.
Carlo -	Beccamorto	5 Sept.	8 „	Musta.

In this table I have given the names and dates of attack of all I can find who may be supposed to have been peculiarly exposed to contagion from the sick.

The lateness of attack of more than two-thirds of the surgeons and of all the beccamorti will not escape notice. The deaths of six surgeons in the Plague hospitals—a large proportion, probably—will also attract attention. But it may save hasty conclusion to keep in mind the long resistance to the disease of those individuals; the number of surgeons attacked in other places; the few altogether of the profession who suffered, compared with the great number employed—upwards of 100; also the unfavourable situation of these hospitals (in the ditches) as well as their crowded state and want of cleanliness; and the complete exemption of all the surgeons and servants in the military pest hospital, though, as Sir Brook Faulkner observes, the latter were “*necessarily in contact with the individuals who had the Plague.*”

It is impossible to ascertain how many medical practitioners attended cases of plague; but of thirteen in Valetta and Floriana who report the recovery of patients under their care in July—five were attacked, of whom three recovered and two died. The subject of one of these deaths was Dr. Leone Gravagna, who

attended Borg's family; and it is stated by several most respectable contemporaries of his own rank, that he contracted the disease through money received from a carman, as he never visited any sick after Mrs. Borg's death.

Dr. Gravagna lived at 148 Strada Mercanti, near to the most infected part of the town; another in Strada St. Lucia, a street remarkable for the disease; a fourth, in a small shop and house 68 Strada Teatro. The second fatal case, Mr. Madrenza, had attended a case on the 10th, and died on the 18th of September. He resided in the same street (St. Giuseppe) as his patient, in which "towards the middle of September," says Dr. Calvert, "the contagion appeared to revive," and "several of the guards" and others were attacked.* By reference to the maps the situation of Strada St. Giuseppe will be seen to afford reasonable grounds for suspicion, that locality was not unconcerned in the revival of the disease.

Only three villages seem to have had medical men attacked, namely, Curmi, Zebug, and Rabbato. The first lost two at the end of August; the second, one on the 13th of that month; and the third, one on the 16th of September. Of three medical men in Vittoriosa, one was ascertained to have been attacked and died.

There can be no doubt that many others were employed in a population amounting to about 45,000. But whatever construction we put upon those cases, it may be well to consider the localities in which they resided as well as the mere circumstance of communication with the sick. The influence of the former probably manifests itself in the fewer attacks and deaths among those living in Valetta and Floriana than in the hospitals; but it becomes more apparent by the fact, that in fifteen other infected places, towns, and villages, containing about the same amount of population, and having each, probably, from one to three medical men, no attack is recorded among them. Nor should we lose sight in any comparison of the aggregate accidents in the medical section of the population, of the amount of fatigue, anxiety, and exhaustion, suffered by those in towns, hospitals, and villages respectively.

Again, we find from twenty to thirty cases of plague treated in the Military Pest Hospital, and not one attendant suffered. This hospital is a detached, airy, and commodious structure, and was for several years afterwards the hospital of the regiment

* Med. Ch. Trans., vol. vi.

s tioned at Floriana. But here something more important is established ; namely, the benefit of proper care of the sick, the majority of whom recovered.

Nor is the history of the Grand Prison, as compared with the ravages of the disease in the Barrache less conclusive ; in the first three months of the epidemic an occasional case occurred on the ground floor, yet there was no general prevalence of disease, and among those better placed not one attack.

The influence of certain conditions is more manifest in the attacks among the expurgators between the 22d August and 15th October. The attacks were forty-eight, the deaths twenty-three ; both far exceeding proportionally those in houses at Valetta and Floriana at the same period. These men were placed in nearly parallel circumstances to the convicts employed as beccamorti, *i.e.*, living in similar Barrache at Floriana, dressed in oil-skin, and engaged in laborious work in the worst nests of the disease, where either the death or removal of the inhabitants had in many instances left no person to communicate plague to them. In a more general purification, from the middle of November to the end of December, this class did not suffer. The concurrent atmospheric causes were then wanting—the epidemic had ceased.

The accidents then among those ascertained to have been directly or indirectly exposed to the disease were as follows :

	No. Employed.	Attacked.	Died.
Surgeons in Private Practice - - -	Unknown	10	7
Surgeons in Plague Hospitals - - -	Ditto	10	6
Beccamorti and Servants - - -	Ditto	14	11
Expurgators, whitewashers, and carmen -	Ditto	48	23
Total - - -	—	82	47

When did they consider they had “arrived at perfection” in the Plague of Malta?—Not till the arrival of Sir Thomas Maitland, on the 3d of October, about which time a decided favourable change in the winds, weather, and sanitary state of the inhabitants, is invariably experienced. Previous to this the plague had begun to decline, as the following rate of progression will show : “ April, 3 deaths ; May, 110 ; June, 800 ; July, 1,595 ; August, 1,042 ; September, 674 ; October, 210 ; November, 53.” “In Valetta alone,” says Dr. Hennen, “it was as follows :— “ April, 3 deaths ; May, 48 ; June, 235 ; July, 616 ; August, 275 ; September, 44 ; October, 2 ; after which no more deaths “ occurred in the City” (p. 505) ; and a very similar progression

and decline occurred in the villages. The operation of a similar cause is shown in the number of towns and villages infected in the same months, being 1, 17, 25, 26, 17, 12, 12, and 4 respectively.*

The exertions of Sir Thomas Maitland were reserved for the disease in the villages, more especially in Casal Curmi. This unfortunate village had three deaths in May; fifty-six in June; 115 in July; 142 in August; but the deaths having increased to 181 in September, and continuing throughout October, though in considerably diminished numbers, a suspicion arose that the disease was kept alive by infected articles, which the inhabitants had secreted. "The knowledge of the above circumstance," says Dr. Tully, (p. 59,) "compelled His Excellency to have recourse to "the novel and extraordinary plan of converting a populous "country town into a species of Lazaretto, shutting the inhabi-

* DEATHS from PLAGUE among the Civil Population in the Towns and different Villages of Malta in each month during the Epidemic of 1813. According to Dr. Hennen.

The towns are marked *, and the villages †.

TOWNS AND VILLAGES.	MONTHS.								General Total.
	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	
*Valetta	3	48	235	616	275	44	2	..	1223
*Floriana	2	142	472	172	83	26	..	897
*Vittoriosa	2	10	13	8	..	..	..	33
*Cospicua [or Burmula]	1	9	2	..	..	..	..	12
†Zebbug	2	25	145	271	232	16	..	691
†Luca	1	22	18	1	..	..	..	42
†Birchircara	20	65	89	74	28	4	280
†Musta	1	8	15	8	..	..	32
*Notabile [and Rabbato].	1	2	9	6	10	8	8	44
†Curmi	3	56	115	142	181	98	19	614
†Zeitun	1	4	6	..	..	..	..	11
†Zabbar	1	6	28	9	..	..	..	44
†Gudia	3	2	1	..	..	..	..	6
†Sliema	1	1	1	..	..	..	..	3
†Lia	4	..	..	..	..	..	4
†Attard	1	..	1	..	..	..	..	2
†Micabiba	2	4	1	..	..	..	..	7
†Dingli	1	..	1
†Nasciara	5	3	..	..	..	..	8
†Zurricco	3	3	..	..	..	..	6
Messida	1	3	1	..	..	..	5
†Tarxien	1	..	..	..	..	1
Marina	3	1	..	..	..	..	4
†Siggieni	8	1	..	9
Bighi	1	7	8	1	..	17
Marsa	1	..	..	..	1
Calc Salva	1	1	..	..	..	..	..	2
Isolotto	1	..	1
Sopra Bast	2	4	..	..	..	..	6
Campo Santo	1	2	..	3
†Paolo	1	1	1	..	..	3
Fort Manoel	38	235	71	21	..	..	..	365
Lazaretto	2	5	6	22	24	26	22	107
Coradino	2	..	..	..	..	..	2
Pieta	1	..	..	..	1
Total	3	110	800	1,595	1,042	674	210	53	4,487

“ tants within their own precincts by the erection of double walls,
 “ and by the establishment without these walls of cordon over
 “ cordon.”

By the kind assistance of Dr. Paolo Vella, the Syndic, and Dr. Gatt, together with notes taken by the Baron Azzopardi, an eye witness, I am enabled to speak with more confidence on the progress of the disease in Zebbug than in other villages.

In 1813 Zebbug had no case of plague till the 25th of May, and up to the 25th June only eight deaths in three or four families. On the appearance of plague in Valetta, the authorities of Zebbug divided the town into three districts, with three deputies for each, who attended the interment of the first victims, preceded by beat of drum and armed men. About the middle of June a civic guard was formed to prevent intercourse Curmi, with and subscriptions were raised for the support of the poor. On the 25th June a committee of health was formed to visit daily suspected houses, to call in medical aid, to distribute food and charity to the infected, and to place them under observation. Women were forbidden to loiter about the streets. Change of domicile, or entering any houses but their own, was strictly prohibited, and seclusion was enforced, from the 25th of July, by advice of the Proto Medico. Up to the 25th of August the sick and their families (except convalescents and orphans) were without hospitals or any other refuge than their own houses, in which they were now strictly segregated, the sentries in every street having orders to mark for quarantine, or even to shoot, the refractory ; but from this date the sick of the poorer classes were removed to 104 barrache, which the committee of health had applied for on the 7th of August. These barrache were erected in a level field of about one acre and a half at most, and without the shade of a tree to protect them from a scorching sun in the hottest season. In 15 days 189 died. Troops were stationed in Zebbug on the 29th of August, and more were sent in September, and these are said by Sir Thomas Maitland to have arrested the disease in a month, yet 107 additional victims were swept off by the end of September from an already decimated population, and nine more deaths are noticed in the bulletins, the last on the 26th of October.

Up to the end of July the number of attacks noticed in the bulletins is equal to deaths ; from that date to the end of September the former fall short by 113, showing that many were found dead in their houses—a conclusion borne out by the marks of the police still to be seen on dwellings in the village. That a great mortality also took place in the barrache appears from the following extract from a certificate by the Curate Scicluna, dated 28th September 1813 : “ Having been employed the whole day

“ in administering the Sacrament to the infected I could not
“ register the deaths on the proper day, the more especially as the
“ greatest part of them died in the barrache ; when, therefore,
“ the contagion ceased they were noted according to reports
“ obtained from their relations or neighbours.”

Proof of the disastrous consequences of restrictions is furnished by the places under cordons and strict seclusion in September, namely, Zebbug, Curmi, and Birchircara. These villages, containing altogether 14,159 inhabitants, had 487 deaths in that month, while in the remaining population, numbering 82,244, enjoying more freedom, but in many instances under similar sanitary defects, the deaths did not exceed 187 in the same period, and 127 of these occurred in Valetta and Floriana, where restrictive measures were pursued unremittingly from the beginning.

The exemption of the soldiers composing the cordons in the villages considered so corroborative of the efficacy of quarantine by Sir Thomas Maitland directly proves the opposite. They were on the outskirts of the village at Curmi, at Birchircara, and Rabbato, with pure air both in their tents and houses, as well as when on duty, an advantage which was studiously withheld from the inhabitants. The thirty soldiers who arrived in Zebbug on the 29th of August were, it is true, quartered in the town, but in addition to daily out-door employment they were accommodated in a very well ventilated corner magazine or shop, with doors opening into two streets, that suffered little from the disease. The reinforcement in September was in tents. Rabbato, as miserable a village as Zebbug, had up to the 3d of July three deaths, all in one family. From that date up to the 10th of September, at intervals of a few days, sixteen more occurred, making in all only nineteen in a period of upwards of five months. The disease, Dr. Calvert says, re-appeared at Rabbato. In the following six weeks, (with guards doubled,) namely, from 10th September to 25th October, the mortality (nineteen) was equal to that of the five preceding months. In Notabile, adjoining Rabbato, a town of mansions occupied by the clergy and gentlemen, at present containing a population of 500 to 600 inhabitants, probably much augmented in 1813 by persons who took refuge there, no case is recorded except one in the prison.*

* Dr. Pietro Parisi, in his account of the Plague of Malta published at Palermo, 1603, states “it commenced in the beginning of June, 1592, and terminated at the end of September, 1593, in which period it made three severe visitations. In the first it was moderate, and lasted from June to September, 1592, killing 300 persons; in the second it was more severe, destroying 500, and lasted from the 12th of November till January 1593; in the last it was still more destructive, carrying off about 3,000 persons, and, as said before, disappeared at the end of September.” (p. 6.)

LOCAL CAUSES.—Valetta, as a whole, is a clean well ventilated town, and there are few localities in it, except the Mandraggio, that from outward appearances would be pointed out as the probable habitat of disease. On a closer examination, however, it will be found to be a mixture of palaces and hovels—Belgravia and St. Gilès,—not only close to each other, but frequently in the same tenements. In the best streets, and forming parts of the best houses, there are cellars, small shops, and mezzonini or entresols, consisting often of a single room, containing a large family. The ground floor is, in many cases, over the water-tank, to which access is had by a small shaft; add to this a privy—and, in the absence of all ventilation, light, or outlet, except by the door, the accumulation of stagnant animal effluvia in these hovels is evident. To the stranger they are intolerable, and even the inmates desert them to sleep on the pavement in the summer months. These are the dwellings of the lower class of artisans—in which they carry on their trade, and lodge their families. I have frequently entered them, and found them very similar in size, darkness, filth, and wretchedness. They are often vaulted, and, in some, a floor of wood is placed about the spring of the arch, thus affording a dormitory, in which a numerous family pass the night. It was in such a hovel that Borg's family resided, having directly in front of it a church from sixty to seventy feet high.

These dark and ill-ventilated abodes furnish a large proportion of the glandular affections met with in the hospitals of Valetta.*

What are called mezzonini are inhabited by a better class, and have the advantage of a staircase and window, but these are small, and seldom placed in such a position as to afford a free current of air. In height they range from eight to ten feet, are small, dark, noisome, and have little advantage over the rooms underneath, except in being off the ground. The free passage of air through wide streets, placed at right angles, and the occupants' habit of sitting, or sleeping, during the hot months at their doors, can alone account for their comparative immunity from disease in ordinary seasons. But the pale cadaverous hue to be seen in many of them, especially the women, leaves little doubt of the injurious effects of these abodes.

The apartments of the proprietor, the entrance to which forms the middle door of the house, present a very striking contrast to those above described, for which he receives a large rent, the limited space of a fortified town leaving no choice. This portion of the building has generally a court, into which windows open, in addition to those towards the street, affording light and ventilation to every room. With filth and wretchedness on

* See note B at the end of this Report.

The houses are marked in Black the Merzainos in Red & the ground floors and Cellars in Blue Ink - The figures indicate the number of the habitation

The figures in the centre of the squares show the number of Cases in that block of houses.

The figures following the name of the Street indicate the number of Cases of Plague in that Street.

The Red line includes the highest and best part of the Town, on the outside of that the ground slopes in every direction.

The Streets coloured in Red indicate the habitations of the better classes or shops - those in green the worst and generally the poorest localities - those in both colours a mixture of good & bad.

The ✠ indicate Churches.



Department of Gov^t Works
Valletta, Jan^r 1854.

W. Lamb Arrowsmith, C. E.
Sup^r of Gov^t Works



either side of the entrance, a stranger would little expect to find so much space and elegance in the apartments of the higher classes in Valetta. Ascending by a spacious staircase to the third floor he enters rooms, large, lofty, and pure—the courts acting as ventilating shafts, in the benefit of which the poor underneath rarely participate.

Without these courts the houses, even of the better classes, would become intolerable in summer; for most of them being built back to back, nothing like ventilation could otherwise be had. In this predicament are the lower orders placed; having no counter-opening to the door, to relieve the stagnating atmosphere. The lower parts of the town at night, especially in sirocco winds, are very offensive, there being very few public privies or other depositories for nuisances of any kind. No town, probably, as regards the poor, is maintained in outward cleanliness at a greater sacrifice of internal comfort and purity.

It is difficult to imagine any town offering greater natural facilities for drainage than Valetta, sloping as it does in nearly every direction towards the sea. The construction of the drains I believe, is good, but the want of means for flushing in the dry months, from April to October, and the porous nature of the rock through which they are cut, must add to the unhealthiness. On entering several of the best shops in the hot months, I have been forced to make a rapid exit. Indeed, on entering many of the best houses, the smell of imperfect sewerage is immediately perceived. On the ground floors we may imagine that these things are much worse with the poor.

I will attempt to describe some of the localities most affected by plague. First on the list is the “Mandraggio”* which has been frequently alluded to by travellers as containing within a small space, a poor and wretched community. Lying in a hollow on the western side of the town, it receives little of the general traffic or thoroughfare; but is approached (except at one point) by small archways, leading under lofty houses, which nearly surround it on all sides, and so effectually inclose it, that one may perambulate Valetta for years without discovering the existence of such a place. Its lowest portion, next the quarantine harbour, terminates in a *cul de sac*, where is placed the opening of a large sewer, which receives the surface water of a great part of this quarter. Curiosity only can induce any respectable person to penetrate its mazy and narrow alleys, which run between lofty houses, where neither sun

* “Mandrachio, the inner port of a harbour,” which it was originally. The block of houses, within which is the Mandraggio proper, covers about two and a half acres, and contains about 3,000 inhabitants, 1,600 of whom occupy the ground-floors and mezzonini of the interior.

nor air can penetrate. Here many of the poorest among the population reside ; and squalor, filth, and wretchedness meet one at every step. Damp, dark, and cheerless, with an atmosphere at all times noxious and stagnant, here is every thing promotive of disease, and we can only attribute exemption at any time from mortal sickness, to that power of habit which enables the human constitution to resist such deleterious influences.

Similar to the "Mandraggio" in the lowness of its situation and the poverty of its population, is Strada Pozzi, which lies at the north-east angle of the city, and is considerably below the fortifications. One portion contains several ground-floor dwellings, running parallel within a few feet of each other, leaving a very narrow lane, shut in by lofty buildings on either side. Another consists of a row of hovels within a few feet of the wall of the prison, which completely obstructs ventilation. Here, as in the Mandraggio, the passage of superficial drains and under-ground moisture keep the air muggy and unwholesome, offering a striking contrast to the sunny, dry, and well-ventilated ramparts in the vicinity. Intersecting Strada Pozzi, is Strada San Nichola, also notorious for cases of plague, which, though on the ascent of the hill towards the better parts of the town, is a narrow street and suffers from want of ventilation. Here, also, are numerous ground-floors, and small mezzonini, inhabited by a poor population.

The number of habitations attacked on the higher ground being about as one to six of those on the lower, leaves no question as to the influence of elevation, the ratio of cases increasing in every direction as we descend.

Strada San Antonio, which fronts the harbour, presented a striking contrast with Strada Saluto, immediately behind it ; for we find every habitation exempt till we arrive at No. 28, where the ventilation becomes obstructed by houses between it and the harbour.

Strada Saluto, a very narrow and filthy street, inhabited by the poorer class, furnished no less than fifty-five cases from the dwellings on both sides. On arriving at No. 31, however, and from this to No. 46, which space enjoys a similar open exposure with the lower parts of Strada San Antonio, there was not one case, although several of the habitations are more miserable than those where the ventilation is obstructed.

The habitations attacked in "Strada Irlandese," were ground-floors, ten or twelve feet below the level of the roadway, and having a dead wall within four or five feet of their doors. The upper floors of these tenements, inhabited by the same class, but rising above the wall, and therefore open to the harbour, seem to have been entirely exempt.

Two dwellings in "Strada Sperone," about ten yards from Fort St. Elmo, which rises forty or fifty feet above them, furnish the next cases. Close to this, but sunk from thirty to forty feet deeper, are Strada Fontana and St. Guiseppe; they are narrow, dark, and damp. The upper floors of the former rise above the sea ramparts, and enjoyed a remarkable exemption, compared with those underneath, and in Strada St. Guiseppe behind, which had cases on every floor.

Proceeding round the city, we find that wherever similar local conditions obtained, the cases were numerous. In the highest portion of the town, overlooking Floriana, we find only one tenement infected, though nearly all are occupied by a poor population; whilst Strada Torre and a very narrow lane leading off from Strada Regina in the immediate vicinity, had no less than sixteen dwellings infected.

The influence of habitation may be illustrated by a comparison of the streets "Mezzodi" and "San Nichola;" whilst the former, inhabited by the rich, shows not a single case, the latter, inhabited by the poor, yields no less than 117.

Again, in Strada Forni, one of the best streets in Valetta, the only cases were four in the few habitations, at its lowest part, which are occupied by the poor.

Finally, there was nearly a continuous exemption of about one-third of the town; and that not only the highest, but in every other respect, in striking contrast with the portion chiefly affected.

I have described these localities as I found them in 1851; in a very different condition as to cleanliness from the same places in 1813, when pigs, goats, rabbits, and poultry were to be found not only in the thoroughfares of the town, but the habitations of the poor. These abuses have been now nearly rooted out by a vigilant police, and to this, and to sanitary improvements of every kind, a sunny and dry climate, the regular and temperate habits of the people, their festivals, bathing, and other amusements which attract them from their hovels, Malta probably owes its long exemption from Plague.

I have to regret a want of military medical records to show the diseases among the troops in 1813; like many public documents of the time, they were probably suspected and destroyed.

I am informed, however, by Dr. Bardon, who was for several months in attendance at the Pest Hospital in Fort Manoel, that there were numerous febrile attacks among the richer class; that the disease, with great numbers who were sent into quarantine, did not present any symptom beyond that of common fever, and

appeared, from the numerous recoveries, to owe the arrest of its course to the change into better air.*

To prove the benefit of segregation in a disease extending by contact, and not by infection, Dr. Hennen adduces numerous cases which occurred immediately under the windows of a military hospital—now the residence of the English bishop—and in the cellars under the St. Augustine convent, without any of the inhabitants above being attacked. But in addition to there being no direct communication in either case, both present nearly as great a contrast, in a sanitary view, between the lower and upper portions as there is between the cellars and superstructure of Somerset House. The cellars under the bishop's house have a high wall within eight or ten feet of their doors, with no other means of light and ventilation—those under the convent are dark and damp, also without opening, except the doors, while the apartments above are spacious, dry, and well ventilated.† “We have seen, says the same author (page 528) “how rapidly the disease “spread among all (?) classes, but it was in low, damp, ill-ventilated “places, such as the Mandraggio, that it assumed its most violent “and destructive form. The cellars and mezzonini seemed to be its “favourite places of residence ; and as an old resident practitioner “remarked to me, in the course of professional conversation on the “subject, it was a disease that seldom went upstairs.” Yet this remarkable and important fact could not suggest a doubt as to its propagation by contact.

* NUMBER of Patients attacked with Plague, treated by me in the Lazaretto Hospital, Fort Manoel, Valetta, in each month from June 1813 to February 1814 inclusive.

MONTHS.	Attacks.	Recoveries.	Deaths.
June - - -	292	78	214
July - - -	108	65	43
August - - -	273	207	66
September - - -	49	29	20
October - - -	137	120	17
November - - -	112	99	13
December - - -	28	24	4
January - - -	24	17	7
February - - -	15	12	3
Total -	1,038	651	387

(Signed)

SALVATORE BARDON,
Med. Chirg.

Malta, 17th Sept. 1851.

† The two monks in this convent, mentioned by Dr. Hennen as having died, are returned in the bulletins as “Fratelli,” who perform menial work, and go to market ;

At 69 Strada Mercanti, there is a very large corner house, inhabited, in 1813, by numerous poor families, amounting to about 100 individuals; fearing that if the plague entered here it would prove destructive to all, it was placed in strict quarantine and not a case occurred. What are the sanitary conditions of this tenement compared to those that were infested by the plague?—It is placed on high ground, has excellent drainage, and a large cortile or ventilating shaft which secures ventilation, light, and exemption from damp, whilst, though the inmates are crowded, none live on the ground floor; in fact, its construction differs little from the best houses.

The town of Floriana, situated about a quarter of a mile from Valetta, contains, if possible, a more dense and poorer population. The streets are narrower, and in several instances terminate in *culs de sac*, producing great stagnation of air. Good houses are here mixed up with ground floors and mezzonini. Until lately the sewerage was notoriously defective, and has been considered the cause of occasional bad fevers among the military and strangers residing there.

We have seen that the lowest and poorest localities of Valetta were among the first attacked; and here the usual concomitants, crowding and want of ventilation, existed to the greatest extent.

It appears by the following table that the villages which suffered first, longest, and to the greatest extent, were generally those on the lowest levels,* and the most densely populated, several of the highest and least populous places being entirely exempt;—thus taking the first twelve, the aggregate population of which amounts to 20,845, we find that two showed the disease as late as September and October, and that the number of deaths was only eighty-one, or 0·34 per cent.; while in the succeeding eleven villages, having a population of 31,363, the number of deaths was 1,721, or 5·48 per cent.; showing not only a remarkable exemption in the highest and least crowded, but at

indeed, one of them is termed a servant, and that he had contracted the disease by purchasing “some old clothes in the Mandraggio.” I have ascertained from Sacerdote Chappel that this was the case—that both were servants, and the first attacked (7th August) confessed to having gone out at night by the vaults of the church. The attack of the second, therefore (on the 10th), was probably contracted in the same place, and not from attending his comrade, as alleged by Dr. Hennen.

According to the Baron de Piro, a priest of this convent died, as early as the 25th April, under most suspicious symptoms, supposed to have been contracted at Sliema; yet there was no extension of the disease in the convent. His grave is one of those barred, and bears the above date.

* Zebbug and Rabbato appear to have been exceptions in point of elevation.

the same time suggesting every doubt of the alleged power of a few cases, under such advantages, to multiply the disease, as the restrictions were trifling.*

TABLE, showing the Casals or Villages of Malta, placed in the order of their relative Elevation, commencing with the highest above the Sea Level, with their respective Populations, Deaths by Plague, and the months in which these occurred.

CASALS OR VILLAGES.	Probable Amount of Population in 1813.	Deaths from Plague.	Proportion of Deaths per cent of Population.	Month in which it		Total Number of Months in each.	Aggregate per Centage of deaths to Population.	
				Appeared.	Ceased.			
Notabile and Rabato	4,542	44	0·96	May .	Nov. .	7	} 0·34	
Gargur	1,139	None.	..	..	..	..
Naxiaro	2,965	8	0·27	June .	July .	2		
Dingli	624	1	0·16	October	October	1		
Zurrieco	3,618	6	0·16	June .	July .	2		
Micabiba	814	7	0·86	May .	July .	3		
Crendi	1,052	None.	..	..	..	..
Siggieni	3,373	9	0·26	Sept. .	October	2		
Safi	227	None.	..	..	..	..
Chireop	315	None.	..	..	..	..
Gudia	1,040	6	0·57	May .	August	4		
Asciak	1,136	None.	..	..	..	..
Total	20,845	81	
Zebbug	4,776	691	14·46	May .	October	6	} 5·48	
Luca	1,268	42	3·31	May .	August	4		
Zeitun	5,440	11	0·20	May .	August	4		
Tarxien	1,011	1	0·09	May .	July .	3		
Zabbar	3,537	44	1·24	May .	August	4		
Musta	3,369	32	0·95	June .	Sept. .	4		
Attard	907	2	0·22	May .	July .	3		
Lia	1,039	4	0·38	June .	July .	2		
Balzan	633	None.	..	..	..	..
Birehicara	5,253	280	5·33	May .	Nov. .	7		
Curmi	4,130	614	14·86	May .	Nov. .	7		
Total	31,363	1,721	
TOWNS.								
Valetta	25,546	{ 1,223 }	2,120	8·29	{ April .	October	7	} 4·90
Floriana		{ 897 }			{ May .				October	6
Senglea . . . . .	..	One.	..	..	..	..
Cospicua	18,649	{ 12 }	45	0·24	{ May .	July .	3	
Vittoriosa		{ 33 }			{ May .				August	4
Total	44,195	2,165	
Grand Total	96,403	3,697	

N.B.—The deaths in Fort Manoel and Lazaretto, and in some small places, are here omitted.

* Dr. Hennen erred in stating that the village of Crendi “is on low ground :” for it not only stands higher than Zebbug, with which he contrasts it, but possesses that greater dispersion of the houses and other facilities for ventilation that seem to have been the source of exemption in other places.

Casal Curmi, so remarkable for the persistence of plague, is situated at the extremity of an extensive marshy flat, recovered from the grand harbour, and has always been notorious for severe autumnal fevers. It contains a very poor, filthy, and crowded population, many of whom keep pigs, which are frequently in the enclosure or even in the adjoining room with the family. The streets are narrow and tortuous, and so little intersected that strong winds would make little impression on any noxious atmosphere wafted hither from the adjoining low grounds, or arising in the noisome hovels of the inhabitants. Nearly surrounded by rising ground, except on the side of the marsh, which looks to the north, this village can derive little benefit from the S.E. winds, which usually prevail in the month of September; and to this, and the seclusion to which its inhabitants were subjected, rather than to the alleged thefts of infected articles, we may reasonably ascribe the persistence of plague in 1813. If a low sanitary condition of a population has any share in the maintenance and aggravation of epidemic disease, it is difficult to imagine any place more favourable than Casal Curmi.

The other villages are placed on higher ground, but differ little from "Casal Curmi" in the arrangement of their narrow streets; or in the construction of the houses, which are dark, small, seldom having more than one room, and that on the ground. It will be readily conceived why the larger of these villages, containing from 2,000 to 5,000 poor inhabitants, should have been among the first to be visited by the plague—for no houses could be more closely thrown together—more unlike rural habitations, or occupied by people more deficient in domestic cleanliness. It would appear that they did not escape in former visitations; for in that of 1592-3, described by Parisi, every part of the island seems to have suffered. The exemption of six places in 1813 implies probably improved condition rather than accident.

Dr. Luigi Gravagna, Dr. Hennen, and Sir Thomas Maitland state, as conclusive evidence of the spread of the disease by contact, that the inhabitants of Senglea remained exempt, having cut off all communication with other towns, while plague raged in Vittoriosa, only divided from it by about a fifth part of a mile of water,—and in Cospicua, only separated by a bastion.

Senglea is built on a narrow peninsula, not unlike that of Valetta; its principal street running along the ridge is equal in length and width to any in Valetta, and the greater part of the town stands considerably higher than Cospicua, and its ventilation is less obstructed by the fortifications than either that or Vittoriosa. Most of the narrower streets and lanes which branch off at right angles, are open to the harbour at both ends, affording excellent ventilation. On passing the bastion above mentioned,

the ground on which Cospicua is built falls abruptly about forty or fifty feet below Senglea, and a considerable part is not much above the level of the creek. Here is a large and densely crowded population closely hemmed in by high ramparts on one side and rising ground on the other, with narrow circuitous streets and alleys, the whole forming a great contrast to the town of Senglea. The town of Vittoriosa, though standing higher than Cospicua, is also much shut in by the dockyard buildings, Fort St. Angelo, and ramparts, and has few open spaces, or wide streets, admitting ventilation, being remarkable for narrow circuitous lanes, crowded by a low and miserable population. If a few places in Senglea be questionable in a sanitary view, taken as a whole no one would hesitate in pronouncing it to be in every respect superior to the neighbouring towns. But it is only the comparative exemption of Senglea that requires explanation; for in the bulletin of the 12th of June, there appears the following, under the head "fallen sick:"—"Senglea, No. 45, Strada Crocefisso, Maria Cassar;" and in that of the 14th, her death, at Fort Manoel, is announced.

Both Cospicua and Vittoriosa had very few deaths (45) compared with the numbers of their population (probably about 12,000) as if they had participated in some advantage similar to that so nearly exempting Senglea. Every locality, indeed, on this side of the harbour seems to have suffered far less than Valetta; and the military in this district, as far as the bulletins show, were entirely exempt, though occupying eight different barracks, two of them the worst in the Command, viz, Isola in Senglea, and San Francesco in Cospicua, the latter close to the streets that were chiefly affected.

I cannot find in the "Giornale" or other documents of the period, that Senglea was under different circumstances to Cospicua or Vittoriosa. In the proclamations relating to the prohibition of intercourse, it is always coupled with these cities, and even as late as the 13th of July, where it states that "communication be suspended with regard to the towns of Vittoriosa, Senglea, Cospicua, and Calcara of Vittoriosa, as well *between each other respectively, as with all other parts of the island;*" and Dr. Tully (p. 67) states that "the inhabitants of the *three cities * * ** had recourse to the bold step of cutting "off all communication with the capital."

That communication was kept up with Senglea to the 12th of June, will appear from the following extract from the proclamation of that date: "1st. That no permission be held sufficient to "authorize any one to pass over to Vittoriosa, *Senglea*, or "Cospicua, or into the district of Calcara behind Vittoriosa, unless "such as *may be issued by Government*, and to which the seal of "the Government shall be affixed. 2d. That even such persons

“ as may obtain regular permits, as also the respective boats, shall
 “ be prohibited from disembarking or approaching the shore, except
 “ at the places appointed by Government, where the civil guards
 “ are posted under tents, viz., at Vittoriosa, on the Marina Grande ;
 “ at Senglea, near the Serena ; at Cospicua, near the Convent of
 “ St. Teresa, and at Calcara, wherever the guard may be
 “ stationed.”

The above is the first notice I can find as to prohibition of intercourse with any of the *three* cities, which up to this date appear to have been similarly circumstanced as to quarantine, and it would be safe to say that from 200 to 300 deaths had occurred previously in Valetta and other places. Nor does it appear by information which I have obtained from the Rev. Luigi Pisani, M.D., who was appointed physician to the Pest Hospital at Bighi for the *three* cities, that any difference existed subsequently : they were all in quarantine against Valetta and each other from the 13th July, and not before. Though the conviction of every one that the plague could only travel by intercourse, would very naturally suggest the inference that the exemption of Senglea could only be due to more complete restrictions ; if the town was protected by no peculiar quarantine up to the height of the epidemic, or as far as can be discovered at any time, its exemption may be referred to other causes.

Among the advantages enjoyed by Senglea may be noticed less overcrowding, house-rent being cheaper, so as to enable greater numbers to live in better houses ; a more free exposure to the sea ; but above all, much less severe internal restrictions on the population ; a relief which was also enjoyed by Cospicua and Vittoriosa. In Senglea the houses are superior, and are inhabited by more respectable people, and it has none of the small arched recesses in the fortifications to be found in Cospicua and Vittoriosa, inhabited by miserable squatters, 33 of whom appear in the bulletins.*

The exemption of the monasteries is also offered in support of segregation. The two institutions of this kind in Valetta, the

* In the plague of 1676, which appears to have been subjected to more severe restrictions than that of 1813, all communication was cut off, from the end of April, with Senglea, Cospicua, and Vittoriosa ; and although this continued for forty days beyond the 9th of August, when the disease declined, yet the deaths in these cities amounted to 2,000, 1,500, and 1,800 respectively. The introduction of the plague in this year was attributed to English vessels from Tripoli. The first recognized case was in a girl, the daughter of a dealer in general merchandize ; but, as in 1813, it seems to have excited no suspicion till after the occurrence of other cases. On this occasion, also, there appears to have been considerable and long continued difference of opinion among the physicians as to the nature of the disease, which would seem to show that cases at least simulating plague were not unfamiliar to some of those dissenting. — *Hist. dell. Suc. Religione.*

Santa Catherina and San Ursula, are very large and lofty buildings, and are both provided with a large quadrangular court in the interior, large enough, in the former, for a garden. Looking to the size of those buildings, and the number of members, who do not (in 1852) exceed in both 43, there must be accommodation of the most spacious kind. The Santa Catherina is placed in one of the most eligible parts of Strada Reale, and in addition to rising above the adjoining houses, one side extends for a considerable way down Strada St. Christophoro. The St. Ursula is also a very spacious and lofty structure. Its front and part of one side in Strada Vescovo overlook and are open to the widest part of the grand harbour and expanse of sea. The inmates of the monastery only occupy the upper floors, leaving in Strada Levante several mezzonini and ground floors underneath, the inhabitants of which, though in pratique, were equally exempt—an immunity probably derived from the free exposure to the harbour; for in Strada San Ursula behind, where the entrance to the monastery is placed, there were numerous cases of plague.

These circumstances are so much in accordance with what will be found to obtain, wherever there was free ventilation, or the reverse, that I consider it almost superfluous to describe the monasteries of Santa Margarita, in Cospicua and San Scholastica in Vittoriosa. The first is nearly isolated, built on a similar plan to those in Valetta, and, standing on one of the highest points, has free exposure to the harbour. The San Scholastica has three of its sides closed in by houses in one of the most crowded parts of Vittoriosa, but is otherwise unquestionable in a sanitary view, having a very spacious court in the interior, and, on the side chiefly inhabited, a free and extensive exposure to Bighi Bay. The San Benedetto, at Notabile, containing twenty-nine members, is also isolated and spacious. It stands on one of the highest and healthiest spots in the island, and is separated by fortifications from the village of Rabbato, almost the only place affected in this locality. Here the per centage of deaths, including Rabbato and Dingli, was only 0·96, while in Zebbug, Birchircara, and Curmi, each having about the same population, it amounted to 14·46, 5·33, and 14·86 respectively. Nor was Notabile less fortunate in previous visitations. In 1593, when nearly 3,000 persons died, it had only seven deaths (Parisi, p. 56), and in 1676, when upwards of 8,000 perished, it remained intact (Hist. della Sac. Relig. p. 448).

Locality, however, is not needed to explain the exemption of the monasteries. They possess within themselves abundant sources for the maintenance of health; their large interior courts insuring light, dryness, and ventilation to the whole building. Dr. Hennen computed that there were only about 6,000

attacks in the towns; segregation is therefore unnecessary to explain the exemption of 100 retired ladies, distributed in five spacious and unexceptionable mansions.

There are fifteen convents in the island, which contain (in 1852) 230 members, more than double the inmates of the monasteries. Considering the probable exposure of the former in the infected localities, at the outset of the epidemic, they were nearly as exempt as the latter. As far as the bulletins assist me, out of 20 deaths among 1,007 clergymen, 3 of the Capuchins* at Floriana, and 2 in St. Augustine's, in Valetta, died in convents. Of the remainder, 2 died in the Pest Hospital, 1 in the college formerly of the Jesuits, and 2 in villages, while 10 died in houses situated in the most infected localities of Valetta. The convents are remarkable for good and elevated sites, and, from their size and construction, were free from those conditions which favoured the disease.

The alleged escape of 900 prisoners in the Grand Prison, by means of quarantine, deserves some notice. Had not the bulk of the population, and six entire villages also, escaped, this would be one of the strongest cases brought forward in favour of segregation—not from the circumstance of the disease prevailing in the immediate neighbourhood, for there are numerous and more remarkable examples of exemption under similar circumstances; but that 900 persons thrown together, under the conditions in which prisoners are usually placed, should have remained free. This is the only point requiring explanation.

The prison in question is a lofty quadrangular building, standing on the brow of a hill fronting the grand harbour. It is isolated, being bounded by Strada St. Ursula in front, the ramparts behind, Strade St. Christophoro and Pozzi on either side. It consists of three stories, and occupies a nearly equilateral space about 400 paces in circumference. The interior is now seen to disadvantage: it is neglected, and in many parts dilapidated, the prisoners being accommodated in the new prison, but Dr. Hennen speaks of it as being “conducted on excellent principles; the rooms and airing ground are of ample size; the different grades of crime and the different sexes are duly separated; several useful manufactures are carried on within the prison walls, and the food is wholesome and abundant (pp. 470, 471).” The large quadrangular court, into which very large windows open from the two upper

* The numbers in the Capuchin convents at Floriana are greater (39) than any other; and it is probable that, having to beg their daily supplies of food, they were more exposed than the wealthy orders. The Baron de Piro (p. 47) notices another cause, namely, that those monks visited the sick in the Barrache at Floriana.

floors and smaller ones from the basement, is disposed into separate grounds for exercise, and is exceedingly dry and airy. There is thorough ventilation in all the rooms above the basement; large windows open on both sides, and except in two or three of the cells, windows are placed in all the sleeping-rooms on the ground floor, opening on a spacious colonnade, the only objection being that they are on the same side as the doors.

This prison was common to the whole island, and, except a portion of the upper floor, appropriated to the sick of the Navy; it was then occupied by French prisoners, and the ordinary criminals. Taking the average number of the latter for the last 20 years, viz., 174, the probable number of French would be about as six to one; and as prisoners of war, guilty of no crime, we may assume they had not only better accommodation, but were more indulgently treated than the criminals. The latter inured to the climate, though occupying the worst part of the prison, were infinitely better circumstanced than the inmates of the hovels outside, to which, it is probable, the bulk of them had been accustomed from infancy. Under cleanliness, good diet, fresh air, and social intercourse, for the construction of the building shows that the solitary system did not obtain, there was much more in their favour than those who were prohibited leaving their houses, except between the hours of 6 and 10 in the morning, and eventually not at all.

The only question is what number slept in the same room; but many of them having been withdrawn about the 12th of May, to be employed as *beccamorti*, scavengers, &c., there could have been no injurious crowding with the number left. In site, drainage, and ventilation, and probably in the number of cubic feet to each individual, the prison could not be inferior to several of the barracks occupied by large bodies of soldiers, exempt from the disease.

The alleged immunity of the prisoners however, can only apply to the French; for in the bulletin of 22nd May, we find under the head "fallen sick under suspicious symptoms." Michele Zammitt, in that of 30th, Serafino Morretti and Vito Corvo, "Forzati," both of whom died on the 1st and 6th of June respectively, at Fort Manoel; on the 1st June, Giov. Maria Ciantar and Francesco Galea, "Forzati," both of whom died at Fort Manoel on the 2d and 3d respectively; on the 2d of June Francesco Farrugia, who died at Fort Manoel on the 4th; on the 9th June, "died in the Grand Prison, Giov. Checuti;" on the 10th June, Giuseppe Casha; on the 22nd, "died in the Grand Prison, Antonio Busitill, guardian;" and on the 8th July, Ann a Casar, who died in the Pest Hospital on the 11th; all attacked "*in the Grand Prison.*"

The circumstance most dwelt on in the history of the prison is, that all the criminals liberated to act as Beccamorti, fell victims to the disease. The majority of them were employed in Valetta and Floriana, and a portion at Fort Manoel and the Lazaretto. Most of them had been condemned for long periods for flagrant crimes; and are represented as men of the most profligate and reckless character. The Baron de Piro (p. 50) says. "In the midst of so many calamities, which all testified
" the divine wrath, and with which every one was menaced, even
" crime was not arrested, but prevailed most in those places
" where the scourge fell heaviest. There in a mingled confusion
" of sex, age, and condition, the lascivious dared to satisfy his
" criminal desires, and the avaricious to possess himself of the
" goods of another, whilst both frequently fell victims to their
" delinquencies. To such evils were added the cruelties com-
" mitted by those unfortunate wretches, at once too useful and
" vicious; I speak of the prisoners above alluded to. Besides the
" fear they inspired as malefactors loaded with crime, whose
" touch was pestilential, their red and black coloured clothes
" which covered them from head to foot—their reckless look—
" their rough and bronzed countenances, which appeared from
" under their hoods, carelessly placed upon their heads—all
" presented something awfully sad and horrible, appearing to
" the timid as malignant genii destined to preside over human
" destruction. The houses to which they were unfortunately
" called, and where the afflicted inmates looked to others for
" succour, became to them places for assault and conquest. There
" they committed plunder, forced the sick and the well to disclose
" the repositories of their money, ill-used the dying, whom on some
" occasions they threw into the same cart with the dead, and with
" polluted hands dared to violate desolate women. Notwithstand-
" ing, it was impossible in those fearful times to put a stop to all
" their wickedness, for no guard could venture, without personal
" risk, to watch them where they intrepidly penetrated. They had
" arrived at such a degree of audacity, that recourse to arms was
" frequently necessary to drive them out of the places where they
" hoped for plunder, or to oblige them to work. Those houses,
" therefore, that remained empty, and from which they had to
" remove furniture or any other susceptible article, were visited
" by them with the greatest delight; and, with the avidity of
" enemies plundering the vanquished, ran into every corner,
" searching in garrets, in cellars, and groping in every little hole
" for money, jewellery, or any other article of value they could
" conceal under their garments. But alas! Fools, to what
" advantage? They were swept away, one after the other, and
" all that was amassed was enjoyed by none of them."

It will hence appear that no part of the population was at once more susceptible of or more exposed to the climatic and accessory causes of fever than those prisoners; brought from the monotony and repose of a prison into scenes affording scope to every vicious indulgence; exposed to the sun with the most disgusting and fatiguing work in the infected localities; sleeping in miserable huts, with diet, and conduct almost at their discretion—they were like strangers suddenly transported from order, quietude, and regularity, into the midst of confusion, excitement, and pestilence. I can find no particulars as to where or under what form of disease those men died, nor even of their numbers; but we may imagine that, dreaded and shunned by every one, their complaints had no early or proper attention, conducing to recovery.

A somewhat different fate under more restraint, but not less exposure to contagion, awaited 12 men employed in Fort Manoel. According to Gabriele Cauchi, who was there for 50 days as senior guardian, of 12 beccamorti only five died. This man further states, that of 17 guardians who were there with him, though they had no direct communication with the sick, he was the only survivor:* also that he touched plague patients almost every day, and, under the direction of the doctor, opened the corpse of a pregnant woman for the purpose of christening the infant, with entire impunity. Instances of the disease without exposure to contact with the sick, and resistance to it under the greatest, are so numerous as not to be reconcilable with the views described as universally entertained in Malta. †

Great numbers of French prisoners, besides those in the Grand Prison, were in Malta during the epidemic. The bulk of them were accommodated in a very large detached building, called the Verdala Palace, situated about two miles from Citta Vecchia, and one from the village of Dingli, which had only one death. The locality, in point of healthiness, is one of the most unexceptionable in the island.

In a pamphlet published in 1841, by Dr. Luigi Gravagna, Principal Physician of Quarantine, there occurs the following: “The government offered liberty and some reward to those *French* prisoners who would volunteer to assist in the general sanitary arrangements. I repaired to the prison to make the proposal: 60 of them immediately accepted. I employed them in the public service, some of them were soon attacked, others successively, and almost all died of plague, so that at the end

* After the occurrence of the first case he occupied a room by himself.

† According to Mr. Garcin, of forty Greeks employed in the Lazaretto as beccamorti, not more than ten died.

“ of 20 days I had to return to the prison to repeat the offer ;
 “ some accepted, but unfortunately in a short time they shared
 “ the fate of the first.”*

The most extended inquiries have convinced me there is some fallacy in this statement ; that some failure in memory or error in transcribing has caused the criminals to be confounded with the *French* prisoners. The latter were in no instance employed with or near the sick ; they acted as scavengers, expurgators, &c., and all with whom I have spoken, concur in stating that no death occurred amongst them. No notice is taken of these men by Hennen, Tully, or De Piro, or can I find a single French name in the bulletins. Further, an eye witness, Mr. Satariano, son of the superintendent of these men, as also Jean Chevalier, himself a prisoner in 1813, confirm, without qualification, all I have collected from other sources.

It is stated that several prisoners of war, *not French*, were employed subsequent to the criminals, but particulars regarding their number or the kind of employment are too vague and contradictory to be of use. Mr. Skinner, surgeon to the prisoners of war, states that the disease “ was principally confined to the
 “ indigenous inhabitants. Few of the Turks or Greeks resident
 “ in Valetta were attacked, if we except those of the lower
 “ class of Greeks, who, in common with the felons, were engaged
 “ in the hazardous employment which the exigencies of the occasion
 “ required. Other foreigners were equally exempt, and the
 “ British peculiarly so.” (Med. and Phys. Journal, vol. 33.)

There is a very general belief that the troops entirely escaped the plague, and it has been alluded to in such a way as almost to confirm this belief. It will appear, however, from the bulletins, that notwithstanding the rigid isolation and comparatively superior conditions under which the men were placed, the disease found its way into four, if not five, different barracks, lying at points distant from, and having, it is probable, no intercourse with each other.

In the bulletin of 28th of June, we find one serjeant and five soldiers of De Rolls' regiment “ fallen sick under suspicious
 “ symptoms,” and one of the same corps dead in the barrack, formerly the “ Albergo d'Italia ;” in that of the 30th, three more of this regiment appear under the head “ fallen sick, &c.” † Same date, a death in the Regimental Hospital of De Rolls. On

* Dr. Gravagna's pamphlet appears to have been published to prove the communication of the plague by simple contact in the open air. He has not been happy in the selection of the particular instance (the boatman Cauchi) on which he rests his conclusion.

† The only cause assigned by Sir Brook Faulkner for the disease in this barrack was “ their barrier admitting a contact with persons outside. It was a barrier at which “ you could shake hands with any body on the outside.”—*Report of the Select Committee*, 1819, p. 51.

the 5th of July one of De Rolls "fallen sick;" 8th, another of the latter corps "fallen sick," and a death in the Military Pest Hospital; 16th, the wife of a serjeant of artillery "fallen sick," at St. James's Cavaliere; 22d, two deaths in the Military Pest Hospital; 23d, three soldiers of De Rolls "fallen sick;" 26th, one death and another "fallen sick" in the same corps.

Up to the 27th of July the bulletins almost invariably notice the exemption of the "navy, military (with the exception of the "reported cases in the regiment of De Rolls), and prisoners "of war." After this all notice of the kind is omitted, and obviously for the reason that the British troops were no longer free. In the bulletin of the above date, the period about which for a long succession of years the ordinary fever has attained its acme, there appears the following:—"In barracks, a soldier of "the Royal Artillery fallen sick." In the same bulletin, under the same head, "In barracks, two soldiers and a woman of the "3d Garrison Battalion," at Floriana; also two deaths in barracks, one of De Rolls, the other of the 3d Garrison Battalion.

In the bulletin of 1st August, six persons are reported as having recovered in the Military Pest Hospital, among the names of whom we meet with those of "Private Steff" and "Drummer "Bone." On the 3d, another of De Rolls is reported "fallen "sick;" on the 7th, a death in the same corps, in the Military Pest Hospital; 13th, one of the 3d Garrison Battalion "fallen "sick;" 20th, a death in the Military Pest Hospital, and two "fallen sick" of the 3d Garrison Battalion; and on the 23rd, another of this corps is reported as "fallen sick."

No more cases are noticed in the Bulletins, but Dr. Calvert states (Med. Ch. Tran., vol. 6), that the 3d Garrison Battalion "became again infected" (at the beginning of October) "after "remaining free the whole month of September." The first case (a woman) after remaining a week in barracks under the disease, died on the 22d October; a second was attacked on the 16th; a third on the 20th; two more on the 23d, in barracks, and the servant to the town adjutant, in Valetta. On the 24th the regiment was moved to Ricasoli. "*Immediately* after its "arrival there several (4) suspicious cases occurred." (Idem).

The mansion (now the Civil Arsenal) in which De Rolls regiment was accommodated, though of excellent construction, and placed in the highest part of Valetta, is not half the size of St. Elmo, and is in the midst of houses. Presuming that this regiment was equal in strength, namely, 1,000, to the others, and the consequent necessity of occupying the ground-floors and low pitched mezzonini, it is probable that crowding here countervailed

the advantage of elevation, for it is one of the very few exceptions in which elevation did not afford protection.

The barrack of the 14th regiment, (Lower St. Elmo) mentioned by Sir Brook Faulkner in his examination before the Select Committee, in 1819, as having escaped the plague, with the exception of one suspected case "though near the most unhealthy part of the town," is, except Forts Manoel and Ricasoli, the best barrack in the command, being not only more spacious, open, and better ventilated, but the barrack-yard and adjoining batteries, close to the sea, afford more space for exercise than any other. In the cholera of 1850, while the 44th regiment, occupying Floriana (the barrack of the 3d Garrison Battalion in 1813) and two similar barracks in Cottonera, all much shut in by other buildings, had 141 attacks and 95 deaths, or 7·81 per cent. of its strength, 1,215 (including women and children); the 69th, in St. Elmo, 1,218 strong, had only 51 attacks and 17 deaths, or 1·39 per cent., though continuing throughout to occupy the same barrack, while two of those of the 44th required to be early abandoned; and it is deserving of notice that the barrack (Fort Ricasoli, *see map*), to which the head-quarters of the latter was moved, and with immediate check to the disease, is the same to which the 3d Garrison Battalion, in 1813, seems to have owed the arrest of the plague.

Most of the barracks in 1813, as at present, were casemated, and forming part of the fortifications, with very indifferent ventilation; but improvements in that respect have taken place within the last few years. The comparatively few cases of plague, therefore, among the troops is a matter for more surprise than in the prison; but is attributable in both cases to the inmates being under the very opposite conditions to those of the population chiefly attacked, namely, freedom to breathe the open air during the day, and better ventilation at night.

It is true the military were rigidly isolated, but what part of the town population was not? A reference to the restrictions (*see p. 79*), imposed on the inhabitants of Valetta and Floriana from the 19th of May, will show that those who were attacked, were virtually under as rigid quarantine as those who were segregated. Watched by the deputies and masters of houses, and confined to their own district, and for 20 hours out of the 24 to their hovels, there was in fact no intercourse, except among the members of the same family; and even these, we may suppose, exercised every caution, for contact of the most trifling kind seems to have been universally dreaded.

No portion of the population was more likely to avoid contact than the volunteer guards employed in the several districts, for the purpose of preventing any infraction of quarantine. From

the commencement of the epidemic to the middle of July, during which the restrictions were less rigid, and the liability to exposure, therefore, greater than it was subsequently, very few of them appear in the bulletins. From the latter period to the 4th of August, when the Urban guard, composed of householders, was organized to assist them, 41 are reported as having "fallen sick" and died. After this, to the end of September, they suffered to a nearly equal extent. Now, by the proclamation of 17th July no person was permitted to be out of his house, except between the hours of 6 and 10 in the morning; by that of the 2d August, "absolute retirement of all the inhabitants of "Valetta and Floriana" was enforced, "with the exception of "such persons only as may be required to go out by the special "exigencies of the Government, or who may be engaged in the "supply of provisions to the community, and in other indis- "pensable branches of the public service;" and as at this time the penalty of death was incurred by any one found entering an infected house, it is difficult to understand how the agents—the *bonâ fide* delegates of the Board of Health—empowered to carry these measures into effect, could have suffered to such an extent solely by intercourse with the diseased.

Something more conclusive of the inutility of segregation is to be found in the shipping. By the proclamation of 7th May, "Crews on board ship were to consider themselves in quarantine;" on the 22d, "All communication with the shipping was to "cease after sunset;" 15th June, "No one to leave his ship "without a written permit, and no person to be admitted on "board any ship;" and on the 8th July the restrictions were still more severe. Notwithstanding, on the 9th May, a case of plague is reported on board a vessel in St. Paul's Bay; on the 6th June, a case is reported, "fallen sick under suspicious "symptoms," on board the "Monarch" Transport; on the 13th a death from plague on board the "Corsale il Coragioso;" 23d, one "fallen sick" in the "Penelope;" 1st July, a death from plague in the "Bella Virgine;" 2d, one "fallen sick" (afterwards dies) on board the "Mabruc;" 14th, one "fallen sick" on board a "Sparonara;" 15th, a death from plague in "La "Guiditta;" and on the 16th one "fallen sick" in "La Bella.*" From the 9th May to the 16th July, 9 vessels became infected; and there is a correspondence in the number and severity of cases

* Dr. Hennen, after stating his belief that the plague is never propagated, except by contact, adds in a note, "Would it not (infection) also have infected the shipping in "the great harbour during its passage across? but the shipping in the great harbour "was not affected," p. 511. Now in two of the vessels, the great harbour is specified, in the others it is simply stated "in port." It is, however, due to Dr. Hennen to state, that he "made many enquiries after a copy of the original notices (bulletins), but in "vain."—Note, p. 253.

with the progress of the disease on shore. Thus in May 1, recovered 1; in June 3, recovered 2; in July 5, recovered 2; and that there may be no question as to the cause of death in the above cases, which all appear in the bulletins, I extract the following from the bulletin of 14th May:—"N.B. Neither in the present or in the former bulletins have any deaths been noticed, but such as have been occasioned by direct plague, or attended with most suspicious circumstances, as have been always particularly specified." This may be considered as a guarantee for the unequivocal character of all cases inserted in those documents; for the disposition of the authorities appears to have been rather to curtail than magnify the number of the sufferers. It is, indeed, believed that the deaths are considerably understated in the bulletins.

Although the connection of the disease with locality may not appear to be borne out in every case, the collective evidence on this point is conclusive.

I employed a competent and trustworthy Maltese (Mr. Guiseppe Scicluna) to visit every house in Valetta in which, according to the official bulletins, plague occurred, in 1813; and as the numbers of the houses are the same, the result may be considered as substantially correct. The subjoined summary will show the immense preponderance of sickness among those living in the worst houses and most questionable localities.

TABLE, drawn from the daily Official Bulletins, showing the number and description of the houses in which cases of Plague occurred in the Epidemic of 1813.

Total No. of the Streets attacked.	Total No. of Dwellings attacked by Plague.	Total No. of Cases of Plague in the Streets attacked.	Description of the Habitations attacked.				Their Ventilation.				By whom Inhabited.				Class Inhabiting the Houses.		
			Ground Floors.	Cellars.	Mezzoninos.	Houses.	Good.	Partial.	None.	Total.	Respectable.	Middle Class.	Poor.	Total.	Respectable and Middle Class.	Poor.	Total.
49	564	1,131	252	44	141	127	107	170	287	564	87	94	383	564	84	43	127

There may have been alterations in several houses since 1813, as also in the class of occupants, but these are so few as not to affect the general result, which may with safety be accepted as a close approximation; moreover, any difference would probably be in favour of the influence of local conditions; for the population of Valetta being at that time larger by several thousands, and house rent much higher, we may presume that crowding obtained more than at present. The Official Bulletins give the name and

place of residence of those attacked, so that I have had no difficulty in discovering the identical house, which in the vast majority of cases, remains the same as in 1813.

The alleged introduction of the plague into the island of Gozo in 1814, appears to rest on very questionable grounds. According to Sir Thomas Maitland, in his Despatch of 1819 to Lord Bathurst, "One of the persons who had been sent in to the Lazaretto for forty days, on being liberated, directly proceeded to his house which had been originally within the cordon [at Curmi,] but which was now without, in consequence of its having been straitened, as above mentioned. This person, before he went into the Lazaretto, had concealed in his garden a small box; on quitting the Lazaretto, he dug it up, carried it to town, and then immediately proceeded with it to the island of Gozo, where he had some relations in the village in which the plague afterwards appeared; he then opened it and gave, what they term a faldetta (a black silk cloak, universally worn by the women of Malta) to his relation; I have not the smallest doubt, the plague was by this means generated in Gozo."

Dr. Calvert, however, says: "A man, indeed, did go from this neighbourhood (Curmi), and was the first in that island (Gozo) who fell a sacrifice to the disorder; but as to his digging up a box, this was an idle report, and could not be substantiated, as I was confidently assured from the best authority."

Supposing Sir Thomas Maitland's statement to be correct, there is no evidence that either the man or the contents of the box had come in contact with infected persons or articles. But if they had, we can scarcely credit that the poison after a lapse of several months retained sufficient activity to communicate the disease. Captain Schembri (see p. 61) states that there is no instance on the records of the Lazaretto of Malta of any depurgator being attacked with plague, and greater doubts will arise as to the retention of the poison by clothes, when it is stated that from the 13th of November to the end of December, numbers of persons were engaged in a general purification of clothes in Valetta; and houses that had been shut and sealed, and in which whole families had perished, were then purified, without the occurrence of a case of plague.

The evidence against the communication of plague by fomites seems so conclusive, that it is not probable a silk cloak which had lain buried in the earth for some months could effect in February 1814 what cartloads of justly suspected articles failed to do in November of the preceding year, before the disease was wholly eradicated in the villages of Malta. But it is open to question whether the first recognised case was one of plague, for, according to Dr. Tully (p. 74), "he died suddenly at his own

“ house,” and “ his body was carried to the parish church, and “ he was buried with the accustomed funeral ceremonies.”

According to the Baron di Piro, Angelo Galea, the subject of this case, left Malta on the 19th February and died suddenly on the 22d. His daughter was attacked on the 28th, and died a few hours after her arrival at the hospital at Rabatto. Among the first cases were the priest and grave-digger (p. 77). I have ascertained that Galea was five, if not six, days in Caccia before his death on the 18th,* and that the grave-digger, “ Cassimiro Rapa,” died on the 2d of March; but the priest, “ Vincenzo Cauchi,” aged eighty-two, died on the 27th of April. The latter had no communication with Galea, who received neither religious nor medical assistance, his death having been so sudden as to call for a coroner’s inquest, when buboes are said to have been discovered in the axillæ, which had been for two days dressed by his daughter Rosaria.

“ Modesta Hili,” a neighbour and eye-witness, questioned by Mr. Attard, states that she not only saw Rosaria preparing a poultice the day before Galea died, but a tumour in the arm-pit; and that, wishing to assist in its application, Galea “ bid her stand “ off, as he had a fever and she might take it.” This statement, if correct, would justify the suspicion that Galea had the disease on arrival. As that, however, is not alluded to by any official or trustworthy authority, it may be presumed that the fact of his recent arrival and sudden death, and that of his daughter, were the only grounds for fixing on him as the importer of the contagion; for it is pretty certain that actual disease of a suspicious nature would have supplanted indirect means in support of the allegation. This testimony is also at variance with a statement of the same witness (Modesta) that Galea had been to Rabatto (two miles distant) on the day preceding his death, proving the absence of any serious illness during nearly the whole of his sojourn, which from all accounts was not more than six days.

Mr. Attard states that twelve days elapsed after Galea’s death before any restrictions were imposed on the inhabitants, during which only two deaths occurred, namely, Galea’s daughter and the grave-digger. According to the witness (Modesta) considerable alarm and question as to whether the disease of which Galea died was plague, seem to have spread, but armed people were not placed on the houses till the death of Rapa, the grave-digger, on

* Die xviii Februarii 1814. “ Angelus Filius Michaelis Galea, Ætatis suæ quadraginta septem annorum, nullisque receptis Sacramentis animam deo reddidit; cujus Corpus Sepultum in hoc Parochiale Ecclesiæ.”

Ex originale libro fidelium defunctorum hujusce Santæ Parochialis Ecclesiæ Terræ Caccia presentum extraxi copiam, et manu mea firmavi ego Parochus dictæ Ecclesiæ.
Sub die xii, Octobris 1853.

the 2d of March. It was at this date (see Despatch of 1819) that Sir Thomas Maitland ordered the disease to be treated as plague until it should be "ascertained satisfactorily" whether it was that disease or not. It is, therefore, probable that Rapa's was the first "suspicious case" notified to the authorities of Malta. Plague was then declared; the inhabitants were strictly segregated, and on the 7th or 8th troops were sent from Malta to form a cordon. The fourth death occurred on the 6th of March, and from that to the 31st fifty-one died, several in their own houses, but the greater number in the Plague Hospital, which was opened on the 19th. On the 31st the whole of the inhabitants of four-fifths of the village were placed in tents on a neighbouring plain, and their cattle penned on the same. The remaining fifth part of the casal facing the north-west was never infected.

The removal of the inhabitants seems to have acted beneficially, for in the succeeding two months, or to the last death on the 28th of May only forty-nine died. Among these were five members of the family of Custo, brought from Rabatto along with the first attacked; a priest who died in the hospital at Caccia on the 31st of March. The others were placed as suspected in barrache near to the hospital, of whom two died on the 10th and three on the 11th of April.* Among other victims either employed or living within the village subsequent to the 31st of March were five beccamorti; a depurgator; the parish priest; Drs. McAdam and Pace, besides the members of infected families placed in barrache, and the maritime guard forming the inner cordon, of whom a considerable number died.

For the following details on the first cases I am indebted to the careful inquiries of Mr. Attard. His dates and succession of the deaths taken from the parish register, may be relied on as correct. Those of the attacks as well as the nature and amount of intercourse are more questionable. Coming, however, from two eye-witnesses, Modesta Hili and Pietro Bonello, in part confirmed by Giacomo Vella, the sexton, they are plausible if not, perhaps, as reliable an approximation to the truth as can be obtained forty years after the occurrences, among an ignorant population deeply imbued with the doctrine of contagion.

18th February.—1. "Angelo Galea brought the plague from Malta; lived in the house of Anna Bigoni Fiurina, in which also resided his daughter, Rosaria, wife of Gaetano Xerri. Gaetano only survived." (See 2 and 5.)

28th February.—2. "Rosaria, wife of Gaetano Xerri, daughter of Angelo, attacked in her house and died in the hospital of Saint Giulano, at Rabatto."

* This family were the only persons attacked in Rabatto, the Capital; they inhabited the Mandraggio, a narrow, dark, and damp locality.

- 2d March.*—3. “Cassimiro Rapa, sexton of the church. He buried Angelo Galea, was attacked in the room called ‘Bottega’ in which he lived, and was found there dead on the 2d of March. This man had a house, a little distance from the room he occupied, in which his family resided, consisting of Grazia, his wife, Giuseppa, his daughter, wife of Michele Saltana, Rosaria and Maria, younger children of Michele Saltana, all of whom were in communication with Cassimiro up to the evening before his death. After his death they were transferred to the Barrache, together with Paolo Teuma (died 17th April. This man wore the cap of Angelo Galea, which had fallen from the corpse, for fifty days), and all remained unaffected except Paolo.”
- 6th March.*—4. “Michele Hili, a friend of Angelo Galea, who frequented the house as well during Angelo’s illness as that of his daughter. He was attacked and died in his own house.” (See case 6.)
- 7th March.*—5. “Anna Bigone (in whose house resided Rosaria, wife of Gaetano Xerri, daughter of Angelo), attacked and died in her own house; about the same time was attacked Gaetano Xerri, her nephew, who recovered after long detention in the Plague Hospital.” (The date of attack of the last must be inaccurate, as the Plague Hospital was only opened on the 19th.)
- 9th March.*—6. “Teresa Buhagiar, sister-in-law of Michele Hili (No. 4), attacked on the same day in the house with Michele Both died there. Giuseppe, husband of Teresa; Maria, wife of Michele, and daughter of the couple, Buhagiar; with Gabriele and Paolo, sons of the same, were transferred to the Barrache and survived. They were intimate friends of Angelo, frequented his house at his death and during the sickness of Rosaria, his daughter.”
- 11th March.*—7. “Baldassara Attard, aged 80, attacked and died in his own house; he had had no communication with the family of Galea. His daughter, transferred to the Barrache, survived; it was doubted that the former died of plague.”
- 13th March.*—8. “Giuseppe Said, lived close to the house of Galea, and went to see his corpse; attacked in his own house, and having gone out in a state of delirium was shot by the Adjutant of Police.” (Another was shot on the 31st March for concealing his illness.)
- 18th March.*—9 and 10. “Paolo Camilleri, Angela Camilleri; attacked and died in their own house. This couple had

gone to condole with Rosaria after the death of her father Angelo. Rosa, Margarata, Angela, and Maria, their children, and a daughter of Margarita were transferred to the Barrache and survived, except Maria (died 20th March.)

18th March.—11. Lorenzo Cassar ; attacked and died in his own house. He was one of those who accompanied the corpse of Angelo Galea from his house to the church ; without family." (Died twenty-eight days afterwards.)

18th March.—12. " Angelo Curmi ; attacked and died in his own house ; a friend of Galea, and visited the house at his death and during the illness of Rosaria ; without family.' (Died twenty-eight days afterwards.)

18th March.—13. " Andrea Cordina ; attacked in his own house and died in the hospital. His brother Francesco transferred to the Barrache, was attacked there, and died in the hospital on the 20th of March."

19th March.—14. " Signore Giuseppe Formosa, deputy lieutenant of the village ; attacked in his house and died on his way to the hospital. Maria, his wife, Ignazio and Saverio, younger children, Salvo Rapa, Grazia Rapa, Giovanni Rapa, Angela Rapa and her husband, Francesco Pace and Giuliano Rapa, sons-in-law, and the father-in-law were confined in the Barrache and died in hospital, except Ignazio and Saverio, the younger children, and Francesco Pace who remained unaffected. (The deaths of the others took place as follows : Maria, the mother, Salvatore, Grazia and Angela on the 20th ; Giovanni on the 23d ; and Guiliano on the 31st of March.)"

Mr. Attard's information regarding the subsequent cases almost exclusively relates to the place of attack and date of death. No connection with the first cases is alleged, except in three instances, one of which I have given (Teuma, No. 3). The others were two sisters, Giovanna and Olimpia Pace, who, it is said, had had ingress to the house of Signore Formosa (No. 14.) They were attacked in their own house, and died in the hospital on the 20th of March.

The above details may seem to afford as strong evidence of the importation and diffusion of plague as some could desire. It is necessary, however, to remember that all these persons were neighbours, living in the same unhealthy part of the village, as Galea ; that all except Rapa (No. 3) were attacked from sixteen to twenty-seven days after Galea's death, and from six to nineteen days after the removal of his daughter, and that twenty-five members of the ten families infected, as well as the great numbers who, according to the witness Modesta,

came to welcome Galea and to see his corpse, either entirely escaped the disease or had it when communication with him could no longer be suspected as the cause. Neither do we find among those attacked at this period any of the four members of the two inquests and their subordinates, nor the persons who conveyed Rosaria to Rabatto, nor any of the attendants in the hospital where she died.*

But let us suppose that all those cases contracted the disease from the family of Galea (after the 2d of March they could not from each other) we have reason to expect, as in sporadic small pox, that after they had been isolated for sixteen days, the disease would have developed itself in those exposed at the outset, and been either arrested or on the decline. Far from it: in the next thirteen days forty-three died, of whom only six were related to or in any way connected with the preceding cases (five were of the family Formosa, No. 14). Was the disease now at an end or declining? On the contrary. From the 6th of April to the end of the epidemic, on the 28th of May, there were forty-seven more victims, and none of them had any connection with the first cases, all being strictly guarded.

From the 2d of March, then, to the 28th of May, during which time no intercourse took place, 101 died, including, probably, nearly all who remained in the infected portion of the village after the 31st of March. But the following, perhaps, will best explain the course of the disease and of the mortality:—

1. Attacked and died in houses to 19th of March	14
2. Attacked in houses subsequently, and died there or in the hospital - - - - }	20
3. Attacked in Barrache from 19th of March, and died in hospital - - - - }	70
4. Attacked in the tents, and died in hospital -	3
5. Total died in hospital - - - - -	89
6. Total deaths 104, of which 71 were males, and 33 females.	

This mortality took place in thirty-eight single persons and twenty-four families, the latter consisting of 108 individuals, of whom forty-one remained unaffected. Among the former were twenty-one officials; hence the large preponderance of males. Nearly all, therefore, who were forced to remain in the village, were swept off; while 1,200 or 1,300 persons

* Much less must we forget that all those cases occurred after from four to sixteen days of the most rigid seclusion in these filthy dwellings.

encamped at a short distance, many of whom, it is certain, had been in communication with Galea's family, lost only three individuals. I leave for future inquirers to determine whether a local cause, from which quarantine prevented all chance of escape, or contagion was here the most active agent. Similar occurrences under similar measures, in Malta and other places in the Mediterranean, between 1813 and 1816, seem to offer a ready solution of the question.

The outer cordon, consisting of 100 men of the Sicilian regiment, accommodated in seven tents and six houses, was entirely exempt, while the maritime guards (Maltese) within the village and guarding the hospital, suffered considerably. "The hospital" says Mr. Attard, "is within, and at the southern extremity of" of the village. It is large, and separated from other houses, but "badly adapted to the purpose. It contains a large ox-stable and "four rooms, two of which are dwelling-rooms, the others, a mill "and storeroom for straw, all on the ground, and deficient in light "and ventilation. I did all in my power, on account of these "objections, to prevent this building being occupied as an "hospital in the cholera of 1837." Nearly every case of plague, subsequent to the 19th March, was treated here.

In ninety-nine days, from the first to the last death, 104 died, yielding a proportion on the four-fifths of the population which suffered of 7·22 per cent., or, for the time, equal to the mortality in Zebbug. Some of the causes of this have not escaped the attention of Mr. Attard. He says, "The part that faces the north-west, which comprises about a fifth of the village, remained intact by the plague, and in fact was never in quarantine, while, in the first days of its appearance, it raged with all its force in one street which leads from Ghar Scejba to the small church of St. Antonio, and the precincts of the parish church. It was again observed, in the cholera of 1837, that in the three first days the identical houses affected in 1813 in Strada Ghar Scejba, and the localities just mentioned, yielded more cases than all the rest of the casal during the whole period of the epidemic."

"The houses at the north-west of the village are in parts more elevated than in Ghar Scejba. The houses in Caccia generally are scattered and detached, except in the quarter near the church, where they are more concentrated and closer to each other. The inhabitants of Ghar Scejba are placed in the centre of the village, at the mouth of a valley, where there is water running from several fountains and rivulets, to orchards and kitchen gardens, forming, by their refuse and sediment, pools of mud, and here and there little marshes, sufficient at times to corrupt any air. Indeed, the Government, at the beginning of summer, take means to remove the stagnant water."

On the 13th of June the remaining members of families that had been infected were removed for a time to Ramola Bay, guarded by a cordon, and made to bathe three times a day, under the superintendence of the police. The remainder of the population returned to the village, but the whole were admitted to pratique with the rest of the island on the 26th of July, and with Malta on the 8th of September. There is here, again, room to question whether the gain was equal to the sacrifice, or rather, that as in the first twelve days, this suspension of intercourse and occupation for six months might not have been with impunity altogether avoided. The arrest of the disease by removal from the locality while proving the subjection of plague to the means found beneficial in other epidemic maladies, points significantly to the propriety of this removal, and to the cruelty of chaining a population in an unhealthy spot by quarantine.

Captain Schembri, who held the appointment of Captain of the Port of Quarantine in Malta for twenty years, and served for several years previously in the Venetian Navy, where he had frequent opportunities of meeting with plague, states, in a small pamphlet, entitled "*Ragionamento Pratico Sanatorio*," published in 1842 :

"1st. That many ships loaded with, and without susceptible goods, arrived from infected places and completed their voyage and quarantine without any case of plague.

"2d. That some ships coming from the same infected places have developed the plague in a single individual, and it has not extended further.

"3d. That on some occasions the first attack was followed by others, not only during the voyage, but after arrival in port.

"4th. That in other instances the disease did not appear on the voyage, but showed itself after arrival, namely the 'Acheron' and 'Mabruca Georgiana.'

"5th. Cases of the transmission of the disease to those employed in the Lazaretto are rare, and these were attacked by having had contact (?) with the infected and *their clothes*. *There is no instance on the records of the Depurators of susceptible cargoes being attacked.*"

That the arrival of ships at Malta having cases of plague among their crews has been of frequent occurrence without any spread of the malady in consequence, is proved by the following extract from Records in the office of the Quarantine Department, showing the various Vessels with this disease on board duly depurated in the Lazaretto since the Plague of 1813.

"1819, *Maltese Bombard 'Sta. Trinita,' from Susa.*

"On the 27th of March 1819, the Maltese Bombard 'Sta 'Trinita,' Francesco Azzopardi, master, arrived in Malta from

Susa, having on her way touched at Lampedosa, with five persons in crew (originally six) with a foul Bill of Health, in consequence of the plague prevailing at Susa, where from fifteen to eighteen persons died daily of that disease.

"The master of the Bombard on his arrival deposed on oath, 'That on the 20th of March he sailed from Susa bound to Malta, and that on the 19th of March, the day previous to his departure, the boy, Michele Casalotto, was taken ill with head-ache, debility and fever; the master gave him some physic, and two days afterwards the boy commenced vomiting without any delirium, but on the 22d of March, a few hours after their arrival at Lampedosa, he died.'

"The master further deposed that during the boy's illness, he was several times examined to ascertain if any external marks of plague appeared on him, but none were visible; after his death, however, they observed from six to eight petechiæ scattered about the belly and thighs.

"The Bombard was laden with oil and soap.

LIST of Persons forming the original crew of the Maltese Bombard 'Sta Trinita, with the dates of Sickness, and Death of those who were attacked by the Plague, as well as of those who recovered, or who had not contracted the contagion.

Names of the Crew.	Days on which		Remarks.
	Were Attacked	Died.	
Francesco Azzopardi, master	—	—	
Michele Casalotto, boy - -	—	—	Died during the voyage.
Vincenzo Majoli - - -	3 April	8 April	Bubo on the right groin.
Guiseppe Rizzo - - -	4 "	4 "	" left groin.
Fortunato Zarb - - -	4 "	Cured -	" " "
Michele Lubrano - - -	4 "	Cured -	Tumour on the shoulder.

"The Health Guardian who was embarked on board the said Bombard on the 1st of April, and the two persons who nursed and attended the sick persons sent to the Lazaretto (all from pratique) were not attacked.

"1821. *Maltese Brig 'Costanza,' from Alexandria.*

"On the 21st of March 1821, the Maltese brig 'Costanza,' Giovanni Luppini, Master, arrived from Alexandria, with a foul Bill of Health, with fourteen persons in crew and eight passengers (but sailed originally with fifteen in crew and ten passengers), bound for Malta.

"The master of the brig on his arrival deposed on oath, 'That ' on the 28th of February he sailed from Alexandria. and that ' on the 27th, the day previous to his departure, received on ' board ten passengers, eight in good health and the other two, ' Guisèppa Sevasta and her daughter Rosolia, were of sickly

‘ appearance. The master observed on the day of their departure that they both had a diarrhoea, and suffered much from sea sickness; that Guiseppa Sevasta got worse, and on the 2nd of March died. The master together with the crew and passengers examined if any external marks of plague appeared on her, but none were discovered. On the 16th of March, Rosolia Sevasta died also, and on examination no marks of plague were visible on her body.’

“ Amongst the crew, during the voyage, Francesco Mangion suffered much from sea sickness, and rejected every nourishment he took; on the 17th of March he became feverish and delirious with abundant evacuations, and at midnight he died.

“ As the corpse of Mangion was still on board, the master of the brig was ordered to land the same in the Lazaretto, and when inspected by the Quarantine physician, several petechiæ were visible.

LIST of the several Individuals, forming the Crew and Passengers as originally started from Alexandria.

Names of the Crew and Passengers.	Days on which		Remarks.
	Were Attacked	Died.	
1. Giovanni Luppini, master	—	—	
2. Stefano Giove - -	—	—	
3. Guiseppe Vella - -	—	—	
4. Guglielmo Spartaro - -	—	—	
5. Francesco Mangion - -	—	—	Died during the voyage.
6. Giacinto Manuch - -	22 March	25 March	Petechia.
7. Michele Bartolo - -	27 „	30 „	Bubo in the right groin.
8. Salvatore Spiteri - -	—	31 „	„ „
9. Guiseppe Inguanes - -	28 March	1 April	„ „
10. Salvatore Iberese - -	—	Cured	Swelling in the glands.
11. Lorenzo Attard - -	29 March	2 April	Carbuncle on the shoulder.
12. Guiseppe Vella (2) - -	30 „	1 „	„ „
13. Salvatore Frigieri - -	31 „	3 „	Bubo on the right groin.
14. Vincenzo Mangion - -	1 April	4 „	{ Bubo and a carbuncle on the shoulder.
15. Fortunato Borg - -	5 „	7 „	Petechia.
<i>Names of the Passengers.</i>			
1. Francesco Stabile - -	—	—	
2. Michele Trombetta - -	—	—	
3. Guiseppe Cutajar - -	—	—	
4. Guiseppe Camilleri - -	—	—	
5. Guiseppa Sevasta - -	—	—	} Died during the voyage.
6. Rosolia Sevasta - -	—	—	
7. Catarina Viaggio - -	1 April	Cured	Tumour on her neck.
8. Maria Antonia Rosso - -	—	7 April	{ Carbuncle on the right shoulder.
9. Giovanni Viaggio - -	5 April	26 „	Bubo on the left arm.
*10. Ignazio Rosso - -	13 „	16 „	Bubo on the right groin.

* See further notice of these cases, page 73.

"The brig 'Costanza' was laden with beans.

"The crew and passengers were landed at the Lazaretto, and three persons attended on them.)

"On the 28th of March a Health Guardian and four sailors were embarked from pratique on board the said brig 'Costanza,' for depurating the ship and landing the cargo in the Lazaretto stores. One of the sailors, Pietro Briffa, on the 2d of April was attacked and cured, the said Pietro Briffa during the plague in Malta in 1813 had also been attacked. Another of the said four sailors, Vincenzo Debono, who was also attacked, had a bubo in his right thigh, and was also cured."

"1828. *Russian Frigate 'Castor,' from Armiro.*

"On the 13th of June 1828, the Russian Frigate 'Castor,' under the command of Captain Sittin, with 281 persons in crew, arrived at Malta from Armiro, from which place she sailed on the 21st of May direct for Malta.

"The captain and the physician deposed that the frigate 'Castor' left Malta in pratique on the 30th of April last, having 285 persons in crew for Navarin and Madone for the purpose of cruising there. On the 3d of May she was in company with other Russian ships of war which had captured a Turkish corvette which sailed from Madone for Alexandria on the 2d of May, having on board 600 individuals including the crew, invalids, sick, and wounded from Ibrahim Pasha's army.

"The captured corvette was manned by fifteen sailors from the 'Castor,' and by portions of the crews of other ships of war which were in company with the 'Castor,' and 200 individuals out of the 600 who were originally on board, were taken on board the 'Castor,' and on the 11th of May were all landed on the coast of Morea; the 'Castor' then received back the fifteen sailors from the captured Turkish corvette.

"The 'Castor' on the 17th of May arrived at Armiro for a supply of fresh water, and on that day a sailor was taken ill with a violent headache, vomiting and delirium. On the 18th of May another sailor was also taken ill with similar symptoms, which circumstance caused some alarm to the physician. On the 19th of May, the sailor who was taken ill on the 17th died, and the corpse having been inspected; nothing external was visible indicating plague. On the 20th, the other sailor who was taken ill on the 18th died, and after inspection no marks of plague on his body were visible. A third sailor was attacked with similar symptoms of malady on the 20th of May.

"On the 21st the 'Castor' took again her position, and on the 24th the sailor who was reported sick on the 20th of May died, without having on his body any mark indicating plague.

" On the 2d of June, whilst cruising, a fourth sailor was taken ill, and besides the general symptoms of the malady, which had been observed on the three other sailors, this one had a swelling under the right arm, and on the 9th of June he died. In consequence of which the physician made his official report to the captain, stating that he considered the malady which had prevailed on board to be a contagious pestilential disease. The commander made his report instantly to the senior officer, who commanded the 'Ezechielle,' and received orders to proceed to Malta and place himself under the sanitary regulations of that Lazaretto for the safety of the crew and for the duly depurating the frigate 'Castor' under his command.

" It is not known whether the sailors attacked had formed part of the prize crew on board the corvette or not.

" No new cases of plague occurred on board or at the Lazaretto during the Castor's quarantine."

(Four guardians were embarked.)

" 1835. *Russian Brig 'Sophia Elena,' from Alexandria.*

" On the 2d of May 1835, the Russian Brig 'Sophia Elena,' Demetrio Fiorio, master, arrived from Alexandria with a foul Bill of Health, bound for Leghorn, with thirteen persons in crew, originally fifteen in number.

" The master of the 'Sophia Elena' deposed on oath 'That he sailed from Alexandria on the 18th of April for Leghorn; that whilst at Alexandria on the 11th of April, one of the four sailors whom he had there embarked fell overboard into the sea, and on the same day he was taken ill with a pain in his chest; that the master having administered to him some physic, and by applying leeches, the man felt himself better, and continued in a convalescent state until the day of his departure from Alexandria, the 18th of April, but on the following day he got worse, and about midnight died. On the following morning the corpse was examined, but no external marks of plague appeared, and both the corpse and clothes were thrown overboard.

" " On the 25th of April, whilst in the vicinity of Candia, another sailor was ill with pain in his chest, extreme debility, and spitting of blood, and continued daily getting worse until the 28th, on which day he died. On examination of the corpse several blue spots were observed on it.

" " On the 1st of May, being near Girgenti, a third sailor was taken ill with violent headache, and a general debility, and remained in that state until ten o'clock A.M. of the following day, 2d of May, and just when the 'Sophia Elena' was about entering the Quarantine Harbour of Malta, he expired.

“ On the 2d of May a fourth sailor was taken ill with the same symptoms as the others, with the addition of cold shivering, and that the rest enjoyed good health on board.”

“(The sick were landed at the Lazaretto, and attended by two persons, and five guardians were put on board the vessel.)

“The cargo of the brig ‘Sophia Elena,’ chiefly consisted in bales with cotton and linen, and other non-susceptible goods.”

LIST of the Crew as originally started from Alexandria, with the cases of Sickness, Deaths, &c.

Names of Crew.	Days on which		Remarks.
	Were taken ill.	Died.	
Demetrio Fiorio, master . . .	—	—	} Died during the Voyage. Carbuncle and Petechia. Petechia. Petechia and Carbuncle. ” ” General Symptoms. Bubo and Petechia. Carbuncle and Petechia.
Angelo Vreto, mate . . .	—	—	
Angostino Fiore . . .	—	—	
Teodoro Cavalla . . .	—	—	
Costantino Cumpi . . .	—	—	
Giovanni Hadajena, boy . . .	—	—	
Michele Giusleve . . .	—	—	
Vittono Stellato . . .	—	—	
Domenico Pagano . . .	1 May	2 May	
Matteo Supana . . .	2 ”	5 ”	
Taftuh Maxinem . . .	17 ”	27 ”	
Francesco Danesi . . .	18 ”	20 ”	
Antonio Garibaldi . . .	18 ”	Cured .	
Antonio Catani . . .	20 ”	23 May	
Michele Sulcremo, boy . . .	22 ”	23 ”	

“ 1837. Ottoman Paranza ‘Mishud,’ from Tripoli.

“ On the 22d of February 1837, the Ottoman Paranza ‘Mishud,’ Klifa Brigeri, master, arrived from Tripoli with a foul Bill of Health, having six persons in crew, and fifty-two passengers, bound for Malta.

“ The master of the Paranza deposed on oath, ‘That he left Tripoli on the 15th of February, and that during the voyage, one of the passengers was taken ill, and was kept apart in a small boat on deck.

“ ‘That the above Paranza had no kind of susceptible goods on board.’

“ The passenger Enerico Borg, was instantly landed in the Lazaretto, when a Health Guardian from pratique was ordered to attend him with due precautions.

“ Upon inquiry, it was ascertained that Enerico Borg was taken ill on the day of his departure from Tripoli, and when he was inspected in the Lazaretto by the Quarantine Physician, two bubos were clearly visible on the groin, which some days afterwards opened, and the man was cured.”

(One guardian was put on board the vessel.)

“ 1837. Ottoman Bombard ‘ Sada,’ from Tripoli.

“ On the 23d of February 1837, the Ottoman Bombard ‘ Sada,’ Mustafa Cantargi, master, arrived from Tripoli with eleven persons in crew, and twenty-one passengers (originally started from Tripoli with twenty-two passengers, Hadji) with a foul Bill of Health, bound to Malta.

“ The master deposed on oath, ‘ That he sailed from Tripoli ‘ on the 10th of February, and that one of the passengers during ‘ the voyage fell overboard, and was drowned.

“ ‘ The sick were landed at the Lazaretto, and attended by ‘ two pilgrims of the party, one guardian was put on board the ‘ vessel.

“ ‘ That the Bombard was laden with susceptible goods and ‘ about fifty salms beans, for Malta.’ ”

Number of the Persons.	Days on which		Remarks.
	Were taken ill.	Died.	
One Hadji	25 Feb.	27 Feb.	A bubo.
One	27 „	27 „	Petechiæ.
One of the Crew . . .	8 March	10 March	Two buboes.

“ 1837. Tunisian Xebeck ‘ Mishoud,’ from Tripoli.

“ On the 2d of March 1837, the Tunisian Xebeck ‘ Mishoud,’ Rages Homor, master, arrived from Tripoli with a foul Bill of Health, having ten persons in crew and thirty passengers ; one of the passengers and one of the crew sick.

“ The master deposed on oath, ‘ That he sailed from Tripoli on ‘ the 26th of February, bound for Malta, and that during the ‘ voyage two persons were taken ill.

“ ‘ That the cargo consisted part in susceptible goods, and part ‘ not.

“ ‘ The physician of the Quarantine department having visited ‘ the two persons reported sick, no marks of plague appeared on ‘ them, although the passenger was in his last moments, and in ‘ the course of the evening died. When inspected again in the ‘ morning, the symptoms appeared clearly on the body.’

Names of Passengers.	Days on which		Remarks.
	Were attacked.	Died.	
Antonio Buccagnano . . .	. . .	2 March	Carbuncle on the shoulder.
One of the Crew	2 March	Cured .	Bubo on the left groin.

"Two of the crew of the above-mentioned 'Xebeck' attended and nursed their fellow sailor in free communication with him, and remained in perfect good health."

(One guardian placed on board.)

"1840. *H.M. Steamer 'Acheron' from Alexandria.*

"On the 27th of April 1840, Her Majesty's Steamer 'Acheron,' Lieutenant Kennedy, commander, arrived from Alexandria with a foul Bill of Health, in seven days, with forty-eight persons in crew and eighteen passengers; having brought the mails, several parcels and letters, and two horses; all well on board.

"On the 29th, early in the morning, the health guard, who was put on board the 'Acheron' on the day of her arrival, reported to the captain of the Lazaretto that one of the crew (a boy) during the night, at about nine p.m., died, and that one of the stewards was seriously ill.

"The commander received directions to land in the Lazaretto both the corpse and the sick steward, and having been duly examined by the Quarantine physician, evident symptoms of plague were observed on them.

Names of Persons.	Days on which		Remarks.
	Were attacked.	Died.	
William Martingall, boy .	27 April	28 April	Bubo and petechiæ. { Bubo on the arm-pit and on the neck.
Wm. Humphrey, steward.	27 ,,	2 May .	

"The two persons who attended and nursed them remained quite well.

"The first case appeared in the cabin boy, William Martingale, fourteen years of age, on the 26th, while the vessel was at sea. This boy had free communication with the shore, and accompanied some Arab boys to the country on the 20th of April, the day previous to the steam vessel leaving Egypt. This case terminated fatally in forty hours from seizure, and the dead body was placed in the Lazaretto on the morning of the 28th of April, that the nature of the disease, which was then considered doubtful, might be determined.

"The steward also sickened on the 26th, he was removed into the Lazaretto, at the same time with the body of the boy.

"The assistant-surgeon was about this time (2d May) attacked with fever, and it was feared he had been infected, but it proved otherwise."

The above is in substance the observations made by Dr. Mahony, then P.M.O., in his annual reports of those years. He offers nothing regarding the ship "Mabruca" with which we are not already acquainted.

"1841. Her Majesty's Frigate 'Castor,' from Kaiffa.

"On the 9th of March, 1841, Her Majesty's frigate, 'Castor,' Edward Patey, Esq., commanding, arrived from Kaiffa in fifteen days, having had several cases of plague on board, as detailed in the following medical report:—

1841. A REPORT of Cases of Plague which have occurred on board Her Majesty's ship "Castor," between the 22d of February and the 9th of March 1841.

			Date of Death.
February 22.	John Barey . . .	Boy	February 24.
" 22.	John Treliver. . .	. . . . .	" 25.
" 22.	Thomas Chaplin . .	Convalescent.	
" 22.	Edward Efks . . .	Boy	" 24.
" 23.	John Roberts . . .	. . . . .	" 26.
" 23.	Henry Boyd, boy . .	Convalescent.	
" 23.	George Campbell . .	. . . . .	March 2.
" 23.	Stewart Robertson .	Convalescent.	
" 23.	James Knight . . .	. . . . .	February 26.
" 23.	William Powell . . .	. . . . .	" 27.
" 25.	Thomas Cork . . .	Convalescent.	
" 25.	Joseph Lambert . .	Boy	March 7.
" 27.	John Crawfield . .	. . . . .	" 8.
Total number of cases			13
No. of Deaths			9
Convalescent			4

Remarks.

"Of the above cases those of Thomas Chaplin and John Crawfield, for reasons hereafter stated, may be considered doubtful.

"John Barey was embarked on board H.M.S. 'Castor' on Saturday, the 20th of February, and was taken ill on the 22d with symptoms of fever, on the 23d it was discovered that he had a bubo in the right groin.

"Treliver, Chaplin, and Efks were taken ill on shore on the same date with similar symptoms of fever, and embarked before there was any suspicion of the nature of the disease. On the 24th it was discovered that Treliver and Efks had each a bubo in the groin; Chaplin has never shown any other symptoms than those of mild gastric fever; but as a doubt many times existed, his case has been classed with the disease then prevailing. On the 23d, Roberts, Boyd, Robertson, and Campbell, were sent on

board, the three former having been seized the previous night, and Campbell the same morning. Knight and Powell were taken ill the same afternoon on board; all the ship's boys having been by this time embarked. Roberts never exhibited any other symptoms than those of malignant fever; all the others taken ill on the same date, displayed glandular swellings in the groins and axilla. Cork and Lambert were taken ill on board; the former had a tumour in one of the cervical glands, which has since suppurated. Lambert had one of the submaxillary glands affected, which terminated in sloughing; he had to all appearance subdued the original disease, but was carried off by the diseased state of the tongue and fauces, and the viscid secretions therefrom having produced sudden suffocation.

"Crawfield's case, at any other time, could not have excited any suspicion, but in the present instance, occurring under doubtful circumstances, has been classed with the other fatal cases. The symptoms had the greatest resemblance to delirium tremens, and indeed were treated as such.

"It will be observed that only one of the 'Castor's' crew has been attacked, and he was one of the several artificers who were quartered on shore with the 'Zebra's' men, and exposed to the same poison; and that the disease has hitherto happily been confined to those originally exposed to the contagion.

"No cases of plague had been known to have existed at Kaiffa, but cases had occurred at Acre; at which place a party of the 'Zebra's' crew had been stationed until the 12th of February, on which date, it has been since ascertained, that one of their number had died under very suspicious circumstances. The boys Barey and Lambert attended the diseased during their illness.

"The town of Kaiffa afforded ample space for the propagation of fever; and it is possible that the present disease may have had a local origin; but for the simultaneous occurrence of buboes in the greatest number of the cases, it was impossible to come to any other conclusion than that this was plague.

H.M.S. Castor,
9th March 1841.

(Signed)

HUGH JAMESON,
Surgeon.

"The sick were freely handled by four medical officers attached to both ships, and twelve sailors, without any precaution against contagion.

"(The sick were landed at the Lazaretto, with twelve attendants from the ship, and one guardian was put on board. The 'Castor's' crew consisted of 305 men, and there were eighty-seven men on board belonging to the 'Zebra.')

"On the 26th of May 1841, the Ottoman brig 'Mabruca,' Rajes Omor Tituan, master, arrived from Alexandria with a foul Bill of Health, with fifteen persons in crew and 180 passengers, Hadjis.

"The master of the brig 'Mabruca' deposed on oath, 'That on the 8th of May, he sailed from Alexandria direct for Malta; that nine days after his departure one of the passengers died, and the corpse, without being examined, along with the clothes he had on, were thrown into the sea, but that the remaining clothes which belonged to him were consigned to his son, who was on board. That no other person was either sick, or had died during the voyage until he was in sight of Malta, when a Hadji and two Hadjias were reported sick; he further deposed that one of the Hadjias had been brought to bed of a boy.

"That the ship was in ballast.'

"(The sick were removed to the Lazaretto, and one guardian was put on board the vessel. Before the 'Spoglio' two boatmen and four guardians were put over the parties landed, but the sick were nursed by three of their own people.)"

LIST of Persons who were attacked by the Plague on board the said Ottoman Brig "Mabruca" and whilst in the "Lazaretto."

Names of Persons.	Days on which		Remarks.
	Were attacked.	Died.	
Hadjia Fatima . . .	26 May .	28 May	{ Without external symptoms. Bubo on the left groin.
Had Inhamet Bin Ahmel	27 ,,	29 ,,	
Hadjia Aishia . . .	28 ,,	28 ,,	{ Without external symptoms. Without external symptoms
Had Ahmet . . .	28 ,,	28 ,,	
Had Kasan	28 ,,	Cured .	{ Bubo under the shoulder. Two " buboes under " the shoulder.
Had Bin Serti, sailor . . .	28 ,,	29 May .	
Had Hallet	29 ,,	29 ,,	{ Bubo on the groin. Bubo under the shoulder.
Hasan, sailor	4 June	6 June	
Habdalla, sailor	6 ,,	Cured .	{ Without external marks, Bubo on the groin.
Had Imhamet	6 ,,	8 June	
Hurschi, the master's son.	8 ,,	11 ,,	{ Bubo on the shoulder. Bubo on the groin, and carbuncle on his back.
Inhamet Bin Ibrahim . . .	8 ,,	Cured .	
Giovanni Cauchi, a Maltese boatman, who was put in quarantine from pratique with the Hadji on the 28th of May . . .	7 ,,	11 June	

“On the 24th of June 1841, the Austrian brig ‘Nazaret, Deodato Vucassovich, master, arrived from Alexandria with a foul Bill of Health, having nine persons in crew and ninety-seven passengers, Hadjis.

“The master of the brig ‘Nazaret’ deposed on oath, ‘That he left Alexandria on the 3d inst., with his present crew and 105 passengers, in ballast, and came direct to Malta to perform his quarantine, and then proceeded to Tangier, for which place he was bound.

“‘That during his voyage eight Hadjis died, and their bodies having been examined, no marks of plague had been discovered on any one of them, and that the bodies were thrown overboard the day of their death, and that the casualties had taken place as follows, viz. :—

<p>“ A Hadji died on the 5th June ” 8th ” “ A Hadjia died on the 10th ” 14th ”</p>	|	<p>A Hadji died on the 15th June 20th ” A Hadjia died on the 20th ” 23d ”</p>
Eight individuals.		

LIST of Persons who were attacked by the Plague whilst in the Quarantine Harbour, from the Austrian Brig “Nazaret.”

Names of Persons.	Days on which		Remarks.
	Were Attacked.	Died.	
Hag Imhamet Bin Semil -	1 July	2 July	Bubo under the shoulder.
Giovanni Petronio, sailor -	2 ”	6 ”	” ”
Health Guard, Vincenzo Bartolo, put in quarantine on the 28th with the Hadji - - - - }	4 ”	Cured	{ Besides the general symp- toms, a swelling under the shoulder.

(One guardian, Alessandro Merini, was put on board. Bartolo was one of the guardians placed over the passengers landed in the Lazaretto.)

Ottoman Brig 'Mabruka,' Georgiana,' from Alexandria.

“On the 8th of July, 1841, the Ottoman brig ‘Mabruka ‘Giorgiana,’ Imhammet Hadded, master, arrived from Alexandria in thirty-seven days, with a foul Bill of Health, with fifteen persons in crew and seventy-two Hadjis, laden with about 200 bales of linen and flax, 900 ardep of beans, and other articles, bound for Malta.

“The master deposed ‘That good health was enjoyed on board during the whole of the voyage.’”

Names of Persons.	Days on which		Remarks.
	Fell Sick.	Died.	
Had Mustafa - - -	8 July	13 July	Dysentery.
Saha, sailor - - -	13 „	18 „	Inflammation of the brain.
Had Hali Bin Illifa - - -	13 „	21 „	„ „ bowels.
Had Hascal, sailor - - -	24 „	25 „	Pestilential bubo.

A true Extract.

(Signed) E. BONAVIA,

Superintendent of Quarantine and Mar. Police.

In addition to these declared plague ships, 3,199 vessels have arrived within the same period from suspected ports with foul bills of health.

It appears from the above records, that since 1813, plague has been imported into Malta twelve times, without any extension of it to the population; and there is nothing to shew that on those occasions quarantine was more rigorous than in 1813. The health guardian who was embarked on board the “Sta. Trinita,” and the two persons who attended and nursed the sick (all from pratique) were not attacked. In the “Costanza,” of five persons (from pratique) who were put on board for depurating the ship and landing the cargo, two were attacked, but recovered. On board the “Mishoud” two of the crew, who nursed and attended their fellow sailor, in free communication with him, remained in perfect health. In the cases from the “Acheron” a similar impunity is noted—but the health guardian placed over the passengers from the brig “Nazaret,” in the Lazaretto, where there were ninety-seven Hadjis, (or pilgrims,) did not escape an attack supposed by Dr. Gravagna to be “a slight case of plague.”

The attack of one of two boatmen, who were sent, from pratique, to attend to the wants of the 180 Hadjis, disembarked from the brig “Mabruca” in May 1841, was considered by Dr. Gravagna, principal physician of quarantine, as conclusive of the transmission of the disease by contact. This man, Giovanni Cauchi, was put in quarantine with the Hadjis on the 28th of May, and with eight others assisted them, and was in communication with them in the Lazaretto from 7 a.m. to 8 p.m. of that day, but it does not appear that he ever was on board the brig, or in contact with the sick. I have taken much pains to ascertain every circumstance connected with this case. Antonio Chevalier, a

health guardian, and the surviving boatman, Filippo Felice Saliba, who were with Cauchi, both state that 150 of the Hadjis were put into a large room, and the remainder into a smaller one adjoining the Lazaretto, on the morning of the 28th, and were there till the following morning—that the windows of the former room are about twelve feet from the floor—that the same night, about nine o'clock, Cauchi and his fellow boatman, entered the rooms where the Hadjis were, for the purpose of searching for two missing keys, and remained about ten minutes questioning them concerning these keys—and that two days afterwards these two men were employed for about an hour in sweeping the rooms after they had been vacated by the Hadjis, but before they were fumigated. Gabriel Cauchi, father of the deceased Giovanni Cauchi, confirms this statement, Admitting Cauchi contracted this disease from an atmosphere polluted by 177 filthy beings* shut up in close rooms for twenty-four hours, previous to the Spoglio, in consequence of greater constitutional susceptibility than his companion, who was exposed under similar conditions, this is no proof of a specific cause. Seven others in communication with the Hadjis in the open air, encountered such exposure with entire impunity.

The first report of Dr. Gravagna on this case is as follows:—“8th June 1841, morning. Yesterday a boatman, named Giovanni Cauchi, showed me a boil on the back which has this morning burst; the *boil* does not appear of a *pestilential kind*, but this morning he is feverish and had some vomiting. 9th. Is worse this morning. 10th. Had an exacerbation of fever last evening, accompanied with delirium. This morning there appears to be a remission, but he walks with difficulty and staggers. The *boil* reported on the 7th (8th?) is discoloured, brown and flat; besides he feels a pain in the left arm-pit, though no swelling is yet visible. All these symptoms, together with a fever of a serious and malignant character, induce me greatly to suspect that the disease must be regarded as plague. 11th. Is dying. 12th. The boatman, Giovanni Cauchi, aged 24, of Valetta, died this morning at four o'clock, presenting on his body a bubo in the arm-pit and a carbuncle of the same character of the carbuncle of plague.” The above details show that Dr. Gravagna had no grounds (the after-alleged source of the disease is not specified) for his final conclusion, except the aggravation of the disease. No written report is made on the 7th, when the doctor first saw Cauchi. He calls the *boil* not pestilential, and remains apparently without suspicion till the 10th, notwithstanding that all the

* The dress of the Hadjis, a sort of a loose toga, consisting of a thin woollen stuff, is rarely changed or washed from the time they leave their country till they return to it.

symptoms were daily increasing. Similar cases occur in Malta; and to show this more clearly, I may refer to six cases, reported about the same time, which were more or less connected with the same ship (the "Mabruca,") or, perhaps, the same *season*. The first was Antonio Mifsud, the guardian over the pilgrims and crew. On the 13th of June, he presented "an inflamed boil" which had "neither the form nor appearance of pestilential carbuncle," without fever. The second was Gabriel Cauchi, father of the boatman, who on the 14th of June, had three "small boils" on the superior and anterior part of the left thigh, without fever, and presented "no suspicious appearance of plague." The third was one of the crew employed as a depurator in the Lazaretto on the susceptible cargo. On the 25th of July he presented "two small boils" on the right leg, with "pain of head and febrile heat." In consequence, it would appear of this last symptom, Dr. Gravagna suspends all judgment, and states "at present I am unable to offer any opinion." Three more of the crew similarly employed were attacked with fever, two synocha, and one bilious, without external eruption. All these six cases rapidly recovered. No further suspicion or allusion to their origin appears.

Here then the absence of fever in the two first cases determines the diagnosis; the external disease, considered the *sine qua non* proof of pestilence, being disregarded; the presence of fever in the third, in conjunction with external disease of no greater severity, renders the case doubtful and requiring further observation; while fever places the three last cases in a totally different category. It is pretty evident from this, that Dr. Gravagna rested his conclusion on Cauchi's case, chiefly on the degree of disease, the evidence of exposure to the alleged cause in all the other cases being equally admissible. But there were no circumstances in one more than in another of them to justify the suspicion of transmitted disease, all being within the precincts of the Lazaretto, which was not the only place in Malta remarkable this year for extraordinary sickness. According to the same register, there were 119 cases of fever among the shipping, of which eighteen died. Ninety of the former and ten of the latter were either under the disease, on, or attacked after, arrival in Malta. The number of cases is treble that of any other year, except 1840, (also remarkable for plague ships), in which there were seventy-one attacks, and eighteen deaths in the shipping. Moreover, the number of fatal cases of dysentery in those ships co-existing with cases of fever, as well as the unusually frequent use by Dr. Gravagna of the terms, bilious remittent, bilio-gastric, icterodes, and nervous fever, declare the presence of more energetic causes for the occurrences, than any proved communication in the Lazaretto with cases of plague. I would ask on what grounds the other cases are excluded from the

category in which Cauchi's case is placed? Is it quite beyond dispute that plague possesses a specific virus sufficing for its extension independently of local and other conditions? Where does the line begin that separates plague from ordinary anthrax and fever? This claim for plague of a distinct and separate poison, while fevers in the same harbour and in the whole population afford indications of a wide spread cause, is simply to assume a distinction before a difference has been proved to exist. I believe the benign fever among the troops, and anthrax in the civil population are the modified results, under different conditions, of the same general cause, though the features of the disease be varied. The case of Cauchi in the Lazaretto has been differently interpreted, and apparently on no better grounds. Does plague admit of no such modifications? Let us see. In the seventy-seven cases on board the twelve plague ships, we find thirty-seven with bubo, five with carbuncle, five with petechiæ, four with tumour, and four with carbuncle and petechiæ, four with bubo and petechiæ, and one with bubo and carbuncle, while no less than seventeen cases present no external marks whatever. What symptoms did these cases show different from ordinary fever? None; except in their being preceded or associated with cases having outward disease, and therefore called plague.

Another point is, that in the "Acheron" (1840) the cases of plague showed themselves seven days after the ship's departure from Alexandria, on the day of arrival in Malta, and in the "Mabruca" (1841) only one suspicious case occurred, nine days after leaving; whereas twelve cases, exclusive of Cauchi's, took place, an interval of from eighteen to thirty days having intervened after communication with Alexandria; showing that the port of arrival, rather than that of departure, is to be suspected.

It appears that the cabin-boy in the "Acheron" had gone into the country at Alexandria with some Arabs; and it is not improbable that the steward had also been on shore.

The only other point of interest connected with these ships is, that they all arrived between the 22d of February and the 8th of July, corroborating general experience, how much the disease is dependant on season. It is also worthy of remark, that all, except the Russian frigate "Castor," had left places suffering from the plague.

From the foregoing I would draw the following deductions:—

1st. That there is no evidence to prove, or even to render it probable, that the plague was introduced either into Malta in 1813 or into Gozo in 1814 by importation.

2d. That there is every reason to believe that the plague existed in Malta at the time of the arrival of the ship supposed

to have introduced the disease ; and that in Gozo the first case (a stranger) contracted the disease from local causes, which, enhanced by quarantine, produced it in others.

3d. That the lower orders, and those occupying the lowest, most crowded, and worst ventilated dwellings, furnished the great majority of cases ; which decreased in proportion with improvement in these respects.

4th. That as this discriminative preference of the disease to attack certain classes, living in certain localities, never obtains to the same extent with diseases arising from a specific contagion, it is more than probable that the causes engaged in the generation of the plague are not constant, but variable and accidental ; its initial cause, the peculiar atmospheric constitution having no power to develop the disease, unassisted by season and local conditions.

5th. That the transmissibility of plague from person to person out of the noxious atmosphere in which it originated—the only certain test of such a power—has not been proved by the four instances, during thirty-eight years, in which it is alleged to have been communicated to persons employed by the Quarantine Department of Malta, carbuncular affections being endemic among the population of this island.

6th. That quarantine restrictions enforced by the penalties of *corporal punishment* and *death*, and seconded by the greatest dread of contact with suspected persons or things, among the panic-struck populations of Malta and Gozo, utterly failed to arrest the progress of plague ; on the contrary, where these restrictions were carried to their utmost limits by an absolute power, there the disease persisted longest, and the mortality was greatest.

(Signed)

W. H. BURRELL, M.D.

Staff Surgeon 1st Class, P.M.O.

Malta, 12th of Oct. 1852.

To the General Board of Health.

NOTE A.

EXTRACTS from PROCLAMATIONS issued for the enforcement of
QUARANTINE at Malta, in 1813.

The following short extracts from these proclamations will convey some notion of the stringency with which quarantine was enforced, particularly in Valetta and Floriana, where they were carried out to the letter. They are well deserving of perusal, and the attention of all interested in the subject of plague; for to them may be fairly ascribed much of the sufferings in 1813.

5th May.—Embargo continued on the shipping—the courts of judicature, the theatre, and other places of public resort closed—the respective offices of government limited to indispensable exigencies—medical persons, aided by other responsible inhabitants, to visit the districts allotted to them.

7th May.—Persons appointed to visit the several quarters of the town, and the lieutenants and other persons appointed for districts to consider themselves branches of the Board of Health, and to report to that Committee in order that means may be taken to punish the disobedient—dogs and cats to be kept in their respective houses—crews on board of ships to consider themselves in quarantine—to avoid all intercourse and crowding—no one permitted to sell linen in the streets—no one allowed to beg.

10th May.—The masters of the principal part of any house to watch *the families in the mezzonini's* and of the lower apartments(?)—to purify every house in the island, and to burn all useless clothes and rags.

12th May.—Recommendation to the inhabitants to remain shut up in their houses, or, being obliged to go out, to avoid touching any person or thing that can convey infection—to employ a person who is not admitted into the house to purchase the necessaries of life—to have a tub of water at the door into which meat and vegetables are to be thrown and well immersed previously to being touched by the family—money to be passed through vinegar—bread if received hot to remain untouched till cold—papers to be smoked—linen to be *washed in the house*, and such as may already have been given out, to be received in water and remain therein at least 12 hours before

it is touched—the chief of every family to enforce those on his dependants, and those not conforming to be allowed to quit the house.

15th May.—*Prohibited throwing nuisance into the street under a penalty of eight ounces*—recommends that every one should avoid all intercourse, and to keep themselves retired and at a distance from all unnecessary or incautious communication—the punishment of death to any one concealing the disease.

19th May.—Ordered “that those who cannot show a reasonable and well-founded motive for leaving their houses, will be considered *disobedient, and punished by the police magistrates.*” Recommends a general purification of clothes and houses.

21st May.—Accommodation provided for healthy persons from infected houses.

22nd May.—Communication with the shipping to cease after sunset—no boat to ply after eight o'clock—no passage boat to carry more than five persons—the Marina Gate and wicket to be shut after eight o'clock.

24th May.—A reward of 400 dollars for the detection of “those endeavouring to defeat the beneficent intentions of Government.”

29th May.—No person to change his place of residence or to admit any one to become an inmate without permission—all shops to be shut from sunset till six o'clock in the morning—no shop to be kept open during the day without a written authority.

From sunset till sunrise all the inhabitants are to remain in their respective houses—all the foregoing to be observed “under the pain of incurring the punishment awarded to a breach of the quarantine laws.”

1st June.—No person to go beyond the limits of the district(?) The deputies to prevent all persons from assembling, and to prohibit every unnecessary communication between families(?) Any acting in disobedience to these orders to have their whole family placed in the most rigid quarantine. All commercial operations not indispensable to be suspended. The lining of calesses to be removed.

12th June.—No one to pass to Vittoriosa, Senglea, or Cospicua.

15th June.—No one to leave his ship without a written permit. No person to be permitted on board any ship. When any person is taken ill no one to leave the ship until the case is reported to the visitors.

19th June.—That money shall be passed through vinegar; and many recommendations as to all kinds of food.

29th June.—Extraordinary Council of Health established, at which the Governor presides.

8th July.—All vessels in port to be considered in quarantine, “and no hired boat to approach them unattended by a guardian from the Health Office.”

11th July.—All passes to cease to be valid from the 14th instant.

13th July.—All communication suspended in regard to the towns of Vittoriosa, Senglea, Cospicua, and Calcara of Vittoriosa, between each other and all parts of the island. The communication between Valetta and Floriana to cease.

17th July.—“No person residing in Valetta or Floriana shall go abroad even within the limits of his respective district, unless *between the hours of 6 and 10 o'clock* in the morning, each of which hours will be notified by the sounding of the great bell of St. John’s church.” That between the above-mentioned hours all unnecessary communication is to be avoided. Only one person from each family to be permitted to go to the market of the district. “That at the expiration of the time above specified the venders at the different markets shall quit their stalls; the shops shall be shut, and all the inhabitants shall be obliged to *retire within their respective places of abode until the following morning.*”

16th July.—Pigeons, fowls, and poultry of every description to be confined, and cats, dogs, and other animals to be prevented going out. No clothes of any description to be exposed in the balconies, windows, or doors. Persons transgressing any of the articles in the proclamation to be arrested, and rendered *liable to corporal punishment.*

1st August.—The punishment of death to any person changing his residence without special permission from the Council of Health; the same to any one concealing their illness; the same to persons guilty of entering an infected house; the same to persons wilfully concealing the illness of others; the same for the concealment of any article (“even though not susceptible of infection.”)

2nd August.—*All permits, whether to town or country, to cease. That the proclamation of the 17th July authorizing persons to go out to market between the hours of 6 and 10 in the morning be annulled, “and that no inhabitant of Valetta or Floriana, with the exception above provided for, shall be at liberty to go abroad into the street, without subjecting himself to the most prompt and rigorous punishment awarded by the laws of quarantine.”*

4th August.—That “the inhabitants of each district be invited to form themselves into a guard for the maintenance of good order, cleanliness, and the strict observance of quarantine.”

10th August.—“No person to shoot or go out in the pursuit of game under the severest penalties.”

17th August.—Antonio Borg shot for having been discovered concealing the pestilential disease with which he was affected.

22nd August.—Considering the number of hands required for the cotton harvest, prohibits every one, under the severest penalty, from gathering it, but orders it to be consumed by the cattle.

25th August.—That all the cotton of this year is to be considered an infected article.

27th August.—Population prohibited buying fruit at the barriers.

10th September.—Cordons of troops ordered to surround the casals of Zebbug, Birchircara, and Curmi.

4th October.—Congratulates the inhabitants on the declension of the disease.

NOTE B.

RETURNS from HOSPITAL RECORDS, &c., of Cases of CARBUNCULAR AFFECTION in MALTA.

The following Return, which I have framed from the registers of the civil hospital, shows the number of cases admitted, from 1821 to 1843 inclusive, under the terms of "anthrax," "carbuncle," "furunculus," and "boil," the various names apparently applied to the same disease by different surgeons. "Pustula," "tumor," and "tubercle" occur frequently in these registers, which I have excluded, though, judging from the time in hospital and number of deaths, they evidently embrace much acute disease of an eruptive character.

The cases under the former heads were in adults, many of them young, but the majority middle-aged and old. Several appear to have been slight, but the duration of the malady in the greater number bespeaks severe disease.

I have appended the number of males admitted under all diseases in the month of July of the several years. The relation in numbers between these and the admissions with "anthrax" is not remarkable. The fluctuation in the number of the latter deserves more attention, and I may remark, that unless anthrax was brought under some other head, the three years preceding 1821 seem to have been nearly exempt. The small number of other diseases these years is also remarkable, the admissions of males in July being 83, 130, and 99.

YEARS.	January.	February.	March.	April.	May.	June.	July,	August.	September.	October.	November.	December.	Total.	Died.	Admission of Males into Civil Hospital in July of each Year.	Arrival of Ships with Plague.
1821	.	.	3	1	.	.	1	1	2	3	2	2	15	1	84	One.
1822	1	.	.	.	1	.	3	.	1	1	.	.	7	.	128	
1823	.	.	.	1	.	.	.	.	.	2	.	.	3	.	131	
1824	1	.	.	4	1	3	1	.	.	.	.	.	10	1	143	
1825	.	.	1	.	.	.	.	.	.	.	.	.	1	.	141	
1826	.	1	.	.	.	.	1	.	.	.	.	2	4	.	171	
1827	6	.	.	.	.	.	.	.	.	.	1	1	8	.	168	
1828	2	2	.	4	1	.	1	7	.	.	.	1	18	.	182	One.
1829	.	1	1	1	1	1	.	.	.	1	.	3	9	.	110	
1830	1	1	2	1	.	1	4	2	.	1	.	2	15	1	187	
1831	.	1	1	1	2	.	2	2	.	1	1	3	14	.	222	
1832	4	3	1	1	2	4	1	.	3	.	.	3	22	1	188	
1833	7	6	7	5	6	7	3	2	4	3	1	2	53	1	281	
1834	2	1	5	1	3	3	3	4	3	1	2	2	30	1	207	
1835	2	5	2	.	.	3	1	3	3	.	.	.	19	.	239	
1836	1	2	1	2	1	3	1	.	.	1	.	.	12	.	217	
1837	3	.	1	5	2	1	2	1	1	4	.	.	19	.	203	Three, and
1838	2	1	2	1	1	.	1	.	1	1	1	2	13	.	231	epidemic
1839	8	1	3	3	4	3	3	7	2	3	2	2	41	.	202	cholera.
1840	.	2	1	.	3	5	4	8	5	1	3	2	34	.	278	One.
1841	3	1	2	2	4	3	4	4	8	4	1	.	36	1	284	Four, and
1842	1	1	3	1	2	2	.	4	5	2	1	.	22	.	249	wide spread
1843	1	.	3	2	1	2	3	6	2	1	1	4	26	.	234	fever in all
																classes.
Total	45	29	39	36	35	41	39	51	40	29	16	31	431	7	4,410	
	149				166				116							

It will not escape notice that of the fifteen Plague ships which arrived in Malta since the English took possession, eleven arrived in well-marked epidemic years in the island, namely, three in 1813, three in 1837, one in 1840, and four in 1841. I have made most diligent search for the registers of the civil hospital for 1812 and first quarter of 1813, but without success. It is therefore probable that, like some of the valuable tapestry in the governor's palace, they were considered suspected, and destroyed.

RETURN of Cases of ANTHRAX in MALTA and Gozo, from 1st January 1850 to 31st August 1852, taken from the Records of Dispensary Practice.

MONTHS.	1850.		1851.		1852.		Total Number of		Showing the comparative prevalence in Winter, Summer and Autumn.
	No. of		No. of		No. of				
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
January . .	24	..	24	4	9	..	57	4	} 238
February . .	31	..	12	..	22	..	65	..	
March . .	24	1	24	..	21	..	69	1	
April . .	14	..	19	..	14	..	47	..	
May . .	23	..	23	..	20	1	66	1	} 316
June . . .	31	..	28	..	29	1	88	1	
July . . .	16	..	28	1	31	1	75	2	
August . .	21	1	28	2	38	1	87	4	
September . .	24	1	26	50	..	} 140
October . .	4	..	27	..	..	..	31	..
November . .	7	..	17	..	..	..	24	..
December . .	16	..	9	1	..	..	25	1
Total . .	235	3	265	8	184	4	684	15	

(Signed) J. B. H. COLLINS, M.D,
Inspector of Civil Charities and Prisons.

Dr. Calleja, physician to the police establishment, has furnished me with the following table and remarks, which are important, the cases having generally occurred in the reputed haunts of Plague:—

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Died.
1850	..	1	4	2	1	1	1	..	..	..	1	1	12	2
1851	2	2	..	1	..	5	5	3	1	1	1	..	21	2
1852	2	2	..	..	3	4	4	7	..	..	..	..	22	1
Total	4	5	4	3	4	10	10	10	1	1	2	1	55*	5
	16				34				5					

* The majority of these are included in the preceding return.

“The cases of anthrax I observed in the district of Valetta, from the 1st of January 1850 to the end of August 1852, amounted to fifty-five, as shown in the above table. Twenty-two of these cases were serious, the others rather trifling. Of these serious cases I sent five to the Central Civil Hospital, of which three proved fatal.

“Cases of anthrax in Malta appear rather in summer than in winter, more in males than in females; in persons of low condition and of sickly appearance, dwelling in damp places, as the Mandraggio and Strada Pozzi.

“The cases in Valetta appeared to be caused by want of proper food, filth, and long sickness. Three cases under my care were followed by death, and two others were reported to me by other doctors.

“The first fatal case I observed was in a rather stout and robust man of sanguine temperament, aged 74, who lived in Strada Toro, together with many other persons. He had an anthrax of considerable extent on the right shoulder, and it affected a portion of the muscles of the vertebra. He died after fourteen days of sickness with symptoms of *encephalitis*.

“The second case occurred in the Mandraggio, in a man 36 years old, of delicate appearance. He presented an anthrax on the right side of the loins, which also affected a portion of the vertebra. He died under excruciating pains, on the 27th day of his illness.

“The third case was in a woman, aged 66, of lymphatic temperament, living in the Mandraggio. She had an anthrax on the nape of the neck, and expired on the 22d day of her illness, under nervous symptoms.

“Two other fatal cases were reported to me by other doctors. The first was in a consumptive man and the other in a butcher. They both died under nervous symptoms.

“The above fifty-five cases of anthrax appeared in the following streets:—

*Mandraggio	-	-	-	-	-	-	17
*Strada San Patriizo	-	-	-	-	-	-	2
* „ „ Marco	-	-	-	-	-	-	2
*Strada Reale, near St. John's Church	-	-	-	-	-	-	1
„ Stretta, under the Main Guard	-	-	-	-	-	-	2
„ Mercanti, near to the Castellania	-	-	-	-	-	-	1
* „ San Domenico	-	-	-	-	-	-	1
* „ Del Toro	-	-	-	-	-	-	2
* „ San Carlo	-	-	-	-	-	-	1
* „ Pozzi	-	-	-	-	-	-	3
* „ St. Ursula, near Strada Pozzi	-	-	-	-	-	-	2
* „ Federico	-	-	-	-	-	-	1
* „ San Guiseppe	-	-	-	-	-	-	2
* „ Fontana	-	-	-	-	-	-	2
Without any houses	-	-	-	-	-	-	8

viz., three in the police station, an English sailor, and the others mendicants.

“Of the others we have only their names and ages, not having appeared more than once at the public dispensary.

(Signed) “F. CALLEJA, M.D.”

Dr. Portelli, Physician to the Civil Hospital, communicates to me the following:—

“The number of cases of carbuncle treated by me in my private and hospital practice during the last 20 years amounts,

* All the streets marked with * were notorious for numerous cases of Plague in 1813—See map 2.

as near as my memory serves, to 120. The majority of the individuals among whom this disease occurred were poor, and between the ages of 50 and 70, some of them habitually addicted to the abuse of intoxicating liquors, and the greater number living in low damp places. The situations of these tumors were generally the inferior part of the neck, between the shoulders and the loins, varying from the size of a pigeon's egg to a circumference of 8 inches, and preceded by rigors, headache, prostration of strength, nausea, and in some cases by vomiting and want of sleep. These symptoms were very soon succeeded by fever, by the eruption of carbuncle, slightly elevated typhoid symptoms, and in some cases with delirium and death. These symptoms were invariably protracted in their course.

“Carbuncle is not a common disease in this island, but mitigated forms of anthrax are commonly to be met with.”

Dr. Bardon has furnished me with the following :—

DEAR SIR,

Malta, 27th August 1852.

WITH regard to cases of anthrax and carbuncle, I beg to reply to your questions as follows :—

From my registers I find that, in 1821, I treated in the Lazaretto of Malta, eight individuals under the above disease, and have transcribed their clinical history. From that you will perceive that the sufferers belonged generally to the poorer class and that five cases recovered and three died.

From the situation and symptoms it appeared that these cases were those of mild Plague.

Anthrax is a prevalent disease in Malta, particularly in summer, and when attacking weakly subjects is almost always fatal.

I am, &c.,

SALVAT BARDON, *M. Chirurgo.*

Case 1.—“Salvatore Spiteri, æt. 27, [porter, of strong constitution; was attacked 25th March 1821, on getting out of bed, with severe pain of head, rigors, fever, white tongue, thirst, inclination to vomit, and general debility. 26th. Pain in the right groin and glandular swelling, prostration, and bilious vomiting. 27th. Restlessness and constipation, relieved by purgative, and followed by much diminution of fever and of the general symptoms, and at the end of 10 days was perfectly recovered.

Case 2.—“Saverio Zammit, æt. 30, tailor, of spare habit; attacked 28th March, on getting out of bed, with general debility, pain of head, vomiting, rigors, fever, and inflammatory irritation in the left ham, with pain in the corresponding groin. Purgative and cataplasm prescribed. On the 3rd day abatement of symptoms and irritation of ham disposed to suppurate. 4th day, tumour suppurated and opened, with subsidence of all the symptoms; and on the 12th day cicatrization of tumour and recovery.

Case 3.—“Lorenzo Attard, æt. 37, porter, of strong and robust constitution; attacked 29th March, on getting out of bed, with severe pain of head, general debility, fever, and delirium, with a carbuncle on the right shoulder. On the second day another carbuncle appeared on the upper part of right side of neck. 3rd day, rapid aggravation of symptoms, general prostration and coma, under which he died. Body livid and covered with petechiæ, particularly on the breast and lower part of abdomen.

Case 4.—“Michele Bartolo, æt. 32, boatman, of weak constitution; attacked 30th March, on getting out of bed, with severe pain of head, rigors, fever, and vomiting. 2nd day, aggravation of symptoms, bilious vomiting, severe pain of head and continued delirium. 3rd day, extreme debility, coma, total prostration of strength and death. Body livid, a few petechiæ scattered on the inferior extremities, and a quantity of white froth from mouth and nostrils before death.

Case 5.—“Vincenzo Capar, æt. 39, tailor, of strumous diathesis; was attacked 1st April, on getting out of bed, with pain of head, pallor of countenance, rigor, bubo in right groin, and incipient carbuncle on the left superior part of back. 2nd day, vomiting of greenish matter, delirium and extreme debility. 3rd day, carbuncle and bubo larger, but with aggravation of symptoms; vomiting of black matter and looseness of bowels; and on the 7th day, under a rapid increase of symptoms, and black petechiæ over the whole surface, he ceased to live. Body livid; contraction of the superior and inferior joints, and a gangrenous eschar over the surface of the carbuncle.

Case 6.—“Vincenzo Vella, æt. 30, shoemaker, of rather weakly condition; attacked on the evening of 5th April, with rigors, fever, thirst, and constipation. 2nd day, copious alvine evacuation of black and fetid matter, abatement of symptoms, and on the 7th day was perfectly recovered.

Case 7.—“Giuseppe Inguanos, æt. 18, porter of bilious temperament; attacked on 10th April, on getting out of bed, with rigors, fever, flushed countenance, and vomiting. 2nd day, bubo at the internal and superior part of right thigh. 3rd day,

bubo inflamed, painful, and more elevated. 4th day, abatement of symptoms, bubo matured, opened, and discharging abundant purulent matter. 6th day, progressing favourably. 10th day, remission of symptoms, bubo disposed to cicatrize, and on the 13th day was quite well.

Case 8.—“Fortunato Debona, æt. 27, porter, a strong constitution; attacked 12th April, on getting out of bed, with severe pain in the lumbar region, weakness of limbs, cold shivering, fever, paleness of countenance, white tongue and bubo in the left groin, advancing to suppuration. 2nd day, bubo suppurated and opened, followed by abundant discharge and relief. On the 10th day the bubo cicatrized, symptoms disappeared, and the patient perfectly recovered.”

Dr. Bardon states that the above were from “Alexandria.” They were all natives of Malta. These cases are interesting as showing the wide range of symptoms. They are authentic, and valuable as being connected with one of the Plague-ships, and showing a similarity to undoubted Plague.

Dr. Bardon freely handled the above cases, considering himself protected by his attack in 1813.

Sufficient has been adduced, I think, to show a decided disposition in the inhabitants of Malta to carbuncular disease and eruptions of a similar kind, ranging from the common furunculus of the young, or those healthily placed, to the aggravated carbuncle of the old and sickly, or those living in filth and misery.

How many of the above cases were sporadic cases of Plague, or closely allied in their nature to that disease, I will not stop to inquire. But there is sufficient, I think, to support the belief that the climate and subjects that can in ordinary years produce carbuncle to the extent here shown, will be capable under abnormal conditions to multiply indefinitely its numbers and virulence. Whether the disease in its exalted form acquires new attributes, or claims a different name, I leave for others to determine; but being still chiefly found in the same classes and localities, in the same seasons, and marked by a similar febrile action, it is here probably necessary to guard against the common error of mistaking degree for radical differences—the occasional aggravation of indigenous disease for a new and imported one.

Carbuncle would appear to be nearly constantly present as an endemic disease in Malta.

The periods between 1847 and 1850 inclusive, particularly in the three last years, the disposition to cholera was marked and decided. With the military there were 38 deaths in 1848, 8 in 1849, and 135 in 1850; and in the latter year 1,764 deaths from the same disease occurred among the civil population.

In the autumn of 1847 a severe and wide-spread influenza in all classes carried off 81 civilians; and in the autumn of 1849 a destructive epizooty appeared among the oxen, destroying 750 head.

Carbuncular disease, though still appearing in these years, seems to have its own appropriate conditions, and the great mortality from that and fever in 1846 would appear to indicate, to some extent, a common cause. 1846 was also remarkable for a more than usually complicated and fatal fever among the troops.

From 1848 to 1850 the number of cases among the troops under the general head of "Phlegmon" was remarkable, namely, 1,357; the three preceding years only yielding 427.* Dr. Gulia, of Cospicua, a poor and densely crowded district, informs me that from 1846 to 1850 inclusive, he treated 89 cases of carbuncle, six of which proved fatal, and by far the greatest number of them were in the same streets that were chiefly infested by plague in 1813. In 1851-2, years most remarkable for the absence of epidemic disease, he met with 35 cases, but all of a benign character.

In ordinary years, according to Dr. Calleja, malignant fever is not so much found among the subjects of carbuncle as in those under somewhat better circumstances.

Fever is never absent among the military in summer. It varies considerably in the number of cases in different years, but little in character, except in particular seasons, when it rises into a very malignant remittent, with no tendency to the intermittent, which is almost unknown as an indigenous disease.

In the several invasions of the Plague in Malta, it will be observed that, like carbuncle, it has prevailed at all seasons, but more especially in summer. In 1655, when only 20 persons died, it commenced, and terminated in the last quarter of the year. In 1675-76 and 1813—severe visitations of plague—it commenced in the former in December, in the latter in March, attained its height, in both, in the hottest months, and declined in autumn. So far plague and the ordinary carbuncle of Malta resemble each other, and the cases furnished by Drs.

* Dr Calvert states that in 1813, in the 14th Regiment, every whitloe festered and every scratch became an ugly sore; a tight shoe was sufficient to produce a livid boil, and the military hospitals were crowded with them. From this it would appear that the 14th Regiment, though free from decided Plague, was not exempt from some assimilating influence: thus pointing to the conclusion that Plague, like other pestilences, has probably smaller and more equivocal beginnings than we are generally inclined to admit.

Calleja and Gulia can leave no doubt of both diseases being found in the same localities and among the same class of subjects.

YEARS.	Deaths from Anthrax.	Deaths from Fever.
1846	22*	121
1847	3	112
1848	4	65
1849	1	86
1850	3	51
1851	8	50

* Two more than died in the Plague of 1665, but probably being more scattered attracted less attention.

NOTE C.

NOTE of the Amount of EXTRAORDINARY EXPENSES incurred by the Civil Government of Malta in consequence of the Plague, during its prevalence in the Years 1813 and 1814.

Maltese Scudi.

Disbursed by the Treasury of Government, in the pay of health officers, clerks, guards, physicians, surgeons, expurgators, scavengers, funeral attendants, and workmen; in the erection and repair of barriers, huts, cemeteries, and other works; in alms to the poor, care of the sick and suspected, drugs, funeral charges, and various other exigencies	-	-	1,794,625
Disbursed by the Jurats of the University (Grain Concern), namely, for the accommodation and maintenance of persons detained under observation in Fort Manoel and its confines, from 8th May 1813, to 30th April 1814	-	-	62,527
For the accommodation and maintenance of the suspected persons encamped in the garrison ditches outside of Port Reale, St. Anna, and Bomb, and of the patients in the temporary hospitals in the ditches, from 20th June to 11th October 1813	-	-	26,074
To the deputies of the eight sanitary districts of Valetta, for their disbursements on account of the maintenance of the indigent persons confined to their houses in the several districts, from the 27th June to the 30th September 1813	-	-	44,325
Paid by the Jurats for the cost of wine, provisions, fuel, and oil, being portions of those delivered for distribution for the use of the suspected persons and patients confined in Fort Manoel, the ditches of the garrison, and other places	-	-	21,167
Miscellaneous disbursements for various services connected with the supply of the inhabitants during the epidemic	-	-	12,079
Cost of bran and dry clover, for the food of cattle belonging to private individuals detained in quarantine in the receptacle at Casal Curmi	-	-	8,087

Cost of bread, fresh meat, wine, and other articles of provision, furnished by various parties, for the use of the persons confined to their houses or in other places	-	-	220,669
Cost of bread and meat supplied to persons confined in Casal Curmi	-	-	3,612
Value of 9,352 salms of wheat issued from the University granaries, and administered in alms to the poor of both islands through the agency of the Lieutenants of Casals, the store-keepers of the University (under the direction of the Jurats), and the Charitable Committees	-	-	372,149
Value of other articles of provision issued from the University stores for the same purpose	-	-	18,371
			789,060
In all, by the Civil Government	-	-	2,583,685
At the value (<i>then</i>) of 1s. 9 $\frac{3}{4}$ d. per scudo, = 232,531l. 13s. sterling.			

Correctly extracted from the Records
in the Audit Office.

(Signed)
Malta, 17th Feb. 1853.

WM. HY. THORNTON,
Auditor-General.

Mr. Thornton informs me that "in 1813, when the plague broke out, the local revenues were in the most flourishing state; up to 1809 they were aided by large subsidies from Great Britain, but from that time, the commercial prosperity of the island having increased, the Civil Government managed to meet its expenses with its own resources, until the cessation of commercial operations, which were driven elsewhere by the epidemic, precisely at the time when the disasters of the French armies threw other ports open to trade. The revenues of the year 1812 amounted to between 130,000*l.* to 140,000*l.*, a large sum, considering that there was then no corn monopoly of Government, although in the present open trade the consumption duty on wheat has now become the chief source of the island revenues. The deficiency of funds in 1813 was supplied by a subsidy of 172,750*l.* from the military chest, whereof 16,875*l.* was repaid

in 1816, leaving 155,875*l.* as the expense which the epidemic occasioned to Great Britain in aid of the Civil Government of Malta, besides the extra amount incurred for the service of the garrison."



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