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CHOLERA COMMITTEE.

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# REPORTS

SUBMITTED TO

HIS EXCELLENCY THE GOVERNOR.



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HIS HONOR  
THE LIEUT. GOVERNOR.

I have the honor to submit, for the information of His Excellency the Governor, that, at a meeting of the Cholera Committee held on the 14th inst., the following Resolution, moved by Mr. Hardman and seconded by Dr. Roncali, was unanimously agreed to : —

“ Resolved : It is the opinion of this Committee that the Report of the “ Sub-Committee on ‘ House construction and provision of sanitary dwellings “ for the labouring classes,’ and their ‘ Note on the construction of improved “ labourers’ dwellings,’ without being formally adopted in their details, but “ admitted on principle, should be transmitted to Government without delay.”

The Report and Note, referred to in the foregoing Resolution, are forwarded herewith.

16th June, 1888.

S. L. PISANI, M.D.  
*Chairman.*

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### **Cholera Commission.**

#### REPORT OF SUB-COMMITTEE ON HOUSE-CONSTRUCTION, AND PROVISION OF SANITARY DWELLINGS FOR THE LABOURING CLASSES.

1. The Fortified Cities, and even some parts of the villages of Malta, are over-crowded to an extent that is dangerous to public health. Many blocks of houses exist, so closely packed together, that it is impossible to secure the proper amount of light and air. The congestion is so great, that the full benefits of sanitation cannot be realised until relief is given by the construction of new and improved dwellings on sites exterior to existing urban areas.

2. There are a great number of dwellings, inhabited by the poorer classes, which are so defective as to sanitary construction, that demolition and complete reconstruction, is the only effective remedy.

3. To reconstruct these buildings, in a manner capable of containing the same number of inhabitants as they do now, will only perpetuate overcrowding. They must be rebuilt, in a superior style, for a higher class of occupiers. Consequently, the first step must be to provide accommodation for the people to be displaced. Otherwise the congestion will only be intensified, in some fresh place.

4. The provision of new streets and building-lots, is an essential preliminary to any serious improvement to the habitations of the working classes. The most favourable sites for commencing these operations are the suburbs of the Fortified Cities and the outskirts of the adjacent villages, such as Zabbar, Zeitun, and Curmi. To effect appreciable improvement, in a reasonable time, extensive and costly building operations will be required: so much so, that the Government alone, the principal landlord, can undertake them on a sufficient scale to ensure success. It is, moreover, most desirable that this be done, because, in any case, strict governmental control must be exercised as to design and construction of new quarters, otherwise existing defects will be reproduced.

5. To compel landlords to abandon or rebuild unsanitary dwellings, the use of which has been sanctioned by immemorial usage, is unjust and impolitic. Here again the Government must intervene, by the purchase of the objectionable dwellings.

6. The general arrangement of the existing villages is highly unsanitary. They have grown up on no definite plan. From the narrow and tortuous streets, vicoli branch off, which are even narrower and more irregular. These are the only means of access to the interior of densely built-over quarters, and they after terminate in blind ends. There is, therefore, an inadequate supply both of light and air. Police supervision and scavenging are also made difficult. To improve and open out these vicoli must be a feature of any project for improvement.

7. If new streets are laid out, casually, from time to time, as petitions are received, no serious improvement can be expected. It is, therefore, imperatively necessary that a definite plan of extension be adopted, and that the alignment of new streets should be determined and adhered to, whether their execution is undertaken by the Government, or left to private enterprise.

8. It is, therefore, recommended that a special Commission be appointed, to study the requirements of each village and suburb, taking evidence on the spot, and determining the alignment of new streets. These should be laid down on a plan, and in all future building operations, conformity to the established plan should be secured by law.

9. The extensions may then be undertaken, from time to time, as funds are available, or as a demand for building-sites arises.

10. In laying out new building sites, the main object to be kept in view is the prevention of future congestion. To this end, each lot must be provided with sufficient street-frontage, once and for all.

11. The plan which has, in some cases, been adopted of dividing the given area into square blocks, of considerable size, is not expedient. The inferior of the square lot is either wasted as building-sites, or access to buildings in the interior is difficult. The square form, moreover, is not suited to the undulating ground of Malta. One or more sides are certain to fall on steep and irregular ground, which can only be brought to grade by costly excavation or filling. The best plan, as a rule, will be to trace the streets not straight, but gently curved so as to follow the contour of the ground approximately parallel to each other, and at a distance apart of, say, one hundred feet. To save expense, the streets may be made alternately 30 feet wide, and 10 feet wide. Each lot will thus have one frontage to a main street and one on a back-alley, or vicolo, which will give access to the back premises for scavenging purposes.

The sketch attached, a plan of part of Zabbar, gives a good idea of the present congested conditions of some parts of the village, and will exemplify the suggestion as to the laying out of new sites, and of opening out existing vicoli. Proposed streets are coloured yellow, and the building lots are marked with red lines.

12. The usual practice in extensions to urban areas is as follows. The Municipality expropriates the land required for the street, paying for the land and making the streets at public expense, recouping itself by the rates and taxes levied on the new area.

13. But, in Malta, there are no Municipalities, and no rates or taxes. Consequently, if Government constructs new streets, local land holders receive the principal benefit from the expenditure of public funds.

14. Therefore, it will be expedient, not merely to expropriate the area required for the street, but to purchase also a strip of land, sufficient for building lots on either side.

When the street is constructed, the Government will recoup the expense of expropriation and construction by the increased value of the ground due to its conversion from arable to building land.

15. The Government, moreover, will have the opportunity of taking the lead in the construction of cheap but sanitary dwellings.

16. No public improvement, such as that under consideration, can be complete and permanent unless it is a financial as well as a social success. In designing model workmen's dwellings, care must be taken to bring the cost to an amount the interest on which can be paid by the classes for which they are intended. At first, probably, this will not exceed £ 1. per room per year. The labouring classes do not know what comfort means, and are not prepared to pay for it even if they could afford to do so. But in time a supply will create a demand. Such dwellings must therefore be planned with a strict economy. All other considerations, such as architectural effect, excepting always the strictest requirements of sanitation, must be subordinated to cost.

17. Space, in itself, is perhaps the most important factor in sanitation. It implies, as a consequence, light and air, and ranks with, or before, even pure water. A cesspool, a dung heap, or other collection of filth, is far less obnoxious in a large court or garden, where any emanations are diluted with pure air, than under a crowded dwelling.

18. London, though the largest capital, is one of the most healthy, and it is, on the average, the least densely populated. It contains densely populated areas. If a map of London were shaded so that the darkest parts indicate the densest population, it will be found that these areas possess the highest death rate also.

19. The recent cholera epidemic shows this clearly. A map of Valletta shews that the crowded and poor districts were the principal seats of disease. The population of Paris per square mile was, not long ago, about double that of London, and the death rate was about double also.

20. The above remarks, as to the importance of space, do not detract from the importance of water-supply and drainage. About the necessity of the former, no doubt can exist, and its improvement may be effected at once, and at moderate cost. As to drainage, the denser the population, the greater the necessity, and the more elaborate and costly must be the arrangement. Without space, however, the improvement desirable from either or both, will be reduced, even neutralized.

21. It may be objected that the recommendations made, involve an expenditure beyond the means of the country. It will not, therefore, be out of place to offer some remarks as to the financial aspect of the question.

22. The Government is the great landlord, and may be, therefore, expected to effect what is now expected of private landlords, the improvements of the dwellings of their tenancy. Like the private landowner, moreover, the Government, that is the people, may, with proper management, realize a return for the money invested in improvement.

23. The Government possesses a sum of money amounting to £ 50,000, derived from the sale of its property, and invested in British funds. It is not unreasonable to suggest that this fund, or some part thereof, derived from the sale of real property, should be reinvested in land. When land is expropriated for building purposes, any further sum required for construction of roads, may be raised on mortgage.

24. The Manderaggio is one of the principal places which, in our opinion, is unfit for habitation, which cannot be improved, except by reconstruction. At the least, it requires such a radical alteration, that expropriation of almost the whole property will be necessary.

Situated in the heart of Valletta, crowded with a poor population, it is liable, at any moment, to become a focus of disease, so long as it continues in its present condition.

We recommend, therefore, that the attention of Government be specially called to the paramount necessity for improving the Manderaggio.

The first step will be to provide new dwellings for the people, who now inhabit the Manderaggio. We suggest the neighbourhood of Blat-el-baida near Hamrun, as favourable for this purpose. It is not inconveniently far from the Harbour, which supports the larger number of the population, to be displaced.

25. In conclusion, we would observe that the provision of improved dwellings, with the relief of the congestion of population in the cities, is the most important of all sanitary improvements. Till this is done, the full advantage of other sanitary work, such as water-supply, drainage, scavenging, will never be realized.

26. We beg, therefore, to recommend that the Government be urged to take early steps towards the solution of this most important problem: the housing of the working classes. We are of opinion that, with proper financial arrangements, the improvements suggested, will produce an increase of revenue, proportionate to the capital invested.

27. The condition of the Manderaggio is so serious, and its complete improvement so extensive an operation, that we recommend that, as a tentative measure, the interior be opened up by the demolition of certain buildings on the side of the Marsamuscetto bastion, and opening two cross streets.

S. L. PISANI,  
J. COLAHAN,  
C. ARPA,  
OSBERT CHADWICK.

NOTE ON THE CONSTRUCTION  
OF IMPROVED LABOURERS' DWELLINGS.

1. It is essential that the improved dwelling shall be cheap, so that a rent, within the means of the persons for which it is intended, shall pay a reasonable interest of the capital invested. In their design, there must be no luxury, the strictest requirements of sanitation only must be provided.

2. It is almost impracticable to prevent overcrowding, even in improved dwellings, nor can the number of inhabitants be limited, in strict accordance with cubical contents, or floor area, of the dwelling. The sanitary authority cannot order a family to remove, on account of the birth of a child. It is moreover impossible also to find out how many do actually inhabit any dwellings.

3. Though the complete prevention of overcrowding, *within* dwellings, is impossible, it is quite possible to reduce the evil effect thereof to a minimum by preventing the *crowding together of the dwellings*, and by providing round each ample space, well lighted and ventilated. This point secured, crowding within the dwelling, becomes much less objectionable. The persons for whom the dwellings are required, pass the greater part of the day out of doors; in summer they will sleep out of the doors, if they can do so. If they crowd together at night, it does not so much matter provided that the room is dry, clean, and capable of being ventilated in the morning.

There is a strong predilection, on the part of the working classes, for the open air during the hours of labour. The carpenter and the shoemaker, work at their doors, or even in the street, when they can find shade. This tendency is highly hygienic, and deserves encouragement. To this end, ample court-yards should be provided. It will also be well to provide ample open verandas, which, whilst affording protection from sun and rain, will be, as far as ventilation is concerned, open air. In the veranda, the work of the day, cooking and washing &c., will be carried on. The room will only be used for sleeping, and for the safe-keeping of the possessions of the family. One room, with a veranda, is, on the whole preferable to two rooms, without a veranda.

4. To test the practicability of constructing a dwelling, satisfying the above conditions, at a remunerative cost, two preliminary plans have been prepared, shewing how one of the proposed building-lots, may be occupied by labourers' dwellings. Neither design is perfect or final. Indeed, each case will require careful consideration, and the project must, in every case, be adapted to the site and aspect of the building-lot.

5. In Plan No. 1 a building containing 27 rooms is shewn. It extends from road to vicolo, and there is a wide veranda in front of the rooms, and in front of that, again, a wide court-yard. The back wall of the building forms the boundary of the lot, and in the lease or deed of sale, an easement over the adjacent court, for the windows, must be provided; so that it can never be built over.

This plan can only be adopted, when the ground is tolerably level. But in Malta, this will seldom be the case. If the roads and vicoli are traced parallel to the contours of the land, and nearly horizontal, then it is pretty certain that the lot will be steep transversely. In this case, either a high and costly plinth must be raised at the lower end, or cellar dwellings will be used. Moreover, the advantage of the street frontage, for shops, is lost. Consequently, it will, as a rule, be better to place the blocks parallel to the roads.

6. Plan No. 2, shews an arrangement of this sort. Two adjacent blocks are occupied by 72 rooms. A central passage or veranda, gives access to the rooms, by means of balconies. The rooms are somewhat larger than those shewn in plan No. 1, but they are not each provided with a separate veranda.

7. It is estimated that, with strict economy, buildings, similar to those shewn in the sketches, may be constructed for £ 25 to £ 30 per room, so that they may be let at about £ 1 per room, per annum. Some of the rooms, those available for shops, will doubtless command higher rents. On the whole, therefore, the construction of such buildings will be a financial success; provided always that land can be obtained at a moderate price. In this respect, Plan No. 2 presents advantage: it may be adapted to rocky sites, which are, agriculturally, of little value.

8. Cheap building sites cannot be obtained within the Fortified Cities. Indeed, the future policy should be to convert the Cities into business centres, shops, stores, offices, and residences for the professional and commercial classes; housing the working classes, or rather wage-classes, in the suburbs and villages.

9. The Railway affords a number of excellent building sites, at convenient distances from the Capital. In the same way, also, an improvement of the public roads will have the effect of increasing the area available for habitation. The improvement of the principal roads, therefore, demands attention.

S. L. PISANI,  
J. COLAHAN,  
C. ARPA,  
OSBERT CHADWICK.

HIS HONOR  
THE LIEUTENANT GOVERNOR.

I have the honor to submit, for the consideration of His Excellency the Governor, that, at a meeting of the Cholera Committee held on the 16th inst., Dr. Roncali moved four Resolutions, which were amended and passed at the same meeting, and that, subsequently, a motion was agreed to, for the transmission of a copy of the Resolutions to the Government without delay.

In compliance with such motion, I beg to forward a copy of Dr. Roncali's Resolutions, showing the amendments introduced therein, together with an English translation of the Resolutions and amendments.

I beg to add that, with reference to the 2nd paragraph of clause 4 of the second Resolution, Dr. Mizzi moved that that paragraph be struck out and that the following be substituted for it:—" If such articles shall be found in the possession of persons who usually trade in the same kind of articles, the presumption is, saving proof to the contrary, that they are intended for sale." On a division, the amendment was lost, and the paragraph, as it stood, adopted.

18th June, 1888.

S. L. PISANI, M.D.  
*Chairman.*

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TRANSLATION OF DR. RONCALI'S RESOLUTIONS  
AS AMENDED.

I.

It is the opinion of the Committee:

1. That from the day on which the Head of the Government, having heard the opinion of the Board of Health, shall declare that there exists in this country, or is probably imminent, an infectious or contagious disease, whether epidemic or endemic, the exceptional powers hereinafter indicated, shall commence to take effect, and shall cease on the expiration of six months from the date of the said declaration, or before, if such declaration shall have been previously revoked;

2. The exceptional powers referred to in the foregoing number are, that the Head of the Government may make regulations concerning:

a) the time and mode of transport of corpses from places, their existence in which might be prejudicial to the public health;

b) their immediate interment;

c) medical, house-to-house, inspection;

d) isolation of places, in which any case of disease, giving rise to the exercise of such exceptional powers, has occurred;

e) the removal to hospital of persons who are houseless or who have no place permitting the treatment of patients, or when the place is occupied at the same time by more than one family;

f) prevention or limitation of the propagation of disease;

g) fumigation and disinfection of places, furniture, and clothes;

h) prohibition of the importation, sale, or exhibition for sale, and even the use of certain articles of food and drink, independently of the articles, in normal times, being fit for man.

3. With a view to seeing to the execution of the said regulations, or to carrying them out, if neglected, the Sanitary Authority shall have the power to enter houses and other buildings.

4. Even beyond the exceptional times referred to in No. 1, the Police may, in order to prevent injury to the health of the inmates or neighbours, order the whitewashing, disinfection, or purification of houses and other buildings, or of the things and clothes contained in them, upon a medical certificate as to the expediency of such measures.

5. Even beyond the exceptional times referred to in No. 1, any person affected by an infectious or contagious disease, shall not enter any vehicle or any boat, without informing the driver or the boatman of his state, being, in such case, bound to pay to the Sanitary Authority a sum of money corresponding to the cost and damages resulting from the disinfection of the vehicle or the boat, and from the loss of work. On this being done, the driver or the boatman shall not refuse to hire their vehicle or boat.

The driver or the boatman shall make a report to the Sanitary Authority to disinfect the vehicle or the boat, before allowing the use thereof, or before letting it to other persons.

6. In the like manner, the persons referred to in the foregoing number, are prohibited from appearing at any public place without the necessary precautions to prevent infection or contagion; and it is also prohibited to allow such sick persons who may be in custody or incapable of taking care of themselves, to appear in any public place; and it is also prohibited to remove, or transmit to others, or otherwise place or expose in any place accessible to the public, articles or things appertaining to such sick persons or which may have been in contact with them, or have suffered infection, without being previously purified or disinfected.

7. The certificate referred to in No. 4, and any other certificate as to the expediency for any measure concerning hygiene, may be given by any medical practitioner, even holding no public employment; and any medical practitioner, on knowing any circumstances in regard to which such certificates may be required, shall give certificates to the Police without delay.

## II.

It is also the opinion of the Committee:

1. That it be prohibited to sell articles of food or drink for the use of man, which are not of the nature, substance, composition, kind or quality demanded, unless the diversity thereof be stated on a ticket visible to the purchaser.

2. That it be prohibited to sell, and also to expose for sale, food or drinks unfit for the use of man.

3. That the Police, directly or through third parties, may purchase articles which the Police may suspect to be of the kind referred to in the foregoing numbers, in order to be able to initiate the necessary proceedings; and that any such proceedings shall be held to be of an urgent nature.

4. That the Police may inspect and search any place destined for the sale or deposit of goods, or in which anything intended for sale may be prepared, as well as any vehicle or boat connected with the sale or transport of food and drinks intended for sale; and the Police may also, by a warrant under the hand of a Magistrate, inspect and search houses, or any part thereof, wherein food or drinks, unfit for man and destined to be sold, may reasonably be suspected to be kept. Any thing found therein shall be seized. Such food and drinks may also be inspected and seized from itinerent vendors or other persons who, for the purpose of sale, shall remove them from one place to another, and even at the time of their importation.

The burden of proof that they are not intended for the food of man lies with him who alleges the fact.

5. That the Police may prohibit the sale of milk, or of any produce from milk, drawn from any animal which, from a medical certificate, may appear to be probably capable of causing prejudice to the health of anyone making use of the milk.

6. That the Police may, by regulations, prohibit the sale of certain articles out of certain places, and give directions for the cleanness of places, instruments, apparatuses, and utensils used in shops or depots, or by itinerent vendors.

7. That the Police may, by regulations, and for the purposes of the public health, give directions relating to the preservation, deposit, medical inspection, and sale of articles of food easily liable to corruption.

## III.

It is further the opinion of the Committee:

1. That the Police should watch over the cleanness, decency, security and good order of slaughter-houses, and that the Police may, for these purposes, make regulations.

Any place in which, by a licence from the Police, animals may be slaughtered, is held to be a slaughter-house.

In no place, for which no licence has been obtained, shall any animals be slaughtered; and the Police may, in the licence, insert any conditions deemed necessary.

2. That the Head of the Government may make regulations for the structure of slaughter-houses, for the apparatus and other matters and things, with which slaughter-houses should be furnished,—for the medical inspection of animals therein conveyed to be slaughtered, for

the destruction and seizure of animals, the flesh of which may have been declared by the Medical or Veterinary Officer in charge to be unfit for human food, and for the fees payable for the slaughter and the medical inspection of animals.

IV.

It is finally the opinion of the Committee :

That the provisions of Ordinance No. II of 1869, " To authorise the Head of the Government to prohibit the burial of corpses in certain places, and to make other provisions relating to such prohibition, should be extended to all persons dying in these islands.

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The foregoing Resolutions have been principally drawn from the following legislative Acts :

- 18 and 19 Victoria — Chap. 116.
- 29 and 30 Victoria — Chap. 90, sect. 19, 22, 23, 25, 27, 38 and 39.
- 38 and 39 Victoria — Chap. 63.
- 42 and 43 Victoria — Chap. 30.
- 26 and 27 Victoria — Chap. 117, sect. 2.
- 37 and 38 Victoria — Chap. 67 and 89.

*See also*

The Police Laws, Art. 110, Ordinance No. XIII of 1885.

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HIS HONOR

THE LIEUT. GOVERNOR.

I have the honor to submit that the subject of the constitution of the Sanitary Authority was one of the first subjects that engaged the attention of the Cholera Committee in reference to sanitary laws ; and after a protracted discussion at several meetings, a Sub-Committee was appointed for the purpose of considering, and reporting upon, the various proposals made by different Members. The Sub-Committee brought in their Report at the Meeting held on the 15th inst. and submitted a Resolution which was discussed, and, with some amendments, adopted at a subsequent meeting held on the 21st. In compliance with a motion of Dr. Caruana Gatto, unanimously agreed to by the Committee at the latter meeting, I beg to forward, for the consideration of His Excellency the Governor, a copy of the Resolution as amended, together with an English translation.

25th July 1888.

S. L. PISANI, M.D.

*Chairman Cholera Committee.*

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(*Translation*).

Resolved it is the opinion of this Committee :

1. That, in the execution of any law or regulation concerning sanitation, the Police, charged therewith, should be directed by such professional officers as, for this purpose, the Head of the Government may from time to time appoint.

2. That from any act implying a grant or refusal of permissions to do anything, whenever required by the law, and from any order as above given by the Police, in sanitary matters, it be lawful for any person interested to appeal to the undermentioned Sanitary Board.

3. That the Sanitary Board be composed of official and unofficial Members, the number of the latter, if possible, to prevail over that of the former, and to include, constantly, an Advocate, a Medical practitioner, an Engineer or an Architect, and a Proprietor, if possible, versed in subjects connected with public hygiene. Unofficial members to receive, for their labours, an honorarium to be established.

4. That the said Board, soon after its appointment, shall frame rules of procedure, including therein the right of the parties to attend before it through an Advocate or an Architect, and shall submit such rules to the Head of the Government for approval. They shall be binding, after being published in the Government Gazette.

5. That if the parties interested or any one of them be dissatisfied with any decision of the said Board, they may appeal, as a last resort, to the Second Hall of the Court of Appeal under the rules contained in the Laws of Organization and Civil Procedure.

6. That no one of the officers attached to the proposed Sanitary Office be permitted to practise his profession in the interest of private individuals, or otherwise to take part in any works or business falling within the sphere of the attributions of any of the said Officers.

7. That Inspectors of Nuisances and Sanitary Overseers should be men of some education, and that they should pursue an elementary course (as "uditori") of public hygiene and obtain from the Professor of Hygiene in the University a certificate (to be attested by the Director of Education) that they have attended his lectures. In order to obtain such situations, applicants should be made to undergo a slight examination on such subjects of practical hygiene as may concern the duties to be entrusted to them.

8. That a specially qualified Inspector be appointed to supervise markets and articles of food and drink.

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HIS HONOR  
THE LIEUTENANT GOVERNOR.

In compliance with a Resolution unanimously adopted by the Cholera Committee at a sitting held on the 16th inst., I have the honor to forward, for the consideration of His Excellency the Governor, the Report of the Sub-Committee on "Internal Preventive Measures against Cholera," in two Parts, as amended by the General Committee at the meetings of the 13th and 14th inst., and adopted at the meeting of the 16th inst.

18th June 1888.

S. L. PISANI, M.D.  
*Chairman.*

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### Cholera Commission.

#### REPORT OF SUB-COMMITTEE ON INTERNAL PREVENTIVE MEASURES AGAINST CHOLERA.

(As amended in Sitting No. 27 of 13th June 1888.)

##### PART I.

1. Attacks of cholera are generally preceded by premonitory symptoms, diarrhoea and gastric disturbance, which, at the commencement, are usually slight and painless. In this stage, however, simple medical treatment is most likely to be effective; later on, when the disease assumes an acute form, it is comparatively useless. The experience of all epidemics of cholera, shews that prompt treatment, in the premonitory stage, is a most effective means of reducing the fatality of the disease, and checking its spread. No pains, therefore, should be spared, to induce the people to report, and receive treatment for all cases of diarrhoea and similar gastric disturbance.

2. The evidence given by medical practitioners, as well as the relatively high proportion of deaths to attacks, in the recent as compared with previous epidemics, leave little doubt that there was much neglect and concealment of premonitory symptoms, during the recent one. In too many cases, the disease was only reported, in the advanced stage, when a fatal termination was nearly certain.

3. Reluctance to report premonitory symptoms is common in all countries, and may be traced to ignorance and fear. The sufferer does not realize, and shrinks from admitting that his slight and painless malady, is a forerunner of the dreaded cholera.

4. It is, therefore, of the utmost importance to impress upon the people the necessity of reporting and seeking treatment, for all cases of diarrhoea and similar gastric disturbance, which may be the premonitory symptoms of cholera. They should be urged and educated to do this, not only when an epidemic has pronounced itself, but at all times and all seasons. We have no means of knowing whether the germ of cholera is amongst us or not. Consequently, any one case may be the forerunner of an epidemic. Therefore, the only safe plan is to act, as though we were always in the presence of the enemy. The services of the Clergy, Religious Bodies, Confraternities, school masters, and the educated classes, generally, should be enlisted for the furtherance of this important service. To this end also, we recommend the establishment of voluntary and local Visiting Committees to visit the poor, ascertain their condition, advise and exhort them as to the management of their health, and bring to the notice of the proper authority any defective sanitary condition which they may observe. The assistance of these Committees will be of great service, not against cholera only, but against other diseases, which now produce an even greater mortality than cholera. These Committees should, therefore, be permanent, not called together hastily during an epidemic.

5. Much of the reluctance to report premonitory symptoms may be traced to repugnance to the removal of the patient to some distant cholera-hospital. It was observed that a large proportion of the patients removed, died almost immediately on arrival. This was not to be wondered at, as the patient was, in many cases, in an almost hopeless state, before medical assistance was applied for and before removal took place. Owing to ignorance, an idea became widely spread, that the death was due to foul play in the Lazaretto or cholera-hospital. Even the better informed, disliked the removal of the patient to, and his isolation in, a place, where they could not minister to his last wants.

6. Now, whatever views be held as to the importability of cholera by human intercourse, one thing is certain, that its occurrence in an epidemic form only takes place when the surroundings are suitable for its development. To sow the seed is not enough, the soil must be prepared. The removal of the cholera patient, leaves the neighbours who remain, exposed to the same conditions which produced the case, and, therefore, eminently liable to attack. It is, therefore, doubtful whether removal affords protection to the population at large. Compulsory removal has been shewn to conduce to concealment of premonitory symptoms, and is, therefore, a positive source of danger to the population. *Voluntary* removal in the earlier stages of the disease, certainly facilitates treatment. The patient should be removed, with his own consent, and when in a fit condition, rather to improve his chance of recovery, than as a protection to his neighbours.

7. Consequently, we recommend that the compulsory removal of patients be not insisted upon as an absolute rule at least. Let the patient remain with his family, till death or recovery takes place, provided always that adequate facilities for treatment exist. If the patient is willing, and the disease not too far advanced, he may be removed for treatment to some cholera-hospital which should be in, or near, the town or village and not at a distance. On the other hand, we do most strongly recommend the removal, as far as practicable, of the inhabitants of buildings and tenements adjacent to and similar in hygienic condition to that in which the case has occurred, *not to the Lazaretto*, but to sanatoria. We believe that, if proper arrangements be made, this removal may be effected, with the consent of the people, but compulsory power should be given to be used in case of necessity.

8. These sanatoria should be near to the place, where the out-break takes place. They must be easy of access, and by no means situated in a dreary or out-of-the-way spot. The inmates of these sanatoria must be well fed, and, in cases of destitution, at public expense. They should be under the supervision of a resident physician, who should be armed with considerable disciplinary power. They must not be subjected to any unnecessary restraint, or in any way isolated, or placed in quarantine. They should be allowed to go and come, to visit their friends and receive visits from them, and to pursue the ordinary avocations of life, subject only to the restrictions, necessary for sanitation and for the preservation of order. They should not be allowed to visit houses in which the disease has appeared, until their sanitary condition has been improved. Precautions in this direction will be taken, not at the sanatorium, but at the seat of the out-break. The able-bodied should be provided with useful work. The preparation and conservancy of the camp, will afford many opportunities for this. The sojourn in the sanatorium should be made as agreeable as possible. Meanwhile, the vacated houses should be cleaned, whitewashed, and generally improved in their sanitary condition.

9. For the sanatoria, no costly buildings are required. Wooden huts or tents of good construction, (not bell-tents) pitched in a clean open field, will answer every purpose. We believe that portable wooden huts may be imported, ready made, which could be put up when required, in a few hours. A good water-supply is, of course, essential, but a simple camp-latrine with dry-earth conservancy will answer as well as any more complicated arrangement. Military experience in India has amply proved this. If a case of cholera appears in one of the

sanatoria, it will be discovered in good time, and it may be removed for treatment. If, after a time, the soil shews signs of becoming filthsodden, the sanatorium may be removed.

10. A more strict supervision of the food supplies of Malta is required. The Sanitary Authority should have the power to prohibit the use of food that is corrupt, or that is deleterious, and to seize and destroy it, not merely during epidemics, but at all times, because, as before said, we do not know when the enemy is at our gates.

11. The sale of fish should be limited to fixed places, so as to facilitate inspection. Fish and perishable vegetables remaining unsold at night, should be seized and destroyed. During epidemics, there should be power to prohibit the sale of articles of food decidedly unwholesome in their nature.

12. The attention of Government should be called to the advisability of regulating the expenditure on public works, and to provide, as far as possible, steady employment for the wage-classes. The unemployed, and, therefore, ill-fed, are more prone to disease than the prosperous. We believe that the comparative scarcity of work which obtained last summer, owing to the completion of the water-works and the reduction of the number of hands employed in the Dockyard extension-works, contributed appreciably to the severity of the outbreak of cholera.

We do not suggest that the Government should undertake useless works, merely for the purpose of giving employment, but we do recommend a liberal expenditure on useful works, according to a definite and far-seeing plan, which may be carried out regularly and progressively, not waiting for emergent necessity.

S. L. PISANI, M.D.,  
J. COLAHAN, M.D.,  
OSBERT CHADWICK,  
C. ARPA,  
F. SCEBERRAS, M.D.

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## Cholera Commission.

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### REPORT OF SUB-COMMITTEE ON INTERNAL PREVENTIVE MEASURES AGAINST CHOLERA.

*(As amended in sitting No. 28, of 14th June 1888.)*

#### PART II.

1. The stretchers now in use for the removal of the sick are unsuited to the purpose. They are uncomfortable, and appear to have been designed for the removal of corpses, rather than for the transport of living beings. Proper stretchers should be provided, which could be placed on a light wheeled vehicle with springs. Such a vehicle has been imported, but, for some reason unknown to us, it has never been used. We recommend that this vehicle be tried, and, if found satisfactory, others should at once be made, to the same pattern. If it is not suited to local requirements, then the pattern should be modified.

2. The following routine should be adopted in the disinfection of cholera tainted buildings or dwellings evacuated on account of Cholera.

In the first place, the inhabitants must be summarily removed. After fumigation with sulphur, the walls, floors, and ceilings should be well washed with a solution of corrosive sublimate (2 per 1000) or carbolic acid (1 per 40). The solution may be applied to the ceiling by a portable force pump (Toxer's fire pump would answer admirably). Care should be taken to get the solution into the corners. The walls must then be thoroughly scraped from roof to floor, and the ceiling cleaned, taking care to remove all dust or deposit from corners. This done, the walls and ceiling should be whitewashed with freshly slaked lime. All wood-work should be washed with carbolic soap or, when practicable, with the standard disinfecting solution, and, if necessary, painted. The drains should then be examined. The outlet to the street-sewer should be plugged, and the drain filled with strong disinfecting solution to the level of the lowest closet or sink trap, and allowed to remain in this condition, for about two hours. In this manner, the water-tightness of the drain will be determined. If

it leaks, it must be taken up, and relaid. After retaining the disinfecting solution for two hours, the drain should be thoroughly flushed out, until no trace of deposit remains. If a drain is found to be leaking, it will be well to go on adding disinfecting solution during the period of testing, so that the ground, which may be assumed to be contaminated, from the leakage, may be disinfected as well as the pipes.

If the drain leads to a cesspool, then arrangements must be made for emptying the same. First, its contents should be disinfected by abundant application of the standard solution. Then, several bags of freshly slaked lime should be added, to precipitate the liquid contents. The whole should be left, for a few days. Then the liquid contents should be pumped out, disturbing the solid precipitate as little as possible: and lastly the solid matter should be removed, mixed with more quick-lime.

The water in the cistern should be examined. If it is found to be contaminated, the cistern should be emptied, cleaned, and, if necessary, repaired.

If, for any reason, the cleansing of the cistern be impracticable, further use of the contaminated water should be made impossible, by throwing in lime and sealing the cistern.

During these operations, a general inspection must be made, and any sanitary defects found to exist, should be rectified.

The operations just described must be carried out by competent persons, under professional supervision.

Furniture should also be disinfected, whenever practicable, by washing with corrosive sublimate. If space is available, it should be turned out and exposed to the sun and air.

Bedding, linen, carpets &c. that have been in contact with the patient, or which have been contaminated with his dejecta, must be burnt. Other small articles within the dwelling not directly contaminated, must be disinfected by heat, dry or moist, and then carefully washed.

The preventive measures described, should be applied, not merely to the tenement in which the case has occurred, but also to adjacent tenements in similar sanitary or other insanitary condition. To confer upon the Sanitary Authority liberal powers, to act in this direction, will be an important step toward the eradication of infectious diseases.

Disinfection must be effected immediately after removal, death or recovery; and until complete, the tenement or tenements evacuated must not be occupied.

During the progress of the case, the dejecta of the patient should be carefully disinfected.

3. When a case of Cholera terminates fatally, the body should be removed to a mortuary within twelve hours of death, or sooner, if the surrounding circumstances make it unsafe to retain the corpse so long.

At the last moment, before interment, the coffin should be filled with quick-lime, and, when lowered into the grave, it should be covered with the same, to a depth of, at least, two feet. The grave should be filled with vegetable soil, whenever this is available.

We take this opportunity of recommending, generally, that, whenever metallic or other impervious or indestructible coffins are used, the bottom should be perforated, to permit the escape of the fluid and gaseous products of decomposition, and that special precautions should be adopted to secure their disinfection, as fast as they are evolved.

We further recommend that inter-mural burials should be altogether prohibited at all times and places.

Corpses of persons, who have died of Cholera, should only be interred in private vaults, on condition that the owner of the vault engages that it shall not be re-opened without the consent of the Sanitary Authority.

Mortuary chamber should be provided in each Cemetery, furnished with all appliances necessary for the safe and hygienic preservation of corpses until the legal time of retention has elapsed. Guardians should be appointed to take charge of the corpses in the mortuary, to prevent premature interment, and to prevent unauthorised persons from visiting cholera corpses.

In the administration of the last Sacraments, we think it advisable that the officiating Priest, with the indispensable assistants alone, should be permitted to enter the dwelling of the patient. It has been found that, not unfrequently, a number of persons follow the procession of the Sacrament, and even penetrate into the sick room, and assemble round the bed of the sufferer.

4. We beg to make the following recommendations, as to special sanitary precautions to be adopted in case of an epidemic of cholera.

The streets should be watered with a disinfecting solution. Street gullies should be cleaned out daily, and any foul water in the traps should be carefully flushed out, and replaced

with a disinfecting solution. Urinals and public latrines should be cleaned and disinfected three times a day at least. We would take this opportunity of recording our opinion, that the use of marble slabs in urinals is objectionable, on account of their absorbent properties. Enamelled iron or glazed tiles should be substituted.

The Sanitary Authority should make more frequent visits to cook-shops, eating-houses and restaurants, including cafés and wine shops, especially to those frequented by the working classes, to see whether the cooking is properly performed, that the vessels are properly tinned and cleaned, and that there is no accumulation of stale or unwholesome food.

The water supply of these places should be carefully examined and condemned if found to be even suspicious.

5. It is of the utmost importance that all cases not only of Cholera or its analogues, but also of infective or contagious disease, should be promptly brought to the notice of the Sanitary Authority. It has been observed that a repugnance exists, on the part of experienced Medical Practitioners, to report cases to the Police Physicians. We have, therefore, reason to believe that many cases of the nature cited, are not reported as the law directs. Moreover, we would observe that the law, as regards the compulsory reporting of disease, requires amendment.

We also recommend that all cases of severe diarrhoea, enteritis, or other diseases akin to cholera, should be specially reported.

6. The existing sanitary law does not arm the Sanitary Authority with sufficient power to enter and do the various acts and things which we have recommended. We would, therefore, call the attention of those upon whom the revision of the law devolves, to the paramount necessity for providing ample power to take summary action in such cases. Without the means of taking vigorous action, it is impossible to stamp out an epidemic of Cholera with promptitude.

The points for consideration, may be summarised as follows :

1.) All cases of suspicious, infectious, or contagious disease, are to be reported, whether there is a fatal or favorable termination.

2.) The Government should have the power to specify, from time to time, the nature of the diseases to be reported compulsorily.

3.) The Government to have special powers of action in case of epidemics as follows :

a) Right of entry.

b) Power to evict.

c) Power to clean and disinfect.

d) Method of assessing damages caused by disinfection, and power to pay the same.

e) Power to take summary action as to food supplies.

f) Power to make special regulations as to interments.

7. We believe that, during an epidemic, it will be prudent to discourage anything tending to cause the assembly of large numbers of people in close or ill-ventilated places.

8. During an epidemic, a sufficient number of trustworthy Police Constables should be placed under the sole direction of the Sanitary Authority. Their ordinary police duties should be performed by special constables temporarily enlisted.

9. The storage of rags, bones, hair, horns, and putrescible matter generally, within towns, villages, and inhabited centres, should be, at all times, prohibited. During epidemics, traffic in these articles should be entirely prohibited.

10. Accumulations of putrescible matter, seaweed, and the like, in bays and harbours, should, at all times, be prevented by prompt removal.

11. In order to prevent the possible importation of infectious or contagious diseases, all linen, before being landed from vessels arriving from suspected places, should be disinfected on board.

S. L. PISANI, M.D.,  
J. COLAHAN, M.D.,  
C. ARPA,  
OSBERT CHADWICK.

HIS HONOR

THE LIEUTENANT GOVERNOR.

At a meeting of the Cholera Committee, held on the 24th instant, the accompanying Report of the Sub-Committee, on the subject of scavenging, as amended by the Committee at the meetings of the 17th and 24th instant, was unanimously adopted; and it was agreed that the Report be submitted by the President for the consideration of His Excellency the Governor.

29th February 1888.

S. L. PISANI, M.D.  
*President Cholera Committee.*

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### Cholera Commission.

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#### REPORT OF THE SUB-COMMITTEE ON THE SUBJECT OF SCAVENGING.

The Sub-Committee, having heard the evidence of the Superintendent of Police and of the Medical Sanitary Inspector, with regard to scavenging and removal of refuse, beg to report thereon as follows:

1. The system of scavenging, introduced since 1st December 1887, whereby the Superintendent of Police has complete control of the scavenging operations, and is solely responsible for their proper execution, is right in principle, and appears to work well in practice and to be economical.

2. The right to deposit house-refuse in streets, should be legalised, under regulations to be made by the Head of the Government, as to time and manner of deposit and removal.

3. That, under the present system of scavenging, human excreta might, in many cases, be removed daily by the public scavengers. The introduction of a system of hand-removal of excreta, if properly organized as to details, will, in the case of many village houses, be a great improvement.

It is, therefore, desirable that a system of hand-removal be introduced experimentally in one of the minor villages, so that the practical details of the system may be worked out practically.

The introduction of hand-removal should be, as far as possible, voluntary. House-holders might be induced to adopt this system as an alternative to the remodelling of cesspools, which, in certain cases, may according to law be insisted on. Care should be taken to avoid any expense to the owner or occupier of the tenement for such removal. It must, however, be remembered, that hand-removal cannot be used in all cases, nor does it lessen the expediency of drainage.

4. Steps should be taken to establish depots near villages, — but at a safe distance from dwellings or roads, — where house-holders may, under supervision, store refuse for manure.

5. The scavenging arrangements now in force, with the proposed right to deposit in streets, will afford complete facility for the removal of refuse from premises. In the Cities, therefore, accumulation in and about houses should be strictly prohibited.

Village dwellings should be carefully investigated by the Sanitary Authority and classified under two heads:—

(a) Dwellings having land or gardens attached, which may be called “sub-urban” dwellings;

(b) Dwellings compactly built together, with small or no open spaces, which may be called “urban.”

In sub-urban premises, accumulation of refuse for manure may be permitted under restriction as to the position and manner of storage, principally with regard to the neighbourhood of dwellings.

In urban dwellings, accumulations should be strictly prohibited.

6. The Inspector of Police should be instructed to enforce the law as regards accumulations in urban dwellings by means of the Constables under his command.

Inspectors of Nuisances should be instructed to inspect and report any remissness or neglect on the part of the Police.

7. That the Police be instructed to pay special attention to the scavenging of "vicoli" and all public spaces; and that steps be taken to improve the road surfaces of the same, so as to prevent lodgement of water.

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HIS HONOR  
THE LIEUT. GOVERNOR.

In compliance with a Resolution passed unanimously at a meeting of the Cholera Committee held on the 13th instant, I have the honor to forward, for the consideration of His Excellency the Governor, the following Reports adopted by the Committee, viz : —

1. Report on Drainage ;
2. Report on Markets ;
3. Report on the Lazaretto .

16th June 1888.

S. L. PISANI, M.D.  
*Chairman*

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### **Cholera Commission.**

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#### REPORT OF THE SUB-COMMITTEE ON DRAINAGE.

*(As amended by the General Committee at Sitings Nos. 18 and 20.)*

The Sub-Committee have examined the plans of the Drainage of the Fortified Cities, which were explained by Professor Schinas. They examined the Clerk of Works, Mr. Muscat, whose evidence is appended. They also inspected the subways of Valletta, the Pumping-station at French Creek, and the drainage system of the Three Cities.

Having considered the evidence and information thus obtained, they beg to report thereon as follows :

1. The sub-ways of Valletta were generally fairly free from sewer-gas. In one part near the Marina, a great deal of sewer gas was noticed. It appeared that the source of this gas was the old and unremodelled sewers of the Marina, which are in connection with the subway, and which are certainly full of filth.

2. At the points where there are inlets from street gulleys, the foul water which here enters the storm-water channel, causes a decided nuisance.

This is especially the case where the gully is near a cab-stand.

3. The street-sewers were found to be practically clean ; in some cases, there was a slight deposit, apparently, of fat. The gradients are sufficient to give a rapid flow, and the flushing apparatus worked efficiently.

In one case, a street-sewer contained a hard deposit, which proved to be mortar. Mr. Muscat observed that deposits of mortar are common, and that they are derived from new and improperly constructed house-drains. This fact has an important bearing on the question of house-drainage, and will be referred to, when discussing that subject.

4. The condition of the house-drains was less satisfactory. In almost every instance, there was strong evidence of stagnation within the house-drain. We satisfied ourselves of this, in several instances, by pouring water down the drain, and observing the putrid sewage, which came out with the first flow. Many buckets of water were poured down the closet before the deposit was completely removed from the house-drain.

The sewage flow, seen in the street-sewers, though in rapid motion, was black and putrid, even close to the heads. Consequently, there must be stagnation in the house-drains.

5. We are of opinion that, on the whole, the system of street-drainage and intercepting sewers is satisfactory. By proper management, all sewage which reaches the street sewers, should be removed to the sea in a few hours, before putrefaction can set in.

6. The house-drains, on the other hand, though correct in general principle, are certainly defective in operation, and, probably, in many instances in construction or workmanship also.

7. We attribute almost the whole of the complaints which are made, as to the drainage system, to defective working of the house-drains. If the sewage found its way through the house-drain, as completely and promptly as it passes through the street sewers, there would be no putrefaction, and no evolution of sewer-gas, and, consequently, little or no effluvia from the ventilators.

8. The defective action of the house-drainage may be attributed to two principal causes :

- (1) Defective construction, principally as regards workmanship ;
- (2) Improper usage on the part of the occupiers.

People persist in throwing slop water into the street gullies, instead of pouring them down the latrine or sink, and thereby flushing the drain. They are ignorant as to the proper use of drains, and persist in thrusting improper substances down the sinks, and there is no sufficient organisation for instructing them as to the use of drains, or for assisting them to remedy minor defects. Consequently, when anything goes wrong, they endeavour to conceal it.

9. Before examining in detail the question of house-drainage and street-sewers, we will discuss the system of administration, which is in force, and then proceed to make suggestions for its amendment. At the outset, we will state our opinion that most of the evils described, may be traced to the radically faulty and complicated system of administration which has hitherto obtained.

10. The general system of administration is as follows :

The Drainage Commission administers the street drainage of the Fortified Cities. This Commission is composed of

- The Commanding Royal Engineer,
- The Auditor General,
- The Collector of Customs,

Professor Schinas, the Resident Engineer to Water-works and Consulting Engineer to Drainage.

The Executive, under the Commission, is vested in the Clerk of Works (Mr. Muscat). The Commission have the professional services of the Resident Engineer Water-works (Prof. Schinas, C.E.) as Consulting Engineer; he has, however, no direct executive power and only gives advice as a Member of the Commission.

11. The functions of the Drainage Commission are limited to the street-sewers in the Fortified Cities. They have no authority over the construction or maintenance of house-drains. In Valletta and Floriana, the storm-water-channels, which here form the sub-ways giving access to the sewers, are under their charge.

The storm-water-channels in the Three Cities, where there are no sub-ways, are under the Public Works Department (we suppose). This is the case with the drainage, such as it is, of villages.

12. The House-drainage is supervised by the Police. Attached to the Police, for this purpose, are two Periti and three Foremen. These persons design house-drainage and supervise its construction, which is, however, performed by contractors employed by the householder.

They are temporarily employed on the roll of the Works Department, and are entitled to private practice.

The Resident Engineer Water Works (Prof. Schinas, C.E.) is Consulting Engineer to the Sanitary Department of the Police; but here, again, his functions are consultative only. The initiative comes from the Police.

13. The routine, by which house-drainage is effected, is as follows :

The Sanitary Medical Inspector, or the Inspectors of Nuisances, inform the Superintendent of Police, that a house is not drained as the law directs. The case is referred to the Consulting Engineer (Prof. Schinas, C.E.) who causes instructions to be prepared, as to the manner in which the drainage is to be effected.

The Superintendent of Police then orders the landlord to drain his house, in accordance with the instruction. Very frequently, the landlord refuses to do so; after a time he is summoned before a Magistrate, who, in many cases, unavoidably gives the defendant time to comply

with the law. He remains recalcitrant, however, and is again summoned, and so on, till at length the work is commenced. The landlord is left to carry out the work as best he can, under the supervision of the said Periti, or of the Foremen.

14. The working of the house-drainage is wholly under the Sanitary Medical Inspector, through Inspectors of Nuisances, men without professional knowledge. If they find a drain stopped or defective, they report the fact to the Police; and the landlord is ordered to remove the stoppages or remedy the defect. They have neither the means, the power, nor the knowledge, which would enable them to give advice, in such cases. When the Clerk of Works of the drainage observes, a stoppage of the syphon in the sub-way, he removes it, and may report the matter to the Police, who may or may not take legal proceedings.

15. With this division of responsibility and cumbrous system of circumlocution, we are not surprised to find that the drainage system works indifferently; indeed, it would be impossible to carry on a well-established work, in this manner, far less to introduce a new system, which is, in many cases, neither understood nor appreciated.

16. It is certain that, in many cases, existing house-drains will require alteration. In the majority of cases, the necessary improvement may be trifling. In others, a radical change may be required.

17. We are of opinion that all alterations of already remodelled house-drains, which are necessary to satisfy the strict requirements of sanitation, should be made at the public expense. Landlords have already incurred much expence in remodelling drainage, and the Government undertook the direction and supervision of the work. They cannot, therefore, be held responsible for defects either of design or construction.

18. We beg to make the following remarks as to details of house-drainage:

(a) In the Three Cities, the disconnection of the house-drain, from the street sewer, is, in some cases, incomplete; there is a syphon, but no ventilating inlet. We learned that these ventilating inlets had been closed, by order of the Police, because of the stenches proceeding from them. We are of opinion that this was a mistake. If gases be evolved by the matter contained in the trap, it is better that they should come out in the street, than in the dwelling. To close the inlet is merely to hide the defect and render it more dangerous. We therefore recommended that these inlets be restored. If, in future, smells arise from these inlets, the Sanitary Inspectors will be in a position to remove the accumulation, which produces the effluvia, by means of flushing.

In the Three Cities, the syphons of house-drains should be made readily accessible, and regularly inspected and cleansed by Sanitary Inspectors. The condition of the syphon will give timely indication of stagnation in the house-drains.

(b) In Valletta, where there are sub-ways, all syphons should be kept clear of deposit by the flushers. To facilitate this, taps supplying Tal-armier water should be provided in the subways.

(c) If any case of stoppage is observed, the house-drains in question should be immediately inspected, and the stoppage removed.

(d) We are of opinion that the form of syphon or trap, now in general use, is defective. The cleansing eye forms a lodgement for floating filth. This may be remedied by the insertion of a loose stone stopper properly cut and fitted. In future, they should be so designed as to prevent any possibility of stagnation or deposit.

19. The question of ventilators has already been discussed in a report by a Committee specially appointed for the purpose. We concur with the general sense of this report, and will therefore confine ourselves to stating that, far from recommending the abolition of the ventilators, we consider that their number should be increased so as to prevent accumulation of sewer-gas. We have seen that there is not a constant outflow from the sewer ventilators. Sometimes there is an indraft. The more numerous the ventilators, the less the probability of an accumulation of sewer-gas and the greater its dilution within the pipes. It is quite possible that, in some cases, the nuisances that have been complained of, are due to a sudden outrush of gas, which, owing to some atmospheric or other condition, has been accumulating, for some time. It is, therefore, well to provide additional ventilators, at points other than the heads of sewers.

The true remedy is, however, complete and frequent flushing of the whole system, including more particularly the house-drains. If this be effected, the rest of the system may be easily maintained free from deposit and from sewer-gas.

20. The question of the position of the ventilating opening, whether it should be elevated, or on the ground, is one of comparative unimportance. If the opening is elevated, any stench proceeding from it will be, possibly, somewhat less objectionable than if it proceeded from an opening on the ground level. Certainly it will be less easily perceived. This is really a

disadvantage, for an evolution of sewer-gas must proceed from stagnation. If the opening were on the ground level, the evolution of gas would be evident, and the defect giving rise to it might at once be remedied. Not so, however, with the elevated ventilator. If a complaint is received, the first thing that happens is a dispute as to the fact.

In future drainage system, we think that it will be well to try the effect of having very numerous ventilating openings on the ground level.

21. The sub-ways of Valletta require additional ventilating openings. It is to be remembered that the ventilating inlet of the house-drain is in the sub-way. If sewer gas accumulates in the sub-way, it may escape by the open-topped soil pipe of the house-drains, and cause a nuisance. As men have constantly to work in the sub-way, it is desirable that the air should be as pure as possible, both as regards their health, and as to the efficient performance of their duties. This may be effected by grated openings into the streets.

The attention of the Commission is particularly directed to this defect, which is an imminent source of danger as the gases from it escape freely into the subways.

22. No time should be lost in reforming the drainage of the Marina, the deposit of sewage in which gives off sewer gas into the sub-ways.

23. Street-gullies should be connected to the sewers, and not merely to the sub-way or storm-water channel. It will be easy to arrange the connection so that, in heavy rain, the flood-water will escape into the sub-way.

It is nearly impossible to prevent people from throwing slop into them. In many cases, the urine from cabstands and the washings of the street, make the effluent from the street-gully, as offensive as sewage. All cabstands should be paved with impervious materials. Indeed, streets also should be similarly constructed.

24. In most cases we find that the street-gullies are in bad condition, the catch-pit or trap being full of filth. The Superintendent of Police should be instructed to see that the scavengers cleanse these catch-pits, and replace, when necessary, the water, in the trap.

25. We consider that the system of pumping now in use at the Pumping Station, is open to objection. The sewage from the low-level sewer accumulates in a tank during 24 hours, and is pumped out in two hours. It is more than probable that this sudden increase in the volume of sewage in the out-fall sewer is the cause of nuisances from the ventilating shafts, which are not sufficiently numerous. We, therefore, recommend that a more constant rate of pumping be tried. We believe that this will prove economical as to coal-consumption.

26. In the three Cities, the sewers are flushed by hand, an expensive process, which is there likely to be neglected. We recommend that steps be taken to provide all the sewer-heads in the three Cities with tilting flush-tanks, as in Valletta, where we have seen that they act admirably. A supply of water for these tanks must be provided. The best way of doing this, would be to extend the "tal Armier" system for this and other municipal purposes.

If, however, the present "tal Armier" supply is not sufficient for this purpose, then the pipes might be laid, and in the meantime sea-water pumped from the pumping-station at French Creek.

27. The rain-water drains of the Three Cities are in a deplorable condition. We recommend that their charge be entrusted to the Engineer of the Drainage, and that they be thoroughly examined, cleansed, and repaired. Though they no longer receive actual sewage, a great deal of foul and putrescible matter finds its way into them.

It was ascertained that the storm-water drain in Str. San Michele contained a large amount of sewage, and it is probable that others also are in the same condition.

28. We recommend that projects be prepared for drainage of villages; whether hand-removal is practicable or not, drainage is essential to Sanitation. We believe that, with the experience obtained in the Fortified Cities, many defects which we have noticed, may be avoided, and that the cost of the works may be reduced within reasonable bounds.

As exact plans of the villages are necessary for the preparation of these projects, indeed for all public improvements, we recommend that the requisite survey operations be put in hand.

29. In conclusion, we would observe that, on the whole, we were favourably impressed with the drainage system of the Fortified Cities. It has been our duty to point out many defects. In justice to the Officers in charge of these works, we must record our opinion, that the defects were due, not to neglect on their part, but to the vicious administrative system which hitherto impeded them in every way.

30. We would suggest that means be provided for removing refuse &c. from ships in the harbours.

31. The intercepting sewer should be flushed twice a day at least from St. Elmo, if practicable constantly.

## Cholera Commission.

### REPORT OF THE SUB-COMMITTEE ON MARKETS.

VALLETTA.

(As amended in Sitting No. 21 of 12th May 1888.)

1. The existing wholesale vegetable and fruit market is objectionable, both as regards site and construction. It should be removed to a more spacious site, outside the Fortifications. Facility should be given for the direct sale of provisions and produce, from the carts of the peasants.

As Government is taking steps in this important matter, we will not enter into further details.

2. The Valletta retail market is most defective.

a) Its position is bad, the site is too confined;

b) It is far too small;

c) The ventilation is defective;

d) The floor is bad, the stone pavement is rough and flat, and cannot be properly cleaned.

e) The stalls are badly arranged. There are too many of them, and the back-to-back arrangement prevents proper ventilation. Many stalls are really shops, merchandise is permanently stored in them, and they are, in many cases, so full of boxes and packages that they cannot be cleaned out properly. The passages hardly afford the space for turning out the contents so that the floor may be properly washed. The floor of the stalls, being level with that of the passages, when the latter are washed, the stalls are inundated, and goods damaged, which causes great opposition to thorough and complete washing.

f) There is no classification of wares. Fish, meat, poultry, bread, and vegetables, are mixed indiscriminately. Consequently, the unavoidable effluvia from some articles, such as fish or cheese, damage the others.

g) There is no proper provision for washing fish and vegetables.

h) There is no space for itinerent vendors of eggs &c. who now crowd the passages.

3. As it is not practicable to remove the Valletta market, and reconstruct it elsewhere, we will proceed to discuss the details of the measures to be adopted for its improvement and for relieving the overcrowding.

4. The best plan will be to diminish the number of stalls, and rearrange them completely. But, as the present market is too small for the wants of the place, branch markets must be provided elsewhere.

We would suggest as sites for the purpose the space at the end of Str. Mercanti, near St. Elmo, the Marsamuscetto bastion, and the ditch near the water-works stores.

These branch-markets need not be costly monumental structures. A good asphalt or concrete floor, and a simple galvanised roof with a good water supply, is all that is required. Indeed, strictly speaking, a good pavement will suffice, leaving dealers to put up temporary stalls, tables or kiosks under supervision.

The present market may be enlarged to a slight extent, by constructing a floor over the area or court which surrounds the building, and covering it with a veranda. The archways might be opened as stalls, the vendors being outside, and the purchasers inside the building. These outside stalls might be used for fish and vegetables.

5. More ventilation should be provided by removing glass wherever possible and substituting louvers. The central part might be opened to the sky.

6. The floor should be taken up, and replaced with asphalt. This should be carefully laid, with proper slopes, so that the water may run off freely.

7. After re-laying the floor, the stalls should be re-arranged. The present cage-like enclosures should be done away with, and replaced by open stalls with a counter in front, and a shelf behind. The stalls should be classified, so many for meat, so many for vegetables and fruit; and each class arranged specially for its proper purpose. The butchers stalls would be provided with marble slabs for the meat, and hooks for hanging it. The vegetable stalls might be furnished with shelves, in steps, for the baskets. The accumulation of large boxes or counters should be forbidden. In short, strict rules should be enforced to prevent the market from again becoming an aggregation of shops, as it is now.

A few specially arranged stalls might be provided for bread and groceries, but the fewer of these the better. The object of a market is to provide space for the sale of perishable articles, not bread and groceries.

No articles should be placed on the floor. The stalls should be provided with cast-iron or wooden floor-gratings, raised about a foot from the floor, so that the whole may be thoroughly washed out without damaging goods, or making the standing-places of the dealers, damp and uncomfortable.

8. It is worthy of consideration whether a refrigerator might be established in the basement, for keeping meat and vegetables, and for supplying ice. We advise it, but better elsewhere.

9. We recommend that the management of the market be removed from the jurisdiction of the Police and entrusted to competent specialist, the old catapan, as Inspector of markets. This officer might be a member of the sanitary commission or other sanitary body. He would be entrusted with the supervision of all food supplies, whether sold in markets or in shops; including the examination of imported supplies, wine, spirits, or fruit. We suspect that much bad wine and spirits now enter Malta from abroad. Now, to prevent the introduction of unwholesome foreign produce, by strict examination on landing, would be the means of encouraging home industries, gardening, wine making, brewing, and distilling. All foreign produce should, therefore, be inspected on landing. If found to be unwholesome, it should be confiscated and destroyed. Slaughter houses, debarkation of cattle, and cattle markets should be entrusted to a competent veterinary surgeon. The Chief Inspector should have under his orders Sub-Inspectors in charge of markets, having the power of police constables for the preservation of order within the market.

10. Near the fish and vegetable stalls, large marble basins should be provided for washing them. More facility should be given for the preparation of vegetables before exposure for sale. Much mess is caused by purchasers tearing off and throwing away the outer damaged leaves of lettuces &c. Dealers should be prohibited from exposing food unless it is properly dressed and prepared ready for consumption. The market is not a proper place for making sausages for example.

S. L. PISANI,  
J. COLAHAN,  
C. ARPA,  
OSBERT CHADWICK.

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## Cholera Commission.

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### REPORT OF THE SUB-COMMITTEE ON THE LAZARETTO.

(As amended by the General Committee at meeting No. 17 of 14th March 1888.)

The following suggestions are based on the supposition that the Quarantine Establishment for passengers be not removed as recommended by the Committee. In general principle they are applicable to a new Establishment also.

1. A supply of aqueduct water should be laid on, under pressure to all the Quarters for drinking and cooking purposes. The tank-supply should be applied solely to closet flushing and general cleansing.

2. The drainage of the whole building requires to be completely remodelled. The drains are mere channels cut in the rock, and require an inordinate expenditure of water to flush them properly if this can be done at all.

3. Pipe-drains should be substituted, and it will be well to provide an intercepting-drain carrying the effluent away from the harbour front of the building until better provided for. At the out-fall, a catch pit should be provided to retain large floating objects, and the sewage may be precipitated with lime so as to avoid, as far as possible, contamination of the water near the building.

4. The arrangements for flushing the water-closets are throughout defective; the down-pipes are too small. Each closet should be provided with a wash-preventer flush tank.

5. The woodwork of all closets should be removed, and those intended for the poorer classes should be replaced by a simple slab of marble or concrete. All inclosed spaces should be avoided.

6. Water closets should in every case be completely isolated from the apartments.
7. The large tank in rear of the premises will afford an abundant supply of water for flushing, but to prevent any negligence a good pump (preferably worked by a mule) should be provided.
8. All ventilating pipes should be carried up well above the top of the buildings. Properly flushed urinals are required.
9. The corridor outside the rooms of the Palazzo requires a veranda. Indeed, as the building has a south-westerly aspect, all the dwellings should be provided with ample verandas.
10. The court-yards are badly paved and cannot be properly cleaned. They should be relaid with some smooth and non-absorbent substance, and well sloped.
11. The quarters used for coal-heavers require improvement. Greater protection against the sun is needed.
12. We consider that it is unadvisable to have the hospital for local infectious diseases in the Lazaretto. The position is bad as regards accessibility. It is improper to place infectious cases close to passengers undergoing quarantine, the more so as the construction of the building prohibits complete isolation. The buildings are deficient in all the sanitary requirements of modern hospital.
13. Local infectious cases should be treated in a properly constructed hospital at some easily accessible but well isolated spot inland.
14. Arrangements should be made for messing of the passengers, at a regular tariff which should include a charge for the use of extra furniture, &c., when required—which tariff should be posted up in each section, in three languages, and copies sent to the British Consuls and Steam Ship Agencies in foreign ports.
15. The charge of the Lazaretto should be transferred from the Port Department to the Sanitary Authority.
16. During Quarantine, an experienced physician should reside in the Quarantine Establishment and take complete executive charge of it.

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HIS HONOR  
THE LIEUT. GOVERNOR.

I have the honor to submit, for the information of His Excellency the Governor, that a Sub-Committee, appointed by the Cholera Committee, and consisting of the Hon. Dr. Sceberras, Dr. Colohan, Mr. Chadwick, Mr. Arpa, and myself, drew up a Report or Summary of conclusions respecting the matters referred to the Committee, exclusively of sanitary laws; and the Report was brought in by Mr. Chadwick at the meeting held on the 28th ultimo. The Report was afterwards considered, amended, and adopted by the Committee.

A copy of the Report, as amended, together with the Minutes of proceedings referring thereto, is forwarded herewith, in compliance with a resolution adopted by the Committee.

I beg to add that, at a meeting held on the 11th instant, the following resolution, proposed by Mr. Arpa, and seconded by Dr. Roncali, was unanimously agreed to, viz.: "That the Government be requested to cause all the Reports of the Committee transmitted to the Government, to be published in English and Italian, for the information of the public, and in justification of the Members who have been accused of having done very little, if anything, in regard to the matters referred to them."

20th August 1888.

S. L. PISANI, M.D.  
*Chairman.*

## SUMMARY OF CONCLUSIONS ARRIVED AT BY THE CHOLERA COMMITTEE.

1. The Committee, after a careful examination of medical and lay witnesses, was unable to ascertain the origin of the out-break of Cholera, or the date of the introduction of the disease.

The majority of the Members were of opinion that the disease was introduced from Sicily, and, most probably, during the suspension of quarantine which took place between the 18th May and 4th July, on the official assurance of the local authorities in Sicily, that the disease had ceased in that country.

2. During the investigation as to the origin of the disease, it became apparent that the means of ascertaining the existence of cholera in foreign countries are, in some instances, necessarily defective, inasmuch as the Government of Malta depends for information on Her Majesty's Consuls, who again base their reports not only on the official statements of the local authorities who may ignore the existence of the disease, but also on private enquiries, which may not always be reliable.

3. One witness attempted to trace the introduction of the disease to a case of diarrhæa, which occurred on 7th July in the person of a ship-chandler who dined on board an Italian steamer, shortly after the beforementioned suspension of quarantine, and to connect therewith certain other similar cases. But these cases all terminated favorably, and, on a close examination of the persons concerned, no positive connection between these cases and the subsequent out-break could be proved.

### SPREAD OF THE DISEASE.

4. The Committee have not succeeded in determining the laws governing the spread of the disease. No connection between one group of cases and another was traced, whether as to water supply, drainage, general sanitation, or even human intercourse.

The Committee could not trace out the mode in which the disease was spread over the island.

5. The following is a general summary of the facts ascertained in the recent epidemic.

The disease was almost wholly confined to the poorer classes of the native population. There were only very few cases amongst the middle classes. The military and navy escaped with three cases. Yet, these sections of the community enjoyed no special isolation.

Not one of the medical men, nurses, priests, and others who were in daily intercourse with the afflicted, died of the disease. Gozo escaped without a single case among the resident population. A refugee from Malta was attacked shortly after arrival, but the disease did not spread. Naxaro, Gargur, Dingli, Chircop, Rabato (one case) also escaped: yet, there was no isolation or suspension of intercourse. Indeed, some of these places were frequented by refugees from afflicted spots.

6. Whenever an out-break took place, sanitary defects were patent. Zabbar and Zeitun, where the epidemic raged with a severity even greater than in 1865, were dependent for their water supply on the rain-fall collected from roofs and from the surfaces of streets. There is no drainage or other organized system of filth-removal. The houses are ill-built and over-crowded; cesspools and collections of filth abound. In those villages, the conditions are obviously favourable to the development and spread of disease. But, on the other hand, the conditions obtaining in the villages which escaped, are very little better.

7. The consideration of these facts leads to the conclusion, that, if the disease is established amongst a community whose condition is insanitary, an epidemic will be likely to ensue. If the conditions are sanitary, the disease will, in all probability, not spread. As the manner in which the disease is transported, is generally admitted to be manifold, it is to sanitation that we must look for protection, to good water, and good food, and good air. The last condition involves the relief of over-crowding and the removal of filth by drainage and scavenging.

### PREVENTIVE MEASURES.

8. Protective measures, directed against the introduction of Cholera from abroad, present at the very outset a grave difficulty, namely: the want of prompt and reliable information as to the existence of the disease in foreign countries. It is, therefore, difficult to determine the moment for applying quarantine or sfratto.

9. Again, where quarantine is established, it is doubtful whether the degree of isolation practicable, affords real protection, as the Lazaretto is situated in close proximity to populous centres. Moreover, the sanitary condition of the Lazaretto is far from perfect. A case of Cholera occurring in it, would, especially if it were over-crowded, be a source of great danger.

10. Sfratto, or absolute cessation of intercourse, though apparently more directly detrimental to Commerce than quarantine, affords the only real protection. Therefore, whenever Cholera appears in neighbouring countries, sfratto should be declared against them, and against those which neglect to take sufficient protective measures.

11. Quarantine must, however, in some cases, be adopted, if only with a view of preventing the interruption of Commerce, by the declaration of quarantine against Malta by other countries. As quarantine must be enforced, it is desirable that it should be carried out in the most perfect manner possible.

12. To this end, it is recommended that the quarantine establishment for passengers disembarking, be removed to a distant part of the island. If this be impracticable, then the existing Lazaretto should be improved as to its sanitary condition. Steps should be taken to prevent over-crowding, and the system of provisioning and housing the inmates should be made as perfect as possible.

13. In conclusion, we would observe that, it is by improved internal sanitation, together with external preventive measures, that freedom from Cholera is to be attained.

Good sanitation, moreover, will improve the general, moral and physical condition of the population, and reduce the mortality from other diseases, which, though less dreaded, are not less fatal.

#### INTERNAL SANITARY ADMINISTRATION.

14. An examination of the drainage system of the Fortified cities shewed that the street-intercepting and outfall sewers appear to be well constructed and capable of removing the sewage to the sea promptly and completely, without stagnation or deposit, provided the water supply is sufficient.

The house-drainage is less satisfactory. Indeed, it appears that most of the inconveniences complained of, may be traced to stagnation and putrefaction within the house-drains. This is due, in some cases, to imperfect construction, but more often to improper use, principally defective flushing. Though house-drains can be kept clean by careful use of the normal slop water, without a special water supply for the purpose, still a special flushing supply simplifies the operation and renders it more complete.

15. It is, therefore, desirable that a special supply of 'armier' or other second quality water, be introduced to, at least, one closet or sink in each house, with a waste-preventing flush-tank.

The quantity of water required for this purpose, is not impracticably large. There are about 5,000 doors in Valletta and Floriana. If we assume that there will be one closet to each door (a liberal assumption), and that each closet will be used once daily by five persons, then, taking 2 gallons for each flush, the total daily consumption will be 50,000 gallons: a similar quantity would suffice for the three cities. This done, the necessity for flushing the street and intercepting sewers will be greatly reduced, if not entirely abolished, and there will be a considerable saving on this serious item of expenditure. A supply of second quality water for flushing is imperatively necessary in the three cities, where even the street sewers are flushed by hand—a costly process. As a temporary measure, sea-water might be used for this purpose. When the flushing of house-drains is perfected, the nuisance caused by ventilators will practically cease, and to flushing alone must we look for the abatement of stench from ventilators.

16. In the case of villages, the demand for excremental matter, as manure, will, it is believed, allow the introduction of partial hand-removal. This will not do away with the necessity of drainage, for the removal of slop-water and fluid excreta; but it will greatly facilitate the working of the drainage system and the disposal of the effluent sewage.

17. The provision of a supply of pure water to all villages is a paramount necessity. It has been shewn conclusively that the dietetic use of water collected from street surfaces, can never be safe. Indeed, water contained in underground tanks is never altogether secure against contamination.

18. More complete and efficient house-to-house inspection is required, both to enforce the sanitary law, and to educate the people in the elements of sanitation. The organization of the sanitary department has already been considered by the Committee, and a Resolution with reference thereto has been submitted. The administration of all matters, connected with drainage, from the construction of house drains, to the management of the out-fall sewers, should be consolidated under one engineer, and carried out by one staff.

19. The food-supplies require more complete control. A special Inspector of Markets should be appointed, and the sanitary department should be armed with increased powers, as regards the prohibition of the sale of bad or unwholesome food. These powers should be

increased on the declaration of an epidemic by the Head of the Government. The present market accommodation requires improvement and augmentation. Until this is effected, thorough inspection is barely practicable.

20. More complete vital statistics are required. The Government should have the power to order private medical practitioners to report all cases of any specified disease, whether terminating fatally or not. But these reports shall not be accessible to the public. To facilitate this, the report should be made not to the district Police Physicians, but to the Chief Government Physician, who should moreover be entrusted with the compilation of vital statistics, which is now done by the Police.

SPECIAL PREVENTIVE MEASURES DURING AN OUT-BREAK OF CHOLERA.

21. Prompt medical assistance, during the premonitory stage of disease, is essential to successful treatment. It has been found that compulsory removal of Cholera patients to the Lazaretto, is unpopular and leads many to conceal their premonitory symptoms till too late. It is, therefore, recommended that the compulsory removal of the patient should not, as a rule, be enforced. On the other hand, the healthy inmates of the afflicted dwelling and of neighbouring dwellings, which are in similar sanitary condition, should be removed to sanatoria, where they should be subjected to no more restraint than necessary to the maintenance of order and hygiene.

22. The buildings, whence the people have been removed, as well as that in which the case has occurred, should, in their absence, be cleansed and disinfected before their return.

Cleansing and disinfection should be performed at the public expense.

23. Removal to hospital facilitates the treatment of Cholera, but the removal should be voluntary as long as treatment on the spot is practicable, and the Cholera hospitals should be situated at or near afflicted places. The Lazaretto should not be used for this purpose.

24. The corpses of persons who have died of Cholera, should be removed to a mortuary at once, and interred as soon as the law permits. The grave and coffin should be filled with quick-lime, and the grave should not be re-opened for at least a year. Impervious and indestructible coffins are at all times undesirable, and, in case of Cholera, their use should be absolutely prohibited.

Intramural interments should, as far as possible, be prohibited.

Villages should be provided with cemeteries and mortuaries.

25. The Government should have special powers of action in case of epidemics. One of these should be the power to prohibit food, not only actually corrupt or bad, but unwholesome or undesirable.

26. During an epidemic, voluntary District Visiting-Committees would afford much assistance to the Government officers, in bringing to notice cases of disease, or of unsanitary conditions, in disseminating a knowledge of hygiene, and in the distribution of relief. These visiting Committees will, indeed, be most useful at all times as a means of educating the lower classes in sanitation.

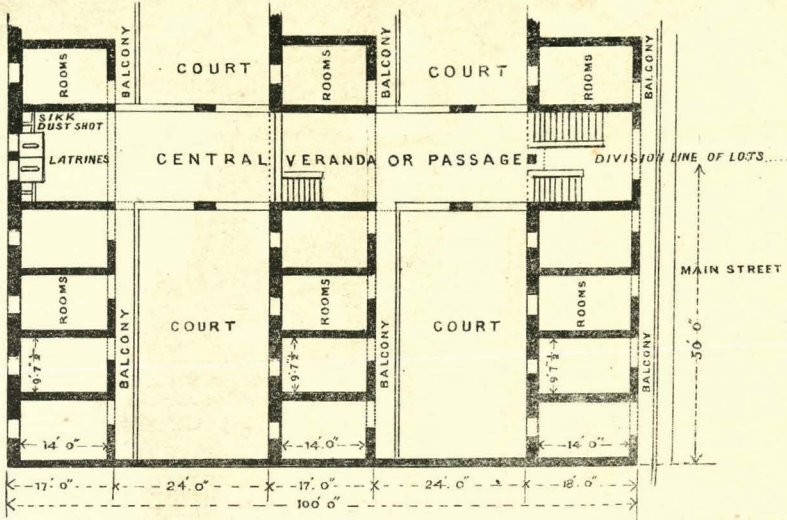
For fuller information and details, we beg to refer to the several reports of the general Committee.

S. L. PISANI, M.D.  
*Chairman.*

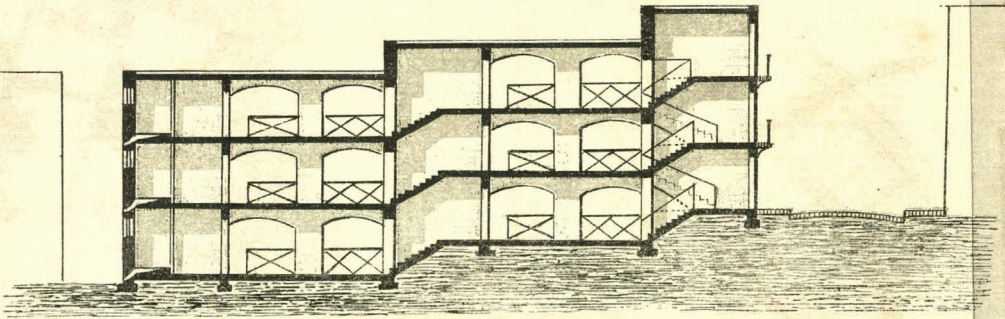
# — LABOURERS DWELLINGS —

*72 Rooms on two Lots  
with central Veranda common to both.*

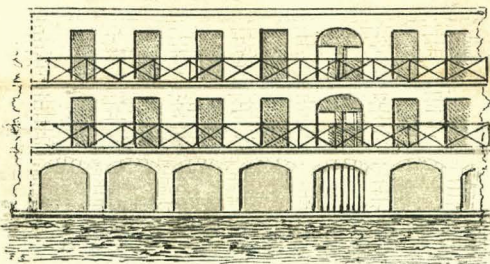
*Part Plan  
First Floor.*



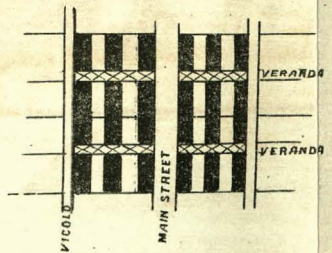
*Section & Elevation through central Veranda.*



*Elevation of Street Front.*



*Block Plan.*

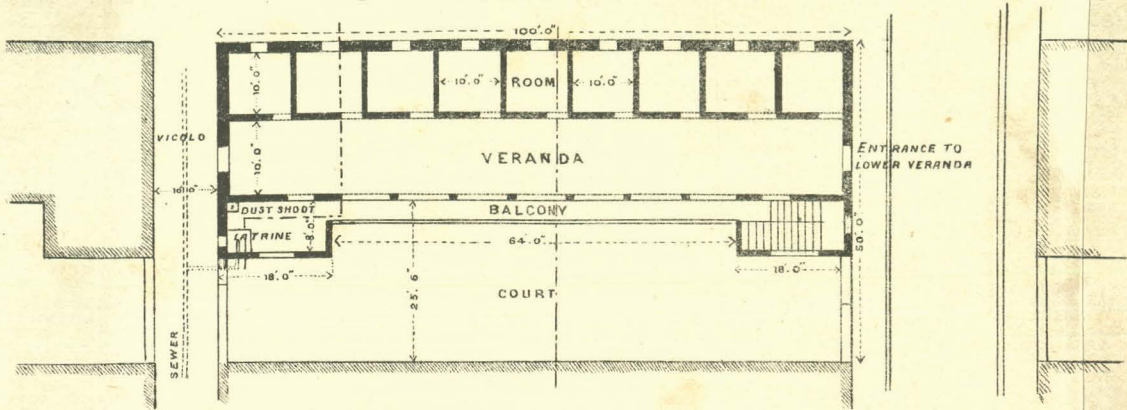


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Scale 25' to one inch.

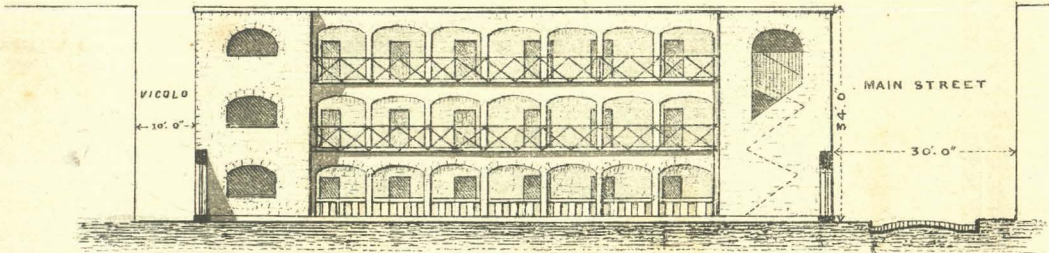
# LABOURERS DWELLINGS.

27 Rooms on a Lot 100 x 50.

Plan of First Floor.

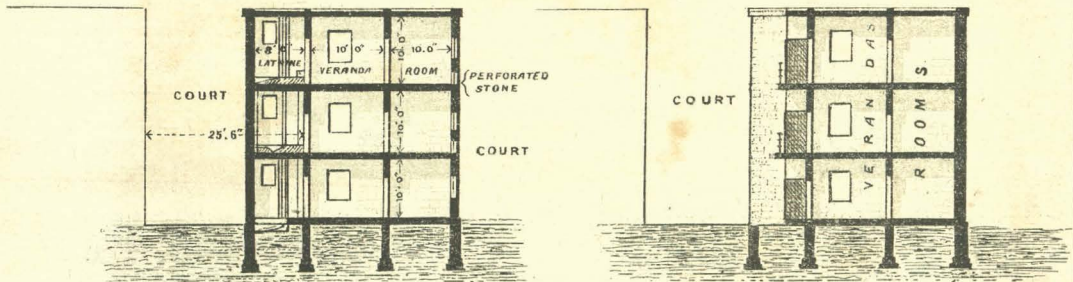


Elevation.



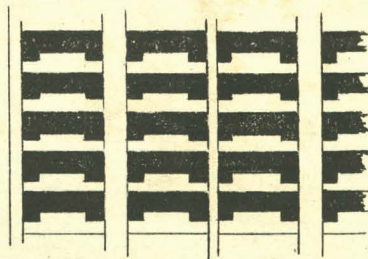
Section on line A.B.C. showing latrines.

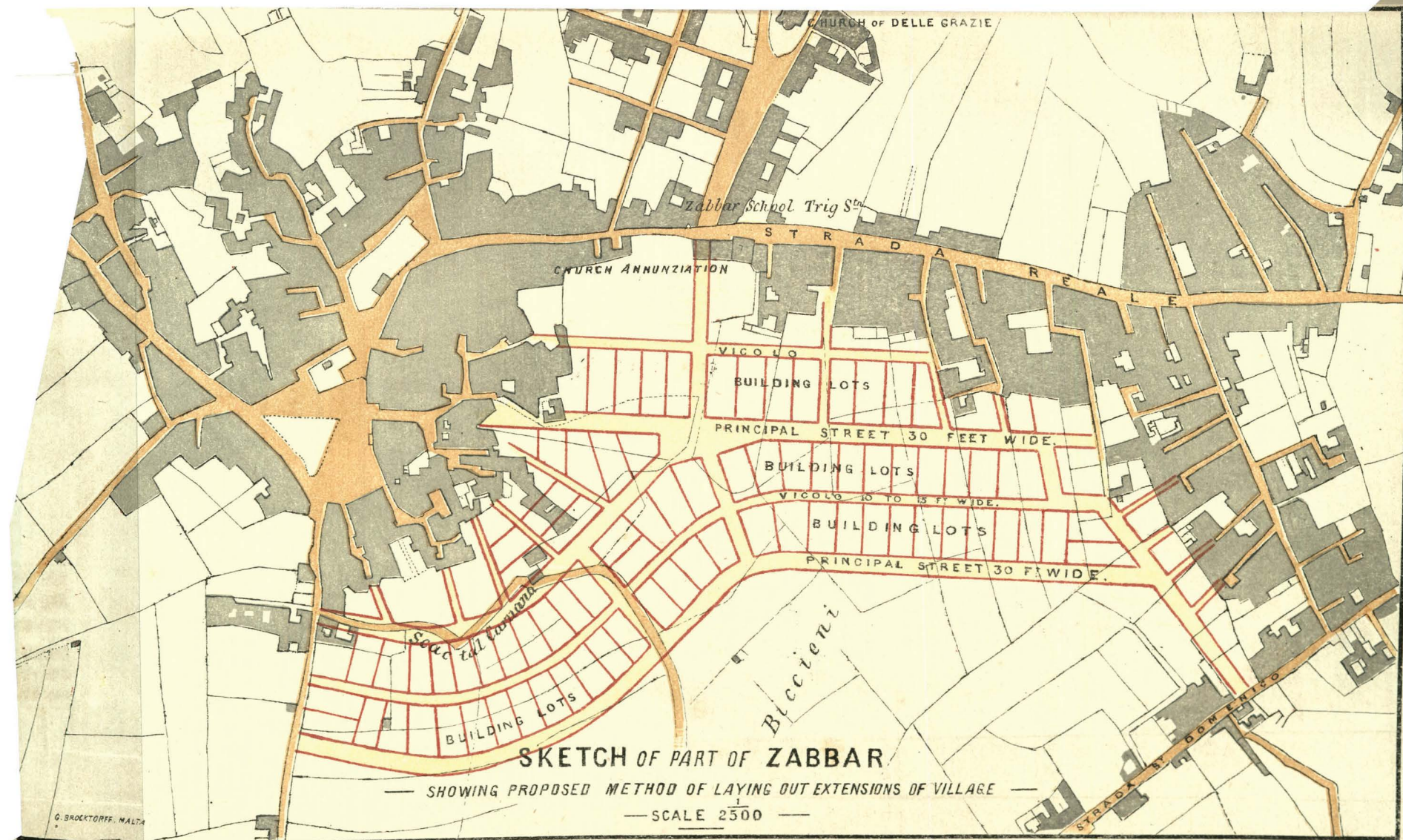
Section on D.E.



25 0 25 30 15  
feet.  
Scale 25' 1" to one inch.

Block Plan.





**SKETCH OF PART OF ZABBAR**

— SHOWING PROPOSED METHOD OF LAYING OUT EXTENSIONS OF VILLAGE —

— SCALE 2500 —