

The sanitary question in Malta : remarks and suggestions to the honorable elective members of the Council of Government / proposed by Charles Casolani.

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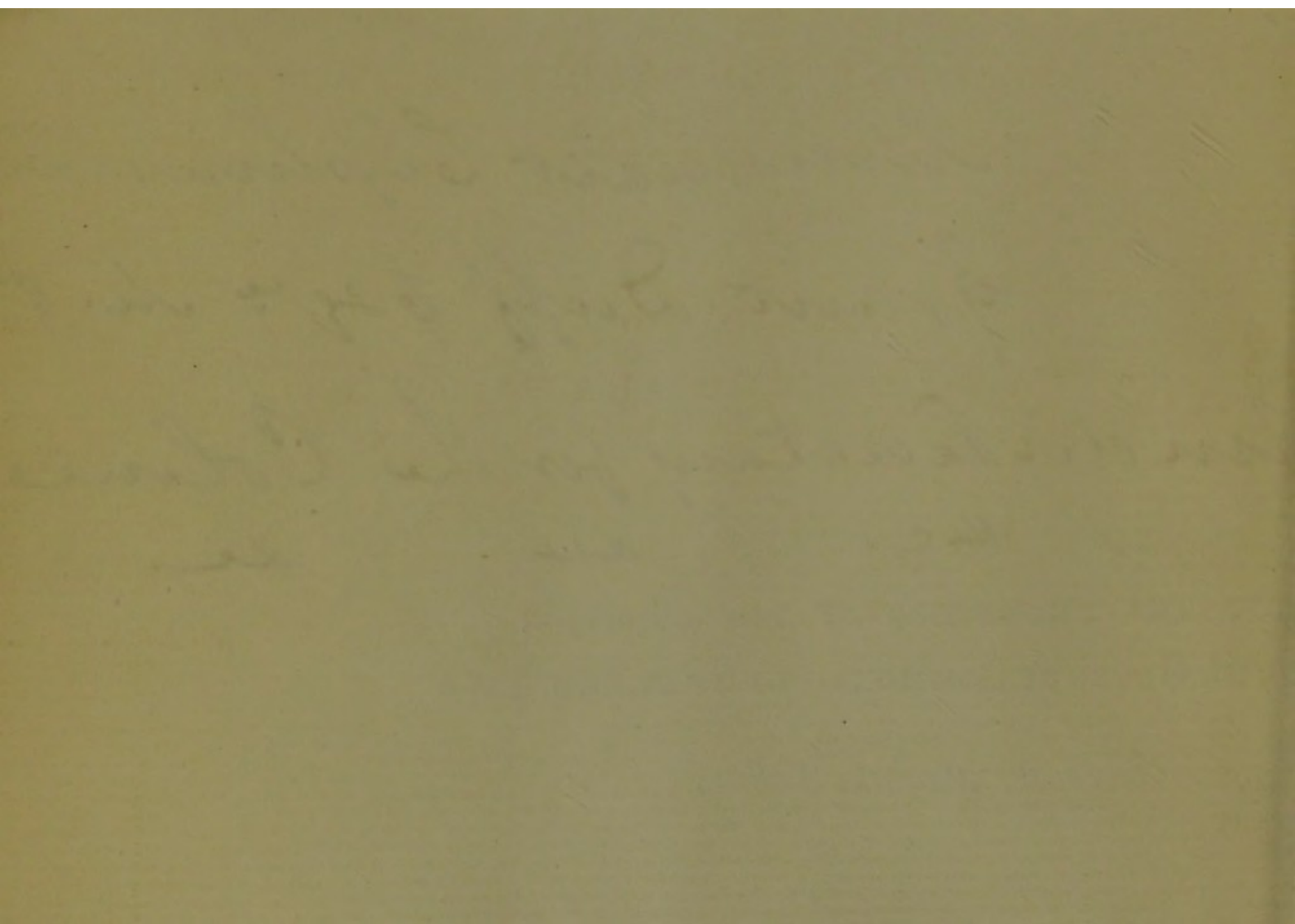
To

Monstuart Elphinstone
Grant Duff Esq. M. P.

Under Secretary for the Colonies
&c &c &c.

FROM THE PROMOTERS OF THE PETITION
TO THE HOUSE OF COMMONS—OF JULY 2ND, 1879.

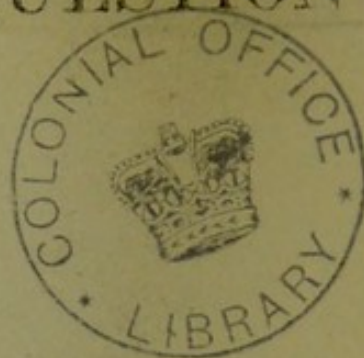
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THE SANITARY QUESTION

IN

Malta.



REMARKS AND SUGGESTIONS

TO

THE HONORABLE ELECTIVE MEMBERS OF THE COUNCIL
OF GOVERNMENT

PROPOSED BY

CHARLES CASOLANI, M.D.

MALTA

—
1880.

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CONTENTS.

	Page
Object... ..	5
I. Importance	6
II. Deficiencies	8
III. Remedies	16
1. Mortuary Chambers	16
2. Temporary Hospitals	18
3. Disinfection	18
4. Inspection	19
IV. The Dwelling	21
V. Drainage	35
1. Dry Method	38
2. Water System	41
VI. Organization and Laws	56
Conclusion	60

APPENDIX.

A. Government Notice inviting designs— 2nd October, 1858	63
B. Advertisement— Tenders for <i>Camerata</i> — 24th January, 1859... ..	63
C. Tender received ditto 3rd March, do.	64
D. Advertisement— Tenders for <i>Franconi</i> — 18th October, 1861	64
E. Extract from Dr. Sutherland and Capt. Galton's Report— 18th October, 1863	65
F. <i>Public Opinion</i> — concerning <i>Camerata</i> , with reference to Debate in Council of 23rd January, 1880	65
G. Collector of Land Revenue to Chief Secretary— 17th July, 1861	66
H. Regulations of the Royal College of Physicians— Edinburgh	66

1. ...
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...
9. ...
10. ...
11. ...
12. ...
13. ...
14. ...
15. ...
16. ...
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THE SANITARY QUESTION, &c.

"This is not the cause of faction or of party but
of the common interest of every man in *Malta*."

THE petition of the people of Malta to the British Parliament, moved in a Committee, carried by acclamation on July 2, 1879, and forwarded to its destination with 8661 signatures on the 31st of the same month, is to be laid, shortly, before the House of Commons, with the view of promoting the solution of the questions therein contained; questions undoubtedly of paramount importance for securing the rights and ensuring the general well-being of the inhabitants of these islands. The third and last prayer of that Petition is worded thus:—"That the vote passed on the 10th March 1879, by the majority of the Official Members, against the unanimous opposition of the Elected Members, for remodelling the Drainage of the Fortified Towns of Malta, be revoked."

The far from commendable conduct of the Government in thus forcing that vote, and the financial and economical reasons against that system of Drainage, have been, at different times, debated in the Government Council, criticised by the press, and by the Petition Committee as well, and will, most assuredly, be ably and accurately explained by the Representative Members in Council to the Right Hon. the Secretary of State for the Colonies, and in due time to the Members of Parliament. The reasons, however, both social and technical bearing upon the unfitness and impracticability of that system of Drainage for Malta have not been hitherto sufficiently understood, or probed to the full extent they demand: yet they should, in my opinion, be submitted without delay to that Minister's consideration, as well as to the Members of the House of Commons, if we do not wish to incur the risk of laying ourselves open to the charge of indifference as to the health of the People, or of utter ignorance of the subject.

We have, at present, a considerable number of provisions and sanitary measures partially enforced, or proposed by Government, to the grievous disadvantage of the country at large. They chiefly consist, besides the Drainage, of Ventilation of Sewers, Water-supply, construction of Model Dwellings to be let out in small tenements, the creation of a Permanent Sanitary Department with inexperienced officials, Building and Sanitary Laws, &c. Well, I think we ought, to our just objections to the proposed Drainage voted on March 10, 1879, to add our reasons against these other measures, not omitting, of course, to suggest their being substituted by others, that are of real advantage to health and the adoption of which would not affect the interests of the population, or necessitate the imposition of fresh burdens upon the people.

I, therefore, propose taking a general view of the Sanitary Question in order distinctly to examine subsequently, that of the drainage and of the provisions and sanitary measures in connection with this momentous matter; and, if successful in proving their importance, I think it would be opportune to lay before the Colonial Minister or Parliament some remarks and suggestions relative to the subject.

I begin then by pointing out the importance of sanitary reforms in this country, seeing that they are urgently needed on the ground of public health, and the present crying evils which demand a radical remedy.

I.

As the first benefit which a wise and well ordered Government confers on man is the protection of his morals and religion, so, in the second place, it ought to afford him security of life, and by all means promote his welfare. It is nowadays a universally admitted fact that nine-tenths of the ills to which poor humanity is subject, are to be traced to the acts and moral conduct of the individuals themselves; as it is equally evident that a very considerable portion of the maladies afflicting them could be prevented by the introduction of reforms calculated to improve existing social arrangements.

Every man struck by preventable disease, who falls a victim to a scourge or lingers prostrated and exhausted by its effects, represents a certain sum subtracted from the productive energies and aggregate capital of the community. After his death his wife and children are thrown upon the public; so that, morally, politically and in every

way it is an economical error to allow a state of things to continue by which such sad results are brought about.

It is impossible to make life in a large town as healthy as that of the country, where dwellings are surrounded by trees or cultivated land; but how much can be achieved even in unfavourable circumstances, is shown by the fact that among the great cities of England the health of London stands the highest.

That prevention is better than cure; that, given certain facts certain consequences will, almost invariably, ensue; and that, given certain remedies the cure is demonstrably certain, will be clearly demonstrated, without recurring to many voluminous statistical returns, by simply quoting Dr. Letheby's Sanitary Report, presented by him to the City Commissioners of Sewers in 1874, on resigning the office of Chief Medical Officer of Health for the City. In that Report the celebrated Hygienist states:—

In the seven years preceding my term of office, the average number of deaths in the City from continued fever was 140 per annum, whereas in the last seven years it had averaged but 53 per annum, and during the last three years only 28. As fever was the invariable concomitant of defective sanitary conditions, it was manifest that the falling off in the mortality from it was the fruit of the sanitary labours of the Commissioners, and so also was the notable reduction of the annual number of deaths from diarrhœa.

The sickness returns of pauper practice are in like manner indicative of sanitary improvements, for instead of an average of about 9,800 cases attended annually by the medical officers of the City Unions, there were but 4,631 upon the books during the year which had lately expired and the chief diminution had been in preventable zymotic disorders; fever, for example, had declined from an annual average of 604 to 78, diarrhœa from 884 to 175; and smallpox from 125 to 1. This can have no other signification than a great improvement in the sanitary condition of the poor.

Such were the conclusions of Dr. Letheby's Report; but very different were those contained in the report addressed to the Governor of Malta in the same year by the Medical Commission*:—

Dividing the death-rate of Malta for the decade ending in 1873 (the Commissioners state) we find that 50.20 per cent. is borne by children.†

* Report of the Commission appointed by His Excellency the Governor on the 23rd July, 1874, to enquire into and report upon the causes of the recent increase in the mortality of Malta.

† In January 1880 it rose to 54, in Feb. to 58, in March to 61.

Now an excess in the death of children under five years of age may be taken as a far more reliable criterion of the sanitary conditions affecting the health of a community than the total average mortality rate, even though every allowance is made for neglect, maltreatment, deficiency of food, and exposure.*

With reference to the general mortality they observe:—

Whilst it is evident that the death rate we have been considering has been excessive, it is equally clear that an undue proportion of it is attributable to causes which are preventable.†

But in the United Kingdom there exists an organised sanitary machinery, worked out by experienced intelligent Officers who watch, not over the streets only, but also over dwellings and new buildings, overcrowding, epidemics, disinfection of houses and the effects they contain, water for drinking, food and all kind of drinkables &c.—Markets, Bakeries, Cemeteries, &c. whilst everything is still wanting here and has to be done in order to remedy the many existing evils, which, as will subsequently be shown, might be effected without creating new taxes or pressing heavily on the resources of private individuals.

II.

That Drainage was neither the only improvement required for protecting Public Health, nor first in order—and that, therefore, I was right when, since 1858, I recommended “Improved Dwellings as the most essential part of a Sanitary Reform,” was affirmed, amongst others, by the distinguished Sanitary Engineer Mr. Hawkesley, C.E.—in an address delivered in 1858 at the Liverpool Social Science Congress, as President of the Health Department, when he said:—

The natural term of life of our Urban populations is unnaturally shortened by preventable causes. These preventable causes are to be sought not in the water-pipes and sewers, but chiefly in the houses and habits of the industrial classes. I attribute the excessive waste of

* See Parks Hygiene: Wilson Hand-Book of Hygiene: and the recent Address to the Social Congress by Dr. Lyon Playfair: Times October 6th, 1874.

† The following is the return of deaths in Malta and Gozo, published in the Government Gazette on 20th Feb. 1880.

Malta...44.77	} against {	45.16	} in the pre-	} and {	24.45	} in the corres-		
Gozo18.28		24.45			ceding		19.74	ponding
Both Islands	...41.49		42.62			fortnight		27.87	period of 1879.

infant life to the pernicious effects of overcrowding. For the mitigation of this considerable evil so seriously affecting the health and happiness of the industrial classes, we must look to better dwellings, through ventilation, improved legislation, &c. *rather than to measures of compulsion and restraint.*

Wherefore, our paternal government, rather than forcing upon the people their favoured drainage scheme, ought to have directed its attention to that sanitary desideratum so urgently needed. In the mean time, we shall examine the question of overcrowding and of the many evils now existing for want of proper and judicious sanitary measures.

Many houses once healthy and inhabited by a family of five or six wealthy persons are to be seen pauperised, converted into Common Dwelling Houses, occupied by more than fifty; others rendered damp and deficient in light, having the *mezzaninos* and rooms on the ground-floor dismembered from the same, and let as separate tenements, and the cellars converted into human habitations, stables &c. wherefore left without any court-yard, every ventilation is rendered impossible and the many noxious influences operating in them are slowly but surely deteriorating the health of the inhabitants.

The cause of Typhoid fever, Dyptheria and other scourges is often traced to emanations from Sewer Ventilators, and also from house drain Ventilators, being in free communication with the public sewers; whilst Dr. Sutherland and Capt. Galton, R.E., of the War Department, both being distinguished Hygienists, after a careful consideration of the subject made on the spot in 1861—had, since then recommended to our government to be very cautious in the matter and that only a few ventilating shafts at the highest points of the main sewers were required:—

All the main lines of Sewers (they said) should be ventilated by shafts at the highest ends carried up at a distance from the houses, and the opening of the shaft should have a wire-box fitted in it containing 1 foot or 18 inches of charcoal powder to destroy the sewer-gas before it passes into the external air.*

Had the public sewers been ventilated in that manner—and disconnected from the house-drains—though in some way objectionable, considering their present fearful condition, surely we might have been

* Report "on the Sanitary Condition and improvement of the Mediterranean Stations" by Dr. J. Sutherland and Capt. Galton, presented to both Houses of Parliament in 1863.

spared the occasion of lamenting the death of Mr. Hindmore, Miss Miller and of many others, victims of the effects of poisonous emanations proceeding from the numberless ventilating shafts, (fixed inside the houses, others opposite their windows in the public streets), penetrating in the rooms of many dwellings.

As already suggested by me last year, government would do well, in my thinking to cause all existing sewer-ventilators to be stopped up; meanwhile, before effecting any change in the existing system of sewerage in Valletta and Floriana an enquiry ought to be instituted into the subject by a scientific and practical sanitarian, with the object of determining upon the system of drainage that should preferably be adopted; and I observed that, with regard to House drain Ventilators, when unconnected with the public sewers carried up to a distance from the surrounding houses, cannot generate disease, on the contrary they are productive of absolute beneficial effects to the health of the inhabitants.* However the question of Ventilators constitutes but a small part of the grave question of sewerage which, if disposed of conformably to the principles here laid down, will determine the form and place where Ventilators, such as Dr. Sutherland recommends, may be fixed without danger to health.

The slow deterioration of the health of many inhabitants and, what may properly be termed the spontaneous or remote origin of the attack, could often be traced to defective or obstructed drains from want of water for flushing, thereby causing decomposing refuse matters and excreta to accumulate in and around the dwellings, by their effluvia impregnating and poisoning the atmosphere of the living rooms. I believe this and the water for drinking tainted by sewer emanations penetrating into the water-tanks, through the over-flow-pipes communicating these under ground-tanks with the public-sewers, to be a peculiarly prolific cause of malignant throat-affections, measles, scarlatina, &c., whilst the public-tanks and many houses at Sliema and in the Casals are supplied by the surface waters proceeding from the public streets, copiously impregnated with excreta and other matters injurious to health.

The propagation of many scourges amongst us may, sometimes, be conclusively attributed to the non existence yet of "Mortuary Chambers" wherein the dead-bodies of the indigent and poor should

* "Some considerations on the important question of Sewer Ventilators"—
Malta 1879.

be removed and kept in decent custody, until the time of burial; and of "Houses of Refuge" for temporarily lodging their families, or of "Temporary Hospitals" for infected cases in times of epidemics; as well as to want of appropriate places and regular provisions for a systematic "Disinfection" of their bedding and effects: provisions which surely ought to be adopted without delay in order to prevent the propagation of infectious and contagious disease.

"Proper Vehicles" for the exclusive removal of persons suffering from transmissible diseases, or of dead infants, are absolutely needed. The sick, including contagious cases, are conveyed from the farthest ends of the island to the Central Hospital: a practice, as can easily be imagined, fraught with most deplorable results, and its continuance would only be to breed disease.

But what is still of greater importance, there is a real lack of a Sanitary authority, under the responsible management of an efficient Health Official, well versed in all the branches of practical Hygiene and qualified to organize a Health Department, invested with the power of a vigilant survey, extending over every portion of the two islands.

A diligent inspection systematically carried on would effectually check the spread of epidemics, by at once discovering the source and first cases of contagion, and, by adopting precautionary measures and analytical examinations of articles of food and drink ably conducted, many frauds would be detected, many diseases might be prevented, caused by the use of tainted water, bread adulterated with pulse, and chalk or mixed with lime, alum and bismuth; of flesh meat and fish, either fresh, salted or smoked in a putrid state and unfit for human food; and, of wines and spirits with an admixture of clay, lead, antimony and copper; and of beer poisoned by tobacco, common salt, and even oil of Vitriol.

Such is the actual shameful Sanitary condition of these islands after 80 years of English rule; and whilst the direst diseases daily engendered are allowed full play to culminate into death-dealing epidemics, it is sad in the extreme to contemplate the fatal apathy of the Government utterly unconcerned at the frequent recurrence of such evils, but tenaciously clinging to its pet system of Drainage and Ventilators: and what a system?

It was during Governor Le Marchant's Administration, that the necessity for sanitary measures began to be felt and the Government showed signs of an intention to improve in that respect the condition of these islands. Unfortunately, however, even since then, the advisers

of our Governors were determined upon making of this question of national life, one of party. Whilst declaring themselves favourable to the Drainage with a view of securing the good opinion of the imperial authorities, they had no faith in sanitary measures generally and were successful in defeating the reform in Dwellings on sound sanitary principles initiated by Le Marchant. Ever bent upon being the promoters of any new measure, they set their faces against any suggestion whatever, however good, proceeding from others, hence it is that nothing has been really done to this day, to remedy such a deplorable state of things.

That the local authorities had no faith in Legislative enactments or sanitary measures of any kind is fully borne out by the fact that, the Ordinance No. 5 "To amend the Police laws and regulations" containing some very important provisions with regard to public health, although passed by the Council with the full concurrence of the representative members on July 5th 1858, was suffered to remain in abeyance until 1876.

Moreover, in a Pamphlet published in 1867 I suggested "the formation of a Sanitary and Statistical Department, as a first step towards a general reform, as well as a publication of weekly returns of deaths, giving not only the number and causes of deaths: as in use now, but also all cases of sickness prevailing in the country, accompanied by remarks and other useful informations" * But the Government, notwithstanding their importance and their being universally admitted as the foundation of every reform having public health for its scope, turned a deaf ear to such proposals; proposals, however, in which I was supported by Dr. Sutherland and other eminent writers on Sanitations, and lately by Dr. Richardson of the Royal Institute, author of "Hygija," who in his address before the Sanitary Institute of Great Britain, on July 5th, 1877, made the following remark:—

The great work, and indeed the first sanitary work of the future standing before all other legislations, except the formation of a Central Authority, is the systematic enumeration, week by week, of the diseases of the kingdom, through the length and breadth of the kingdom. For the omission of a registration of disease there is no conceivable excuse. The thing has only to be done.

If the Government had the will it would have easily found the way to carry the measure into effect.

* Suggestions with regard to the general administration and internal affairs of Malta by C. Casolani, M.D.—London D. Lane, 310, Strand—1867.

But if the Government did not show signs of rousing itself from the lethargy, there were not wanting watchful representatives in Council. In fact, in 1870 the hon. R. Barbaro asked for the periodical publication of death returns, by omitting, only, from my proposal, with the view of avoiding opposition, the statistical return of the prevailing diseases—by which medical practitioners would be bound to report every new case of sickness whether epidemic or not. The hon. Mr. Barbaro (urged by me, as he stated in the sitting of Feb. 17, 1875) required their publication weekly. The hon. Crown Advocate could not see the utility, much less the necessity, of adopting such a provision, being of opinion that the statistical publication of deaths in the decennial Census, sufficiently answered such purpose; and, it was after encountering almost insurmountable difficulties caused by the stubborn opposition raised by the Crown Advocate that a fortnightly publication of the same was obtained.

The benefits resulting from the adoption of such a measure, always considered as one of the principal elements of every reform (however inadequate in Sir P. Julyan's opinion who said that "these fortnightly and yearly returns are considered as a very indifferent contribution to hygienic literature") can be inferred by what Mr. Barbaro said upon this subject in the sitting of Feb. 27, 1875:—

I shall not dilate upon the very useful effects of such a publication; having been the exciting cause of a study into the nature and number of deaths, one of the most influential weekly papers in the island (*Public Opinion*) alarmed at the very high death rate, really disheartening, suggested the appointment of a Select Committee to inquire into the local causes of the increased death rate, especially in some parts of the island, having in view that of other countries. A Commission was immediately appointed by the Government which, after long and painstaking investigations, drew up a report, which was distributed to the Members of Council, with the nature of which we are all fully acquainted.

And in the said Medical Report the Commissioners stated on the subject:—

The returns received on alternate weeks from the several districts into which the island is divided clearly evidenced a common and general increase in the number of deaths. In this manner voluminous information was gathered, which if it presented but few novelties or items of much signal interest, was, however, valuable inasmuch as it afforded a broad groundwork of reliable facts alike indicative of clear and coincident inferences, the basis of which was thus removed from the region of doubt.

The other suggestion for a "Central Authority and Sanitary Organisation under the direction of men of known scientific and practical ability," was also made by me in 1867,* while the government supported, as usual, by its intimate advisers, contemplated to lay out enormous sums of money simply upon the drainage of the fortified Towns; as indeed it was later on notified by the Chief Secretary to Government in a Pamphlet "published in the Government Printing Office," in which, with reference to this system "to be complete"—he says—"it could not be taken under £200,000, and in this opinion Mr. Fowler, C.E., has since agreed."†

In opposition to these extravagant ideas of the Government as to Town Sewerage, and the proposed vote for £1,000, to improve the house drainage of some government houses by introducing English glazed-pipes, the Hon. Mr. Barbaro in the sitting of Feb. 17, 1876, proposed a Resolution "for the creation of a 'Sanitary and Statistical Office,' before launching into any heavy expense for Sanitary objects." That Resolution was supported by all the Elective members. In the course of the debate, memorable as being the most interesting that had till then engaged the attention of that Assembly, Mr. Barbaro said:—

"I declare to you that we, the elective members, shall not vote a single farthing for sanitary purposes unless a 'Sanitary Statistical Office' be established consisting of competent men, and not of the usual *guastatori* (persens that are unfit.)

The presence therefore in the island of a truly efficient English Sanitary Official, for a year at least, is imperatively required."

This proposal so earnestly and opportunely insisted upon, threw the Official Bench into utter dismay. The Crown Advocate, during the three sittings over which the debate lasted, offered the most strenuous opposition to the Resolution; he contended that such a proposal was altogether uncalled for and useless, pointing to the existence of a Professor of Hygiene and observing that the education our Police Physicians received rendered them fully qualified for the performance of all sanitary duties, no matter how difficult, as people pretend, which however he could not admit, for the reason that Medical Police and Sanitation expressed the same thing and only differed in name; wherefore the existence of a Medical Police Department rendered the creation

* Suggestions &c. pamphlet cited.

† Remarks upon the Drainage and Sewerage of Valletta and the Three Cities; *Sanitas Sacitatum, omnia Sanitas*. Malta, August 1874.

of a Sanitary Office quite superfluous. He concluded by charging Mr. Barbaro with casting discredit upon the Medical Police and Profession in the Island; thus appealing to a false sense of patriotism of the Elected of the people. The other Government Orators contented themselves with echoing the Crown Advocate's words. The attempts, however, of the latter to damage the elective members in the estimation of the public, proved utterly futile; they, by mutual agreement, gave at every stage their united and cordial support to the Hon. Mr. Barbaro's proposal, in spite of the amendments and numberless obstructions from the Government side; and at last the debate was adjourned to the month of April. The Crown Advocate himself, however, later on convinced that, in sober reason the creation of a Sanitary Statistical Department could not well be resisted, but unwilling at the same time to suffer its being effected on the lines proposed by others, conceived the idea of yielding so far to the pressing arguments of the Elective Members, as to assent to the formation of such a Department, but it must needs be one entirely of his own creation, merely retaining a faint semblance of the one proposed, but in reality absolutely different, and to be under his immediate control, and not as insisted upon by the Elective Members of a professional Health Officer.

Such is the origin of the famous Governor's Minute which the Chief Secretary laid on the Council table by command of His Excellency for the establishment of the present experimental Police and, so called, Sanitary Department; and notwithstanding the unanimous and energetic disapproval of the Elective members of that proposal, the Crown Advocate remained firm in upholding this fruit of his creation. Having subsequently persuaded the Colonial Secretary into the approval of the same, he easily obtained the Governor's permission to get it passed through the Council by the bare Official majority in the sitting of June 16, 1875: thus setting at defiance and violating Lord Cardwell's Despatch, which, till then had formed an integral part of our Constitution, and in disregarding Dr. Sutherland's recommendations:—

The first step in administrative improvement—he says—is to make it somebody's sole business to protect the public health. It is indispensable in Malta that in this matter the Government should take the initiative. There must first be an executive.... a Surveyor *practically* acquainted with Sanitary Engineering, and with the most efficient and economical methods of executing public health works, of water-supply, sewerage, drainage &c.

in towns, villages and houses, and who could aid in the due consideration of improved building plans. *

The assumption of Hygienist on the part of the Crown Advocate, and the undue notice paid to his whimsical schemes have proved extremely barren of results satisfactory to the people—notwithstanding that much has been said and written on these subjects; and, what is still worse and painful indeed, they have brought Sanitary Science into utter disrepute: therefore, many are now averse to any change, and every sanitary measure proposed by the government is looked upon with suspicion.

Having thus virtually placed the public health at the mercy of a Lawyer, with an array of blunders hitherto committed and brought face to face with so many sanitary requirements and the universally admitted principles that vast numbers of the population yearly increasing are cut down by causes easily checked by adopting hygienic measures, with which it is highly important that people should become familiar, it is really disheartening that the Imperial Government has yet to learn the means how to reach at the root of this crying evil; that not foreseeing the consequences, it empowered the local government to force upon the country ineffectual and very expensive measures, unsupported by science and condemned by public opinion. Meanwhile all those who take interest in, and have at heart the health and prosperity of this population, are intimately convinced of the great benefits to be derived from the opportune and efficient application of precautionary sanitary measures ably directed by men of experience; and the people when once convinced that these can efficaciously be effected, and moreover without the imposition of new taxes, and economically, they would readily acknowledge the importance as well as the necessity of having the same carried into execution.

III.

I shall now proceed to make a few remarks and suggestions upon the practical application of the principles of a Sanitary Reform.

I. MORTUARY CHAMBERS.

A crying evil is the habit of keeping a corpse unburied for a long

* Report "On the Sanitary Condition of Malta and Gozo" by Dr. J. Sutherland. Presented to both Houses of Parliament by Command of Her Majesty in the year 1867.

period, and that in the one room occupied by the living members of the family. The want of Mortuary Chambers, therefore, is much felt, especially during the prevalence of epidemic disease, which should, without further delay, be constructed for the reception of dead bodies from the dwelling rooms of the poor, as well as for those of others, even of the upper classes, when death is occasioned by transmissible disease, particularly plague: to be kept in decent custody until the time of burial. The Mortuary to be entrusted to a keeper under the control and inspection of sanitary authorities.

By removing as soon as possible such dead bodies from dwellings, that by law cannot be buried before the expiration of 24 hours, many unfortunate beings, now condemned to live in underground cellars, smoky rooms and cribs, or in rooms separated from houses and in overcrowded rooms of Common Dwelling Houses, *Carreye*, would be delivered from a forced influence of contagion and disease.

This salutary measure had long since been recommended by me for adoption, particularly in two letters on Sanitation published on the 18th March, 1875 and 8th March, 1879. The paternal government of Malta ready to scowl on public opinion and to violate the domicile and rights of property for sanitary purposes* remained deaf to that suggestion, perhaps, because they did not admit the importance of such a provision.†

* The last paragraph of Art. 65th of the Draft Sanitary Ordinance before the Council runs thus:—"For carrying out these regulations, the Police by a special order, in writing, from the Superintendent, from a Syndic, or in the Islands of Gozo and Comino, from the superior Police Officer at Gozo, *may employ force, when necessary, for opening any door.*" Whilst, for similar cases, in the United Kingdom, the Public Health Act provides, that:—"Such Officer of Police shall not be at liberty to enter any house or part of a house or dwelling of any person *without such person's consent, or without the warrant of a justice for the purpose of carrying into effect this enactment.*"

† Whilst this pamphlet was under Press, at the meeting of Council held on the 18th Feb. 1880, the distinguished Councillor hon'ble Mr. Savona, moved the following Resolution:—"Resolved that, in the opinion of this Council, Mortuary Chambers should be provided for the proper custody of such corpses as cannot be buried before the expiration of 24 hours." The Crown Advocate yielded to reason, at last, by seconding the Resolution. The Resolution was, therefore, agreed to *nem. con.*

At the meeting held on the 17th March, the third reading of the aforesaid Ordinance, which confers on the Police the power of breaking open the door of any house, was forced by the Crown Advocate through the Council, against the unanimous opposition of the Elected Members.

II. TEMPORARY HOSPITALS.

Judging from the experience of the past, timely provisions ought to be made, for any contingency, for the formation in each District (into which the Island would have to be divided for sanitary purposes) of a Temporary Hospital in times of epidemics, to enable the Local authorities (which also ought to be created) in each District, to take care, separately, of infected cases. The same to be also under the control of the District Medical Officer of Health. In 1837 District Hospitals were formed, two in Valletta, one at Floriana, and several others in the Three Cities and Casals (Villages), for Cholera patients only, and that sound measure gave good results. But in subsequent epidemics, more especially during the prevalence of Cholera in 1865, no such measures were adopted. All cases were sent to the Central Hospital. Many died on their way and others from the effects of the heat and scorching sun, want of assistance and medical aid of any sort; an improvident practice which surely gives intensity to epidemic disease and, therefore, should be obviated for the future, by all means.

The system followed in Malta in having one Central Hospital, and all public charities entirely administered and supported, or simply administered by the government, is otherwise liable to very serious objections. The reasons for disapproving that system have already been stated by me, when I proposed (in 1867) that they should cease to exist as at present administered; and, that the voluntary system and endowed institutions of benevolence, aided and assisted by the government, should take their place.*

III. DISINFECTION.

It is evident, on the face of things, that not only the erection of Mortuary Chambers but the construction also of Disinfecting Chambers and Houses of Refuge is of paramount importance.

With a view of preventing the spread of disease, regular provisions ought to be adopted for disinfecting every room, as well as the effects contained therein, in which sick persons suffering from infectious or contagious disease had been lodged: especially the destitute and poor. To legalize the practice of *Disinfection*, so beneficial to check the propagation of contagion, *Houses of Refuge* should be provided in each

* Suggestions &c. (pamphlet quoted.)

Urban and Rural District without delay, where the families of persons dying from contagious or infectious disease might be removed and temporarily lodged, so that in the interval every room as well as all the articles of bedding and clothing therein contained may be regularly disinfected.

No one can doubt that the present dangerous state of our sanitary arrangements, is productive of baneful consequences and must needs suggest grave reflections for preventing the spread of contagion and infection; while, as to the very beneficial results of the proceedings of disinfection pointed out by the late distinguished Hygienist Dr. Letheby, in giving the results of his long experience—already quoted—with reference to the same subject, he said :—

That they had been most conclusive, for in no case, had there been a recurrence of disease from the use of the disinfected articles or of the rooms so treated.

IV. INSPECTION.

Great alarm had prevailed last year amongst the population during the epidemic then raging at Astrakan, owing principally to the intense diffidence of the people in the existing provisions for guarding the inhabitants against the introduction and propagation of that pestilence : although, in my belief, there seemed to be then no reason to apprehend immediate danger to these islands. We cannot, however, deny that we are at all times exposed to the introduction in the island of that, as we surely are, of such other dreadful epidemics as those that have occurred during the life of many of the present generation. Evidently, therefore, it is of the utmost importance that provisions should be contemplated and rules and regulations made, not only in reference to precautionary measures against the importation of plague or other infectious and contagious disease, with the view of protecting these islands from the same, but sanitary enactments should also be passed by the Government Council with regard to strong measures that should be adopted for stamping out the scourge, by preventing its propagation among the inhabitants. It is universally admitted that, of all methods for preventing the spread of infection and contagion none can be wiser, than to afford all chances of prompt succour to the first case that may manifest itself in any, even the remotest, part of the country : as undoubtedly none can be more unwise and ungenerous than to allow a number of persons living together, not yet infected, to remain for any

length of time in the narrow walls wherein it appeared, exposed to the peril of a forced contagion with those already suffering from the infection: an evil and a danger to which this country is at present manifestly exposed, mainly for want of a regularly constituted sanitary machinery and skilled medical inspection.

When the Government Council is called upon to legislate for the purpose of carrying out the multifarious sanitary measures that are required to efficiently protect, in every way, the public health—eventually leading to a complete Sanitary Code—the provision to be made for *Inspection* is a matter that will require to be carefully considered; and I apprehend that, in the absence of a professional Sanitarian in the island, it will be found somewhat less simple than would appear at first sight; considering that the law will be general and compulsory and that the Sanitary Officers, by neglecting to conform to the rules and regulations prescribed by law, will render themselves liable to be visited with appropriate punishment, if they neglect to perform the duties assigned to them.

A proper system of inspection will be essential in these Islands for the efficient working of Sanitary Laws and of all enactments in regard to public Hygiene. Regular inspections will have to be made as regards the quality and quantity of water supplied; inspection of houses, requiring amendment in certain particulars; shipping should be visited to ascertain if there exists defective ventilation, &c. &c. in the fore-castles; periodical inspection for the cleansing and prevention of overcrowding in common Lodging Houses (*Kerreye*); inspection as regards the quality of bread, of meat and fish of Markets, and to have them seized if diseased, putrid or of animals which had died from accident or disease, and condemned as unfit for human food; fruit and vegetables in a decomposed condition, to be seized; and, wines, beer, and spirits to be periodically analysed, condemned and confiscated, if found adulterated &c. &c. But, above all, regular and systematic provisions are indispensably required in times of difficulty and danger, as for instance during the presence of virulent epidemic disease of any kind; with the view of preventing its propagation, which must be provided by the appointment of a sufficient and capable staff, who would have to devote time and attention to a proper and systematic supervision of common lodging houses, and miserable dwellings occupied by the labouring classes and poor.

I feel sure that from what is here set forth, it can be easily per-

ceived that skilled *inspection* must be an essential feature of any system of reform that will likely work well ; that, in beginning to improve our sanitary laws, it is more important to start in the right direction than to aim at over rapid progress ; and that the duties of Sanitary Officers are great, every day increase in amount and become very serious in their nature ; and, therefore, must necessarily occupy all their time.

IV.

I shall now attempt to give an account of the circumstances and facts connected with the question of Domestic Architecture in Malta, and explain the reason why the insanitary condition of dwellings has lasted to the present day, especially the domiciliary condition of the great bulk of the labouring classes and poor : suggesting, at the same time, the only means whereby, in my thinking, we shall be able to effect great improvements to remedy existing evils in that direction.

THE DWELLING.

A subject of the highest importance in the sanitary question is the construction of houses. The internal condition of dwellings in this country has been sadly neglected, whilst it should have engaged the attention of the government, before the Drainage and all other sanitary measures. After a careful study of the many sanitary requirements in these islands, in 1861, Dr. Sutherland and Capt. Galton, in reference to the subject, said :—

“The sanitary condition of the Dwellings of the Civil population is very bad. In all the towns the Drainage, especially the House-Drainage, is in a very bad condition.”*

In 1865, Dr. Ghio, Chief Police Physician, now holding, besides, the office of Chief Medical Officer of Health, in an official report to H.E. the Governor, also observed :—

“Persons who have never visited the dwelling-houses inhabited by the lowest and poorest classes, cannot form an adequate notion of their bad hygienic state. There are indeed habitations totally deprived of ventilation, the ground-floors and cellars are perpetually imbued with water and sewage.”

A condition of things which remains up to this day unchanged. Again, Dr. Sutherland in 1867 wrote :—

“Capt. Galton and I showed (in 1861), that the house drainage was in a condition dangerous to health ; that domestic conveniences were most

* Report on the Sanitary Condition of the Mediterranean Stations &c. 1863 (quoted.)

defective and unwholesome; that a better method of water-supply was urgently required. We further pointed out the bad general construction of houses and the need of improved dwellings, the construction of which was at the time under consideration. And to the then existing state of the dwellings and to defective sanitary works we attributed much of the peculiar liability of Malta to epidemic and scrophulous disease, leading to great mortality among all classes and ages of the population."*

And as already observed, Mr. Hawkesley attributes to the bad condition of dwellings, not to drainage, the fact that the natural term of life of our urban populations is unnaturally shortened, "wherefore we must look to better dwellings, through ventilation in the rooms, &c."

If the government, the acknowledged administrator of public property, was in duty bound, previous to the arrival here of the two eminent hygienists in October 1861, to improve the condition of dwellings and to make them healthy, how much more so since then, after its attention had been directed to the great importance of sanitary measures by men so justly esteemed for their scientific and practical knowledge, as Dr. Sutherland and Capt. Galton surely are, possessing the full confidence both of the Imperial and local governments, and sent out here for the special purpose of thoroughly investigating the matter? Let us, however, examine what has the government been doing, and whether it has encouraged the building of a better class of habitations by private enterprise.

I shall begin by relating the share I had, unfortunately, in this social interest.

On my return home in 1858 after a 20 years' absence, struck with the great neglect of this and other vital requirements on the part of the government, having given up the practice of my profession, I devoted myself to what I considered more useful and beneficial purposes, in the way of improving dwellings and otherwise promoting sanitary measures and appliances in a country in which they were imperatively needed, acting on the principle that prevention is better than cure. Fully believing that it is in the dwellings of a population that their mind and character are formed and that their future place in the scale of morality and intelligence would be determined; actuated by a strong sense of advancing the welfare of my countrymen, and animated by a disinterested spirit, I called the attention of H. E. Sir J. Gaspard Le Marchant, arrived in the island the same year, 1858, to the bad

* Report on the Sanitary Condition of Malta and Gozo &c. 1867 (quoted).

condition of Dwellings in general, more especially those of the working classes and poor, and of the Drainage of Houses. I proposed that the reform of domestic architecture should take precedence, by Government taking the initiative with the granting of urban property on long or perpetual lease, binding the grantees to effectuate improvements and such measures in the buildings as sanitary science demands.

That proposal was favourably entertained by His Excellency, a man endowed with the best intentions, united to firmness of purpose, and by his direction the same was instantly set on foot. Closely following the outlines of my plan in the grant of leases, the Government by public Notice of 21st Oct., 1858, designated the block of buildings, called "Camerata," for demolition, to be converted into a Model Dwelling House for the accommodation of the labouring classes and persons of small means.* The said tenement was, accordingly, offered for public competition by Advertisement dated 24th January † and adjudged to the highest bidder, on the 8th March, 1869, (to me as agent for Monsignor Casolani) on a perpetual lease, and subject to the annual perpetual ground-rent of £180 ‡ whilst it previously barely yielded £60, from which had to be deducted all charges for renewals and repairs, and besides for administration.

After the success of this experiment not only from a Sanitary, but also from an economical point of view, Sir Gaspard was determined to carry on the reform in that direction, by leasing out all one-storied houses, then all other urban property capable of improvement; in the full conviction that the example would have been gradually followed by private owners and builders without *compulsion or the imposition of Legislative enactments*. But the usual Government advisers could ill brook my interference in a social and administrative measure of a high order; besides, I had then had a certain share in the abolition of the Public Works Department, which, as managed at the time, was proving ruinous to the country. Moreover, most of those gentlemen were occupying Government property at a very moderate annual rent; but, above all, they instinctively felt the tendency this arrangement foreshadowed; that of depriving them of the cherished and powerful weapon by which they could domineer over all classes of the population; since they virtually had the power of selling, purchasing, exchanging, or otherwise disposing of the national property, without consulting the

* See Appendix A.

† See Appendix B.

‡ See Appendix C.

Government Council; and, of administering, besides, a revenue of about £40,000; therefore, they made use of all available means to dissuade His Excellency from following a scheme of reform already initiated in that direction, and succeeded at last in prevailing upon him to abandon it.* True, they could not call in their support any but flimsy and ill founded arguments, but these proved sufficient to paralyze the beneficial resolve of a Governor, yet inexperienced in detecting the intrigues so common in government circles here. Whereas, animated by their own personal interests, the Government advisers have sacrificed the health and lives of many; kept the working class from obtaining employment for a series of years; and in various other ways inflicted incalculable harm upon this country.

The time was then manifestly favourable to my design, since a new valuation of all public property was then being made and money was plentiful in the island, as the savings of the population had not yet found their way abroad, where they have, since that time, been invested in foreign government securities.

Sir Gaspard's resolution to continue to carry on the work of reform in all the town property belonging to the Crown is fully born out by the Collector of Land Revenue's Notice of October 1861,† and is confirmed in Messrs. Sutherland and Galton's Report.‡

Governor Le Marchant was decidedly resolved upon having the government house property, either remodelled or reconstructed, and new houses built; by creating a new town or suburb at the head of the new harbour extension, by simply encouraging private enterprize.§ This laudable movement met with a ready and cordial response from a well known and much respected individual in the island, who, actuated by a

* Sir Penrose Julyan in his Report to the Colonial Minister "On the Civil Establishments of Malta,"—1879—recommends the retention, in some way, of this political administrative engine. Without, however, giving well grounded reasons for it, he says, at paragraph 55 "I cannot recommend that, as a rule, Government property should be either sold or let on perpetual lease." And in paragraph 53 he writes:—"As the great landlord of the Colony, the Government secures an influence which is not without its advantages at present, and which may be of far more importance in the future." Now it is exactly this that the Maltese strongly object to; notwithstanding their unimpeachable loyalty, they are at the same time jealous of their rights and the declared enemies of all arbitrary power, official intrigue and favouritism.

† Vide Appendix D. ‡ Vide Appendix E. § Vide Appendix D. E.

true spirit of patriotism and progress, conceived the idea of raising an establishment for the working of stone, timber and iron by steam power; and, by the aid of a partner, he was enabled to carry the principal part of the same into effect, by way of facilitating the execution of the grand scheme projected by His Excellency. In this enterprise which, for a place like Malta, had a national, more than a private, character, a sum of about £ 30,000 was invested.

Sir Gaspard having, as already stated, been dissuaded from pursuing that scheme of improved buildings, government passed on to the revaluation of all the property under its administration, committing the charge to trustworthy gentlemen, but totally ignorant of the matter. These were the late Government Notary, and Dr. G. B. Trapani (now C.M.G.) then Assistant in the Chief Secretary's Office. A large portion of the government property was in consequence granted on a short or in perpetual lease, sold or exchanged with serious loss to the treasury, without putting in the Contracts any condition or restriction whatever with regard to health. In consequence of this culpable neglect, specimens of the worst description of dwellings are nowadays to be seen constructed on Government property, condemned by Dr. Sutherland and described by the Sanitary Engineer in the War Office—Mr. Ed. Roberts—"as if they were expressly contrived for the purpose of generating fever and shortening human life; worse planned dwellings, or dwellings more wanting in sanitary requirements, I cannot possibly conceive." *

Confident, however, in my belief that "Improved Dwellings" was the most essential factor in sanitary reform, and trusting that government would at last yield to the just reasons and convenience which my former proposal offered on the face of it, I made another experiment of model healthy dwellings in 1860, for a better class of inhabitants on a government site, although granted for only 99 years' lease, and at £58. 10. 0. while, till 1857, the annual rent payment was only £35; and without being bound by any condition or restriction in the contract with regard to health, I introduced in the building, new from the foundations, all the required sanitary improvements.

Such a neglect on the part of the government was fully commented upon by persons of intelligence and who took great interest in the

* Mr. Edward Roberts to Dr. C. Casolani—1864. Reported at p. 52 of pamphlet quoted "Suggestions &c. 1867."

matter. The hon. Mr. Barbaro, struck by the losses entailed on the Treasury by such a neglect and availing himself of the occasion offered by the Collector of Land Revenue, on the latter asking for a vote of £1,000 in the Council (sitting of Feb. 1875), to supply glazed pipes in some government houses, Mr. Barbaro put the question to the Collector—why the government did not lay down clauses in the agreements for leases, especially if long or perpetual, binding the lessees or grantees to introduce all measures and appliances that the Hygiene of the Dwelling prescribes? The Crown Advocate, becoming aware that he was to blame for this oversight rather than anybody else, essayed some lame excuses, easily upset and laid bare. And when later on, the government granted, on a 99 years' lease, an old house in Strada Cristoforo, which was converted into one of the worst and most unhealthy common dwelling-houses, everybody will remember how the hon. Mr. Savona did then cast blame upon the government for not taking steps to prevent such abominable perpetrations on the public property, whilst the government showed itself so very solicitous for the health of the inhabitants, as not to grudge enormous sums for Drainage and other sanitary measures. To which the Collector replied saying that, "government could not insert in the Contracts such conditions and restrictions, as there was no sanitary Building Act yet, giving it power to do so."

But, by the Acting Collector of Land Revenue's Notice of the 9th September 1879, and list of conditions in reference thereto, for the granting on a 99 years' lease of a site in Strada Mezzodì and Strada Genio, government solemnly disowned the Crown Advocate's far fetched excuses and legal quibbles and the futile and ill-grounded reasons then given by the hon. Collector. Government has at last thus recognized the justness and necessity of adopting my suggestions in that direction. In fact, the government, notwithstanding the non-existence yet of any law on the subject, had the power in September 1879, to impose such restrictions in the Contracts upon the lease holders, as to prohibit the erection of *Mezzaninos* and separate rooms opening on the streets, of shops, stables, public ovens, and even of dwelling-houses let out into small tenements. There is moreover the following clause in the Contract :—

"In the construction of the new building the lessee is to carry out the instructions which will be given by the Chief Police Physician concerning the sanitary condition of these buildings; and he is to *abide by such regulations*

"as the said officer may think fit to make to that effect." (The italics are mine.)

Now there can be no escape out of the dilemma ; either the Government was aware of its right to impose conditions and restrictions with regard to health upon lessees and grantees and conscious of their importance—or not. If the first, it lays itself open to the charge of gross neglect, although it assumes now-a-days an immense display of zeal. If it plead ignorance, how can it defend itself from being taxed with incapacity ?

From the foregoing facts it is easy to solve the mystery how Government until very recently quite heedless and unconcerned, now, however, it appears seized by a fit of zeal. Having made of the "Sanitary Question" a political one, it felt itself bound to persistently thwart, and, by all kinds of opposition to obstruct useful measures and efficient reforms to the loss of the Treasury and injury of the population, especially of the working classes and poor, who however constrained by their slender means or by want to live in small habitations, it is disgraceful for a christian population and wise government to drive them into unhealthy, narrow and dingy lodgings—such as underground cellars, overcrowded common lodging-houses, or in musty and unclean dwellings at the *Manderaggio*, housed in a manner destructive at once to good morals and social habits, debasing them as human beings, and at the same time sowing the seeds of wide spread fever and pestilence.* Much more when the fact is taken into consideration,

* Those who perused the recent very interesting publication—"CONDITION OF MALTA" by Samuel Plimsoll, M.P. (London 1879)—had occasion to form a correct idea of the most unsanitary condition of our common Dwelling Houses and *Manderaggio*, justly considered by that noble hearted gentleman, distinguished for his charitable feelings towards the oppressed, "as a public scandal in a town under British dominion." But we were not a little surprised to find that the Chief Secretary to Government has, at last, arrived exactly to the same conclusions, and by a solemn declaration in the Government Council done justice to that able politician's considerations on the subject. The Chief Secretary, in bringing forward his Financial Statement for 1881, at the Sitting of the 11th February 1880, said:—"When I read Mr. Plimsoll's pamphlet, I thought his description of the *Manderaggio* was a gross exaggeration, and not having been there for nearly twenty years! in which occasion I visited it with Sir John Gaspard Le Marchant, I determined to judge for myself, and revisited it in company with the President of this Council, not many days ago, and I found enough to satisfy me that if no doubt still somewhat exaggerated and highly coloured Mr. Plimsoll had ~~something wanting~~ that fearful picture with only too correct a pencil." (The Italics are mine.)

that Government was for many years possessed of the means to remedy these evils: as it can even now do, without any drain on the Treasury or the imposition of new taxes.

If this be so, it was but natural for the intelligent portion of the population to have evinced great surprise and distress on hearing the Chief Secretary to Government repeating the following verses recited by Mrs. Norton in the "Lady of La Grange"—while delivering his financial Statement for 1872, and laying same on the table of the Government Council:—

"What have the poor done? who instead of these

"Suffer in foulest rag, each dire disease,

"Creep on the earth and lean against the stones

"While some disjuncting torture racks their bones

"And groan and grope, throughout the weary night

"Denied the rich man's easy luxury—light!"

And again in a pamphlet, published by the same at the public expense and widely circulated in 1874, as if he were trifling with the people on a subject so painful and serious, he quoted Lord Derby's speech delivered at Bootle in August, 1873, and repeating his Lordship's words, said:—

"We want here plenty of light and plenty of air; we want good and cleanly houses for our working men... In fact we ought to be living amongst a population, not squalid with dirt, not decimated by disease, but healthy in body and mind, living in houses which make self respect possible."

And quoting Professor Cornfield, he concluded with an appeal to his readers "That it is to better constructed houses for the working classes &c. that we must look for an amelioration in these respects"—and a declaration was by him made which we leave our readers to judge how far it is in conformity with truth, viz.:—

"That in this grave Sanitary question the paternal government has not been idly standing by and looking on... it has been active and energetic... and in fact has done all that a Government could do... in doing away with acknowledged defects!"*

But the truth is that by the paternal Malta Government no practically useful measures were designed, nothing was done deserving even a passing notice; but it can lay claim, by listening to bad advice and suffering itself to be misled, to the responsibility of having made

* "Remarks upon the Drainage and Sewage of Valletta and the Three Cities"—Malta, August 1874.

the very name of reform odious, of having alarmed the people by ruinous expenses and Laws and Regulations superfluous and repulsive, and of having by a repetition of new errors brought Sanitary Science into utter disrepute. It is indeed a matter for surprise how could the paternal local Government, after bringing about the lamentable state this country is in, have the courage to make the Imperial Government believe, that the Maltese are strongly opposed to every Sanitary measure and reform, being steeped in the deepest ignorance; how could it be justified in bringing into disgrace, before the eyes of the Colonial Secretary, the name of those who, although scornfully unheeded, at great personal inconvenience have repeatedly promoted really practical and useful measures calculated to remove old standing evils and abuses?

That the two experimental building-schemes above alluded to should have sufficed to enlighten our paternal Government would clearly appear after the perusal of the favourable, eye flattering, opinion passed by renowned hygienists and Sanitary Engineers. After giving a detailed account of the internal arrangements and economy of the '*Camerata*' Mr. Roberts proceeds thus:—"All this indicate and attention to those principles of Sanitary science which are now so widely admitted as essential to health and life." In reference to the Houses in Strada Mezzodì and Strada Scozzese, he said:—"You have succeeded very ingeniously to get through ventilation for every room, and in securing what in England and Scotland would be considered very good domestic arrangements." * While speaking of the sanitary condition of towns and villages, Dr. Sutherland stated in his report:—

"What is wanted is a good rebuilding plan of the Cities, shewing a healthy arrangement of blocks and also of rooms of houses, allowing a free passage of air from the sea or country through streets, courts, or rooms. 'There are one or two good recent examples of improvements of this class. There is a very large new block of Model Dwelling-Houses, called '*Camerata*,' built by the late Bishop Casolani † partly to let to working people, partly as an example for other builders. The construction of the '*Camerata*' and of some other houses' (those of Dr. Casolani above mentioned) 'which have been improved on similar principles, shows the general outline suited for houses built in Courts.' " ‡

* Mr. Roberts to Dr. Casolani (already quoted).

† It may be interesting to mention that this building which is constructed of solid stone (after my design and under my immediate direction), is the first instance in which the stone has been hewn, and the mouldings turned entirely by machinery.

‡ Dr. Sutherland's Report 1867 (quoted).

Dr. Sutherland proceeds to show how much the health of Her Majesty's Troops depends on the purity of air around them and condition of the dwellings of the civil population:—"A strong reason—he says—for urging forward the various structural improvements required for the garrison towns is afforded by the well known fact that the health of the troops is so closely connected with the state of health of the civil population in their vicinity that Barracks can never be safe from invasions of epidemic diseases so long as districts, either in town or country, in which barracks happen to be placed, are liable to suffer from such diseases."

Reverting to the houses abovementioned built by me, Professor Pisani, Chief Surgeon of the Charitable Institutions and member of the Board of Health, declared in a paper to my address:—

"I consider them Model Houses in every respect. They are in a healthy locality, well ventilated and drained, and very convenient. I have attended on families residing in them and consequently I know them very well and can certify to the good Sanitary arrangements of the houses and their salubrity, from personal experience."*

Dr. Gulia, the talented editor of the *Barth, Medical Gazette*—member of the Paris Academy of Practical Medicine and other Scientific Societies—now Professor of Natural Sciences and member of the Board of Health—expressed the same opinion of said houses:—

"Those Dwellings—he said—are *well constructed* and cannot be otherwise than healthy: they have abundant light with a free circulation of air, both which are easily obtainable; rapid, easy, and complete removal of the excreta from the W. C. has been combined. The water-supply is excellent. I am sorry to say that to these hygienic conditions, little attention, generally speaking, is paid in the construction of Maltese houses."† (I should say, more especially in those that have lately been built on government property.)

Notwithstanding these authoritative opinions, besides the favourable verdict by persons of responsibility holding high positions in the Army and Navy, it did not seem worth the while of the paternal government to visit or to take official notice of these model "Improved Dwellings;" while Dr. Sutherland and Capt. Galton fully persuaded that this government could not but follow the movement, stated in their Report aforementioned, to the Minister:—"The construction of improved dwellings was under this government's consideration." "The

* Professor Pisani, M.D., to Dr. Casolani 1st October 1873.

† Dr. Gulia to Dr. Casolani 22nd October 1873.

improved state of Valletta is likely to progress under the present enlightened system &c. Dwellings for the poor on an improved plan are being built.”—(viz. the *Camerata*.) And, as already stated, Dr. Sutherland added later on :—“*There are one or two good recent examples, &c.*”

Yet it is notorious to all, that the government, since Governor Le Marchant’s administration, has done nothing to encourage, but on the contrary used all means to discountenance similar undertakings ; and some government officials went out of their way spreading rumours that those model buildings were unhealthy ! which rumours were repeated in evidence given before the second Hall of Her Majesty’s Civil Court. The very able Sanitary Engineer Mr. Roberts, however, actuated by generous feelings wrote in a very different strain about those very buildings, in a letter which was referred to the proper authorities in 1864 and published in 1867 :—“I sincerely hope—he said—the persons for whom this place was built, will eagerly avail themselves of the advantage it possesses, and that you will be ultimately repaid, not only in a pecuniary way, but in the satisfaction of seeing your efforts of building on enlightened principles fully appreciated.”*

But in expressing his good wishes to me that gentleman was not aware of the practices observed by the government advisers—and how we are governed. That model block of buildings designed to be let out into commodious small tenements, erected by private means and enterprise, utterly ignored ; a practical scheme of Domestic architectural reform of easy and prompt execution. without entailing new burdens to the treasury or any sacrifice to private interests, scornfully scouted, and, the author thereof overthrown, behold now the Crown Advocate stepping in with a building-plan of his own making, of which it is far from us to dispute him the paternity, the basis and particulars of which are embodied in the Draft Ordinance accompanying the letter addressed by him to the Chief Secretary, on the 14th February, to be submitted to H. E. the Governor ; (the same was laid ou the Council table on May 3rd, 1876.)

The Crown Advocate’s Scheme, as he himself later explained, was to consist, “in building some Model Dwelling-Houses for the working classes, as a substitute for existing Common Dwelling-Houses, *case di affittavoli* (Carreye)—being indispensable in a sanitary sense for the

* Mr. Roberts, C.E., to Dr. Casolani 1864, and Pamphlet “Suggestions &c.” 1867 (quoted).

poor classes, and in an hygienic sense for the population at large.”* But when that Draft Ordinance “*To amend the Police laws in reference to Sanitary matters*” was, on the 5th September, transmitted to the Earl of Carnarvon, then Colonial Minister, by His Excellency Governor Straubenzee, and by the latter referred to Dr. Sutherland for an opinion—a Sanitarian who, in the mind of both local and Imperial authorities, was the best judge in the matter—that distinguished gentleman in the 48th Art. Sec. 11 of his “Remarks on the Draft Ordinance” aforesaid, took occasion to observe that:—there existed already in Valletta a Dwelling-house which might serve well as a Model for ‘through ventilation,’ ‘proportion of light’ and ‘distance of opposite walls,’ ‘internal arrangement of building,’ manner of avoiding ‘back to back houses’ &c.—and, with no little disgust to the Crown Advocate, concluded:—“The Construction of the Camerata shows the principle.”

As already observed, Sir Gaspard Le Marchant impressed by the great evils “of an undue aggregation in Towns” contemplated in 1858-61—the construction of a ‘New Suburb’ for the labouring classes, in connexion with the harbour extension, “to be promoted by private enterprise and encouraged by the Government.”† Having been dissuaded by his official advisers, that salutary measure was set aside. However, I took upon myself to suggest in December 1866 to Sir H. Storks to promote and encourage the formation of a new-Town, well removed from the fortifications, consisting of houses suitable to the requirements of the different classes of the population and built under the most stringent regulations as to sanitary requirements. A Memorandum and Plans relative thereto were laid before His Excellency on 11th December, 1866, (at 11A., Albany, Piccadilly) and the scheme was published in 1867, submitted to the Authorities and widely circulated.‡ His Excellency was in London then on his return from Jamaica and therefore free from local influences which have invariably proved, since 1858, inimical to me, and have eventually wrought my ruin. Unfortunately, although Sir Henry was determined to adopt my scheme, His Excellency left the Island before my return. I also proposed to Governor Grant, in 1870, another plan for the creation of a Suburb, or part of a Model Town, on the *Tashbiesh* lands overlooking the Misida Creek. Both plans are still before the

* Translated from the *Oggi* of the 27th March 1877 (a weekly paper) and as reproduced in the *Malta Times* of July 8, 1877 communicated by the Crown Advocate before a Stenographer in the Council was yet appointed.

† Vide Appendix E.

‡ “Suggestions &c.” (phamphlet quoted).

Government here,* which at the time I could have carried into effect, but for the lack of encouragement from the paternal Government of Malta; and would surely have far better answered the purpose than the cottages devised by the Crown Advocate for harbouring the working and poor classes, to be built in the Suburb *Hamroon* or *Samra* at the cost of the public treasury—according to his own proposal and plans laid on the table of the Council last session, now before the Council. Perhaps the Crown Advocate in his eagerness to wrest the glory of reformer in Domestic Architecture from others, finds it necessary to run down private undertakings.† But he reckoned for nothing, besides the cost to the treasury, how ill becomes a Government to embark on speculations and building ventures. Such interference and meddling is certainly calculated to paralyze private action and to check useful progress. He likewise overlooked a well known social requirement, that the working classes and the poor must necessarily live near the well-to-do classes from whom they obtain employment and get a living;

* A detailed description, with accompanying maps and a complete set of plans and designs of those building-schemes were also forwarded by me to the Colonial Secretary on the 12th February 1878 and remain still under the consideration of H. M.'s Government in that Department; But unfortunately the Crown Advocate wrote the Despatch that accompanied the same.

† On the 23rd of January 1880, the Crown Advocate proposed that dwellings for the labouring classes and poor should be built at the public expense and administered by Government. He was against inviting capitalists to "erect them for their own benefit:" although under the supervision of the proper authority.—He added—"It has been said that prizes for drawings of 'Model Dwellings for the 'poor' were offered some time ago; that plans were received; and that a certain "block of buildings, on the site formerly covered by the *Camerata*, was erected "on an approved plan. I remember, however, that of the numerous drawings "obtained none was entirely accepted by the party who erected the building, "and the Government was finally pressed by that party to permit even deviations from the plan that had been settled. Then as soon as that building was "completed, the owner looked for a purchaser and he sold it away."—These unjust and erroneous remarks of Sir Adrian Dingli called forth a pithy article in *Public Opinion* (edited by the Hon'ble S. Savona) (a). With reference to the plan, it was an original plan made by me, considered, in every respect, superior to any of those to which prizes had been awarded by the government; and if considered as a deviation from same, surely any alteration effected was in the good direction—as Dr. Sutherland and Capt. Galton observe in their Report.—(Appendix E.)

(a) Vide Appendix F.

hence his projected dwelling-houses "could never serve as a substitute for existing common "Dwelling-houses," as he fondly imagines—whilst my proposals above described would by this time, had they not been by him opposed, have proved the only means of enabling the Government to remove and vacate the *Manderaggio*, and remedy the serious evil of overcrowding, animadverted upon by Dr. Sutherland and Capt. Galton: justly lamented also by the Medical Commission appointed in 1874, by His Excellency.*

To resume, it is refreshing to find, in the Collector of Land Revenue's Notice of September 1879,—although tardy, costly, and injurious to the country, how the government can, is willing, and is determined, henceforth, upon imposing conditions and restrictions in the contracts of its lessees and grantees with regard to health. It is however surprising that it carries now its zeal so far beyond the bounds of moderation demanded alike by hygienic science, and by justice to public and private interests, that neither I nor others equally jealous of the rights of property, could conscientiously approve all those provisions of the new sanitary and Building Act. Nevertheless, this lets in a ray of hope that the Crown Advocate will at last also advise the government to carry into effect the very necessary and important reform in domestic architecture, in accordance with the complete sanitary building scheme recommended since 1857† and partially carried out since 1858 by private parties; for, most assuredly, it would be more conducive, in socially benefiting the country at large and economically advantageous to the Government, if the latter were to lease out temporarily or perpetually all the public property, especially that capable of remunerative improvement, at the above mentioned conditions, rather than adopt the recommendations of Sir P. Julyan's Report, concerning the way of administering public property. There can be no doubt that the question of overcrowding and the subject of the present aggregation of towns deserves the early and earnest attention of the Government, therefore every effort should be made to diminish its injurious effects.

Having, I hope, sufficiently proved that improved dwellings should

* "Overcrowding is the natural fruit of a redundant population,"—they said in their Report—"and brings with it, its train of attendant evils. The tendency everywhere in individuals to attach themselves to communities leads to an undue aggregation which results from it."

† "Suggestions &c." pamphlet cited.

take precedence to any other measure or sanitary reform, and that Government is in duty bound to take the initiative, by aiding and encouraging private enterprise in that direction, I shall proceed to explain my views on the other most important subject, "Drainage."

V.

DRAINAGE.

The primary object of every system of Town Drainage is a sanitary one, and involves the continuous and complete removal of all sewage matter from human habitations to a place where it can be disposed of without prejudice to health : producing at the same time, if possible, as manure, some income in aid of the expense incurred in its removal. Hygiene prescribes this and, since the times of Moses, it was recommended in the Sacred Scriptures. We read in the Dentoron: Chap. XIII., v. 12 :—"Thow shall have a place without the camp where thou mayst go for the necessities of nature." Surely, such a provision would meet no opposition in Malta ; but what the people here are decidedly against, is, that a reformed system of drainage with its ventilators should be constructed that, besides the unnecessary expense thereby entailed, has, by experience, been found inefficient, and sometimes even injurious to the public health. Every intelligent Maltese would uphold instead a consistent, practical and efficacious system, as well as other measures that are sure to improve the sanitary condition of these islands, provided no money is expended for that object, without the concurrence of the representatives of the people in Council, or, against Dr. Sutherland's recommendations, viz: without "the advice of a Surveyor practically acquainted with sanitary engineering, and with the most efficient and economical methods of executing public health works, of water-supply, sewerage, drainage in towns, villages and houses, and who could aid in the due consideration of improved building plans &c."* Besides, in my thinking, as I had already occasion to impress on the government and the public some years ago, "no general and permanent improvement in the Drainage or other sanitary reform whatever in the condition of these islands can be effected without the earnest and thorough cooperation of the country."† Mr. Disraeli—now Earl Beaconsfield—in an address delivered at Manchester, on the 4th April 1872, is reported to

* Report "on the Sanitary Condition of Malta &c." 1867, (quoted.)

† Dr. Casolani to *Public Opinion* 6th January 1872.

have said in reference to the same subject:—"I cannot impress on you too strongly my conviction of the importance of the legislature and society uniting together in the promotion of sanitary measures and improvements." But here the government do not care to conciliate the wishes and aspirations of the people by the sacrifice of a single prejudice; they will not allow any one to point out evils in the government or propose satisfactory remedies; nor do they show the least regard for the opinion of their representatives; so as without consulting them, government originated and determined upon the system of Town drainage to be adopted in preference to any other, and even refused to the elected members the appointment of a select Committee asked for on the 21st December 1877 "in order to examine that scheme in all its parts, scientific, economical and social, and report upon the same." And the government indifferent to that motion, however so fair and reasonable, on the 10th March 1879 passed, by the sole official majority the scandalous vote, causing general indignation; which naturally led the people to hold the Meeting of the 2nd July and make the Appeal to the British Parliament, asking:—"that the vote passed against the unanimous opposition of the Elected Members, for remodeling the Drainage be revoked."

But in the populated centres of the United Kingdom and different towns of Europe that system of drainage was not always found convenient or adapted, wherefore recourse is often had by the Municipalities to various other methods more convenient and practical that are sanctioned by science and experience. Consequently our government was not justified in casting discredit on the Elected Members, and accusing them as being averse to Drainage and Sanitary reforms in general, only because they insisted that an opportunity should be afforded them for carefully considering the extravagant expensive work originated and enjoined by the Government, before they could arrive to a conscientious and definite decision on the propriety of having that system carried into effect; and if found inconvenient or impracticable, surely, they would have examined and submitted to the Government some other method for the removal of Sewage from the towns; since there can be no doubt that the existing conduits cut in the rock are nothing more but prolonged cesspools, not regular drains that can admit the carriage of sewage by water.

Considering that in the various inhabited centres of Europe different methods are put to use for removing sewage to distant places,

it might be useful for us to examine some of these with a view to determine upon that which might be better suited for our wants and more convenient to our interests.

There are different Governments and Municipal Bodies that with great advantage to the people have adopted various methods of Cesspits, the working of which is obtained without diffusion of offensive odour, or inconvenience caused to the inhabitants. The best form of Cesspits is considered to be that in use at Milan and Paris, where sewage matter is made to flow into special receptacles, air and water tight, whence it is removed by carts provided with vacuum *reservoirs* into which the sewage is drawn through pipes, for conveyance to the neighbouring country.

There are towns where the whole sewage matter and house-refuse, both solid and liquid, mixed with the rainfall and subsoil water, are made to run into the sea; where, if the overflows happen to have their outlets into narrow creeks, as in Malta, they cannot fail to become a nuisance to inhabitants of the houses around and crews of ships, and be productive of injury to health; while in other countries it is found safer and more convenient to adopt the "separate system" consisting of a double system of drains; one for the rain-fall and torrents that are discharged in the sea, the other for the whole town-sewage, which, conveyed into the country, is uniformly distributed as fertilizing matter by the process of irrigation over the land, in a state ready of being assimilated by the plant, "Liquid Manure." By this process, it appears, a larger number of crops is got in a given period than could be obtained under any process of "Dry-manuring."

For distributing sewage in a liquid state various methods are in use; amongst others:—1st is the hose and jet system; 2nd the sub-irrigation, or distribution of the fluid below the surface of the ground; 3rd the surface channels; 4th total submersion.

Hence it appears that there are many countries where great value is placed in the mass of human excreta, owing to their distribution being now rendered absolutely necessary for manuring land; wherefore various methods are often seen adopted with success for conveniently disposing of sewage matter, while obtaining, together with the sanitary object, some profit to meet the expense and at the same time richly manuring the soil: thereby increasing the production of the fields—consisting some in carrying away the excreta, together with all animal substances, to the earth; others, on the contrary, in carrying the earth to the excreta and house refuse.

With so many methods and different systems of drainage before our eyes, the manner in which our Government determined upon carrying its darling scheme into effect, and why it was considered as the best for this country was, in my thinking, rather inconsiderate; whilst the unconstitutional and impolitic course pursued on this occasion, the malignant accusations and offended national dignity, render necessary that we should remember that the British Constitution recognizes the principle of the sovereignty of the People, and national resistance is its main foundation. We read in Lord Brougham's *BRITISH CONSTITUTION*—"In surveying in what the Constitution of England consists and the principle on which it rests, 'the sacred right of resistance' is first in order." Let us therefore unite in resisting the vote for Drainage of the fortified Towns, which, although passed on the 10th of March 1879, the works for carrying it out have not yet been commenced in Valletta and Floriana, nor has the Ordinance respecting Sewer Ventilators been enforced. Let us, therefore, respectfully, but energetically, request the Colonial Minister, that before proceeding with works of any description in the Capital and Suburb Vilhena, the relative merit of each of the various methods of drainage in progress or adopted by different Governments and Municipalities in foreign countries, be taken into consideration, by inviting a distinguished sanitarian able to grapple with the question, to visit these islands and remain here for all the time which may be necessary for carrying out that scheme which would eventually be deemed more than any other practical and convenient for our country. Meanwhile it may be sufficient for our object to examine, in some way closely, the two rival systems distinguished by Engineers with the name of "Dry method" and "Water System;" and I premise by declaring that, in my thinking, the former would meet much better the requirements of this country and our local circumstances, whereas with less difficulty, great advantage and small, or possibly no expense whatever, the same might be adopted not only in the fortified but also in unfortified towns, as well as in every village all over Malta and Gozo.

I. DRY METHOD.

The "Dry-Method" involves a double system of Drainage, one for human excreta—"Earth Closets"—and animal substances, the other for the discharge of liquid refuse, from the chamber, the bath, the

kitchen &c. The way of proceeding in carrying into execution this system is more simple than many may imagine. Every dwelling is to be provided with a special privy or receptacle having a box set over it, where instead of water dry earth or sifted ashes are allowed to fall over the feces and urine: the quantity required, according to the best authorities, being $1\frac{1}{4}$ lb., of earth daily per head. Human excreta so received into a pan and immediately covered with earth, are rendered by its action perfectly innocuous and inodorous. The power of earth to act as a disinfecting agent, may be traced to Moses. The injunction for it in Deuteron: Ch. XXIII, v. 13, was a law of a sanitary preeaution:—"When thou sittest down—he said—Thou shalt dig round about you, and with the earth that is dug up thou shalt cover that which thou art eased of." The excreta so cured can without emitting any injurious vapours, be removed daily or at short intervals by special carts and exchanged with dry earth, to be imported and distributed as a substitute for the matter already exported, to be usefully employed as manure.

House drains and sewers must, besides, exist in every place where habitations are congregated together, for the discharge of liquid refuse from the chambers, the bath, the kitchen, wash-houses, rain-fall, torrents &c., independently of the excrements of the closet and other animal substances in the Dwelling, which form in reality but a small proportion of the entire refuse of a town. A regular incline should be given to the present conduits that are cut in the rock, which, when properly plastered with Portland cement might, with small expense, be altered and used for the simple conveyance of the foul waters mentioned above, which mixed in their course with surface and rain water and of coach-houses &c. would flow into the sea without injury to health.

The question of Earth-Closets is so important and involves interests so very great that it would be worth submitting without delay to the test of an experiment. This may be done at very little expense. Let the Government select a portion of Valletta for the purpose, and interdict the householders from throwing anything but human excreta and animal refuse into the 'Earth Closets' or receptacles; or, from disposing of the same in any other way; to be, as stated above, carried thence, by special carts beyond the building land; communicating only with sewers the house slops and foul and other waters already mentioned.

Government, therefore, should thus take the initiative and undertake in the experiment the cost of the personnel employed in the service of

this method of drainage, the management, and perhaps engage to supply also the *Earth-Closets*. But I foresee that, after such an experiment properly conducted, taking a just account of the great advantages that might be derived compared with the expense, the same will, in every respect, found to be very convenient and adapted. And when the present great dearth of fertilizing matter is duly considered and their daily increasing cost, (particularly the fact that human excreta are nowadays universally admitted to be a manure possessing far greater fertilizing matter than ordinary manure containing larger quantities of mineral salts very useful for the nourishment of plants) then a speculative Company would soon be formed to work the various districts allotted to it under the full conviction that by appropriating to itself all the house refuse it would be done with a handsome profit; with at least the saving to the householders of any expense or trouble.

Professor Nicolas Zammit in the concluding part of his valuable work on "Drainage, its relation with life, Sanitation and Economy," commended, amongst others, by the distinguished Italian sanitarian Mantegazza, after giving his deductions on the advantages derivable from the application of the "Joint-System" of liquid and solid sewage for the irrigation of our lands, "liquid manure," briefly mentions also the method in question on which he observes :—

"The Dry method with a natural and gratuitous disinfection would be an absolute recision and a definite solution of the Sanitary problem for our towns. No measure is more secure and superior to any objection than that of bringing to an end all putrefactions at their origin by removing the matter in a recent state so as to become extinguished by the most efficacious and gratuitous disinfectant."

And in support of this he quotes from Dr. Parkes' work on practical Hygiene (Sewage—p. 227) "If this (Dry Method) can be done effectually, it is the best plan." Dr. Zammit concludes his remarks on the subject by saying that :—"The practical working of this wholesome measure is very simple and may be undertaken without any delay." And this is the last word coming from an active and acute mind of a man who took great pains in studying the important subject with the intent of benefiting his country.

Having, I believe, sufficiently occupied your time on the Dry Method, I shall proceed by calling your attentive consideration to the other rival system.

II. WATER SYSTEM.

The "Water Carriage" system of drainage is undoubtedly the cheapest as well as the most convenient form of removing sewage from the thickly populated towns of the United Kingdom and large Cities in other countries where lakes and rivers abound and copious and permanent supplies of water can be obtained by simple gravitation on the top of houses, without any inconvenience and at a small cost. The adaptability, however, of that system in our towns offers many difficulties and inconveniences both sanitary and economical as well as technical in its operation, the most serious, as Eugenius Fazio, Secretary to the Statistical and Sanitary Administration of Naples, so properly observes in reference to that town:—

"Is when water is deficient. Considering the question under the first view, that system would require an enormous expense and be of great danger—according to the opinion of the celebrated Professor Cantani—*dal sollevamento di suolo già infiltrato di materie luride; ;* "

And Dr. Parkes' opinion with regard to the relative merit of the two rival systems, would appear conclusive—with respect to these islands at least:—

"The use of sewers or removal by water, is in many cases impracticable. A fall cannot be obtained or there is insufficient water. Then either the excreta will accumulate about houses, or must be removed daily, or periodically, various plans are in use. Dried surface earth (marly and clay earths are the best) has been strongly recommended for this purpose. The dry system is coming into general use in India." *

The subject deserves the attentive consideration of both the local and Imperial Government before proceeding further in their drainage works considering the very high authority from whom that opinion emanates.

Since 1858 our government was intent on introducing the water-carriage system of drainage in the fortified towns. This was subsequently confirmed in 1861, during the enquiry with which Dr. Sutherland and Capt. Galton were entrusted. In recommending Improved Dwellings, as a first step towards a Sanitary reform I had called Governor Le Marchant's attention to the very bad condition of the Drainage, particularly to that of Dwellings, and I then maintained as I now maintain, that before initiating any system of drainage by the use of water as a carrier of sewage matter, it would be for the Government to secure first, a permanent abundant supply of fresh water, since once the question of water was solved the problem of drainage would easily be solved also.

* Parkes' Practical Hygiene—Sewerage p. 327.

That method of drainage, as already stated, is only practicable when there is an abundant supply that can be depended upon, brought on the terraces of houses by gravitation or by means of machinery, indispensable for flushing the house drains in a manner to render impossible the accumulation and adherence of the excreta and animal substances to the same and carry the whole refuse matter in the public sewer. These obstructions are of frequent occurrence here; a circumstance which I often had occasion to point out both to the government and the public. Dr. Adams the geologist and Mr. Chas. Andrews C.E., Capt. Galton and Dr. Sutherland, all have strongly maintained before our Government, that, unless there exists a copious quantity of water supplied at high pressure according to modern system, the method of Drainage then contemplated by Government would turn into a complete failure. At page 13 of Dr. Sutherland and Capt. Galton's quoted Report we find a timely admonition made (since 1861) to the local Authorities on this important subject by those distinguished gentlemen:—

"It is indispensably necessary—they say—that water-supply and drainage should be connected as part of one system; without this any form of covered drain is nothing more but a cesspool, and it would be better for the public health that there should be no underground drains unless there is *sufficient water laid on to keep them free of deposit.*" And again Dr. Sutherland in 1867 wrote:—"In our Report Captain Galton and I pointed out that a better method of water-supply was urgently required. The water supply requires to be increased and the existing system of distribution must be *completely changed.* There is no reason why the most recent improvements in water distribution should not be applied *to every house within the garrison.* Looking at the question simply from the side of the public health, I consider this improvement to be imperatively required." (The italics are mine.)

Therefore the accomplishment of that system of sewage offered at the time very great difficulties which the Government did not succeed as yet to overcome.

The water question fills a very melancholy page in the history of Malta, more especially when we consider that the existing supply is nothing more than the aggregate quantity of water of nearly all the springs in the island robbed from agriculture with serious detriment and injury to the production of land. But if it be evident beyond the shadow of doubt that water does not exist—for besides the heavy sacrifices incurred in obtaining it, and the unfair system of its distribution* the very scarcity for the immediate domestic requirements of

* The garrison stationed in the fortified towns lays claim to one full third

the inhabitants of the fortified towns has been a constant and just cause for complaint—it is quite inconceivable how government intends to effect the constant complete removal of sewage by the use of water as a carrier.

Experience teaches us that these islands are liable to periodical returns of droughts, not unfrequently, very protracted also. From 1838 to 1841 the island suffered immensely from a similar calamity of scarcity, when the first shower of any consequence during three years fell about the beginning of June 1841, and in the four following years it very seldom rained; so much so that the springs supplying the Wignacourt Aqueduct dwindled down to a degree that the allowance absolutely necessary of water to the inhabitants had to be curtailed; and then it was that the suggestion of the Collector (Sir V. Casolani, G.C.M.G.) had to be acted upon, by turning to use the water derived from wells at the Marsa for the supply of the Three Cities, and Merchant Shipping.

To such a melancholy state the country was reduced when Governor Bouverie, advised by the said Collector of Land Revenue, determined upon constructing a new aqueduct* by robbing three more springs from agriculture, viz: "San Giorgio," "Annunziata," and "Tal Fauara," (since called Bouverie's, or Fauara, aqueduct); whilst that of Wignacourt was at the same time enlarged by the accession of the much renowned springs of *Gomerino* or *Amieri*, *Boschetto*, and *Ain Liemu*. But after the execution of such works at a considerable expense, the drought set in, in 1855 and three years following, clearly proved their insufficiency to meet the wants of the population; the Government and the Admiralty were compelled to have recourse to the filtering of sea-water, making use of the steam-ship *Shearwater*, for the purpose

of the whole water, supplied by the Aqueducts, for domestic and sanitary purposes, chiefly to render possible the regular flushing of the Hospital latrines and drains and in the Barracks and Married Quarters: (whilst every Military building has besides one or more large tanks each dug in the rock, the total capacity of which is about 15,000,000 gallons). The other two remaining thirds are liberally given free of any charge whatever to the inhabitants of the said fortified towns for flushing private drains and public sewers in a very inefficient manner; whilst the inhabitants in towns that are not fortified and of Villages have to pay for any portion of water doled out to them by Government.

* Until then the Wignacourt Aqueduct was supplied with the following springs, viz: *Hofret Irriz*, *Ghain Kayet*, *Busugrilla*, *Gharieshem Iccianti*, *Ghain Klieb*, *Ghain Fierez*.

of supplying the Three Cottonera Cities, and the Royal Navy and Merchant Shipping. But even this failed to meet the deficiency. The fleet on this station and the troopships calling at this port, on their way to the Crimea, were actually forced to proceed to Sicily, to take in a stock of water, thereby causing considerable injury to the trade of these islands.

In 1861 the Collector of Land Revenue (Mr. G. Vella C.M.G.) made the suggestion to Government of increasing the supply by narrowing its distribution, and recommended for Sanitary purposes that water should be drawn from the cisterns by pumps.* From 1865 down to 1868 a great scarcity of rain again prevailed. In 1866 our then Governor, Sir H. Storks, appeared disposed to countenance a water scheme produced by Col. Thos. Martin, 2nd Batt. 4th Regt. "The King's Own"—as being the only way of solving the water problem for the sanitary requirements of the inhabitants in the fortified towns. It consisted "in the construction of a Water-tank on piers, at the highest level of the existing main-sewers (say St. James' Cavalier). . . . placing a coal-tarred iron tank capable of containing from 500 to 700 gallons of water to be supplied by gravitation from the tower or main tank—placed at the head of each main-Sewer—and connected with the water tower. Each Sewer-tank fitted with a trap sluice worked by a simple lever, and the same tanks connected with the water tower by means of ordinary piping. The main-sewer to be filled once or twice a week 'and all the reservoirs on the roofs of houses also supplied by lifting for the purpose sea water by means of Gwynn's centrifugal pump No. 3; which fitted with a $6\frac{1}{2}$ horse power engine would raise 9,000 gallons per hour, allowing 30 gallons of salt-water for each house latrines &c.' "†

I shall not here dwell upon commenting as to the insufficiency of the former and the ruinous consequences to the buildings involved in the latter scheme, for fear of insulting the common sense of my readers, for obvious reasons.

With all these difficulties staring us in the face the Government carries out in the Cottonera Cities, and pushes on the execution of its favourite Drainage Scheme, simply in the hope of discovering water in

* See Appendix G.

† Proposal for flushing the Main Sewers and Drains of Valletta and its neighbourhood and for cleansing and purifying all the "Latrines and Drains of Houses" by Lieut. Col. T. Martin, 2d-4th the K.O. Royal Regt.—1866.

the future : thus putting the cart before the horse. Let us examine, however, the quantity of water, generally at the disposal of the Government, in times of drought, and what amount should be required to allow of a constant and sufficient supply needed for domestic purposes including the efficient working of a water-carriage system of sewerage.

Dr. Letheby the distinguished Hygienist, in his quoted Report evidently attributes in great part the very satisfactory sanitary condition of the City to the abundant supply of water secured to the Metropolis:—

“ The average quantity—he says—for the whole year was 111,298,027 Millions of Gallons per diem. That quantity had been supplied to 502,460 houses and it averaged 22½ gallons per house per diem, or 33.4 gallons per head for the entire population of London.”

Mr. J. F. Bateman, C.E. eminent as a Water-Engineer, in his Report “on the Malta Water Supply,” addressed to His Grace the Duke of Buckingham and Chandos (then Colonial Minister) dated 11th May 1867, said:—

“ In Great Britain for such a population the lowest allowance would be 20 gallons per head per day—in a hotter country 30 gallons should be provided. At present the two Aqueducts Wignacourt and Fawara are not yielding more than *one gallon* per head per day (!) ”

Dr. Sutherland and Capt. Galton on the subject remarked in their quoted Report:—

“ It is quite necessary that the means of distribution should be brought more into conformity with modern usages, not only for convenience but for health; and should it be found on trial that there is a deficiency, it will be requisite to use *sea water* or brackish water for the latrines. The improvements in water supply we have recommended are indispensable for enabling the sanitary condition of the Civil population to be ameliorated, and they would include the barrack also.”

And again Dr. Sutherland in his Report of 1867, stated that:—

“ There was no apparent reason why almost every village should not have water laid on to the houses. The present method of using underground tanks affords a supply altogether incommensurate with the real wants of the people, and the quality can never be depended upon. The amount of water at the command of the people is *extremely limited*, both on account of its source and method of distribution. At the time of this enquiry the tank water had been mostly exhausted during a long drought... The present water sources and methods of obtaining water are most defective, and the quantity of water at the disposal of the people is altogether inadequate for health and cleanliness.”

And in 1874, the Medical Commission appointed to inquire into the causes of increasing mortality, in reference to the subject, stated in their Report:—

“The water-supply of Malta is simply its collected rain-fall, for although additional quantities are brought to Valletta from the Bengemma Hills by the Wignacourt Aqueduct, and to the Three Cities from the Fauara, the advantages are restricted to a very limited area. We need not dwell on the connection which always exists between a large sick rate and a *restricted* water supply: the subject is already receiving due attention at the hands of the Government: its present insufficiency very sensibly augments the total sum of our sanitary shortcomings, and an improvement in this respect must largely promote the health and assist the well-being of the inhabitants.”

That all the Government experiments and expenditure in search of water proved a complete failure, therefore the object of its efforts on the sanitary condition of the country have not been attained, will appear from the following facts:—

In 1866-1867, when I was in England eight Companies jointly poured every day into the Metropolis and its immediate suburbs, on an average, about 100,000,000 gallons of water; and in Glasgow 45 gallons of water were distributed to each individual; three and a half gallons were sold by meter for purpose of trade, leaving $41\frac{1}{2}$ gallons to each person for domestic uses: 22,000,000 gallons of water every day distributed to a population then numbering, about 485,000 persons: whilst in Malta, at that time, the aqueducts, as stated above, were not yielding MORE THAN ONE GALLON PER HEAD PER DAY and the Medical Commissioners while, as already observed, animadverting upon the insufficiency of water, only confirmed what Dr. Sutherland and Capt. Galton had strongly impressed on the mind of His Excellency the Governor since 1861, viz:—that there can be no health without abundant and wholesome water. “We need not dwell,”—the said Commissioners said—“on the connection which always exists between a large sick rate and a restricted water supply.” *

Whilst the Government was being strongly exercised how to overcome the water difficulty, I took the matter up, and having studied it in all its bearings I formed a plan in 1864 for a constant supply; and down to August 1866 I tried all means to induce the Government to adopt it. Dr. Adams, the Geologist, and the Civil Engineer Mr. C. Andrews, the only persons on the spot able to form an opinion upon the subject,

* “Report of the Commission appointed by H. E.”—1874, (cited).

approved of it. But instead of meeting with support or encouragement on the part of Government, I was strongly opposed by my political adversaries in power. Losing all hopes of overcoming the opposition raised to my scheme I went to London in September 1866, and found in Sir George Bowyer a most valuable advocate and supporter of my plans. Through him I obtained an introduction to enterprising gentlemen who had just completed, with excellent result, a new system for supplying Rome with water, by order of the then Sovereign Pontiff. My scheme not only received their full approval but was sanctioned also by some very distinguished Water-Engineers. In company with those gentlemen I was favourably introduced and strongly recommended to the then Colonial Minister—the Duke of Buckingham and Chandos—in whose presence my project was declared safe and quite feasible; and we subsequently had a conference, by appointment, on the same subject, of the “Malta Water Supply,” with the Chancellor of the Exchequer, Earl of Beaconsfield (then Mr. Disraeli), and again with the Minister of the Colonies; both favourably entertained my proposal, and being assured that the promoters of said Water Company were provided with the requisite funds for carrying out the works, those Ministers sanctioned the concession thereof, with a promise of a grant from the Exchequer of £35,000 towards its execution, subject to the condition of the Malta Government’s consent and permission. It is to be noticed that the local Treasury was not to contribute any share in the operation.

Well, after such favourable results and other conferences of the Promoters of the Company with the Colonial Secretary—not omitting Sir George Bowyer’s kind interest—I succeeded to come to an agreement with Messrs. Fawcett and Woolbert—the gentlemen previously alluded to—on August 17, 1867, in which they bound themselves, amongst other stipulations, to a daily supply of water equal to the wants of the inhabitants of Valletta, Floriana, and the Three Cotonera Cities, at the rate of not less than 15 gallons of excellent potable water, per head, promising to increase that quantity to 20 and later on to 30 gallons: independently of the aqueduct supply, which had to be, eventually, devoted to its original destination, the supply of nearly two thirds of the population living out of the fortified towns and for agricultural purposes. It would hardly be credited that to such a fair proposal, sanctioned by H. M.’s Government, approved by men of standing ability in the science of Hydraulics, our paternal government refused its consent, and declined to enter into any negotiations whatsoever with the promoters.

of same. It is needless to show who could have foiled me in that scheme, and thus robbed the country of a lasting and important benefit; it will suffice to bear in mind, that this took place immediately after Governor Grant's arrival in this island: and without stopping to unravel this tangled skein of intrigues, the following extract from a letter of Sir George Bowyer, Bart., will sufficiently explain this sad story:—

“ The Temple, May 28, 1874.

“ My Dear Sir,

“ I regret to hear that the water supply in Malta is still unsatisfactory. You will remember that several years ago Messrs. Fawcett and Woolbert were prepared to form a Company which would have supplied all the water required. I did all I could to forward this most useful and important plan. I pressed it on the Government here; but the Duke of Buckingham, Colonial Secretary, could not be induced to decide anything. The matter was in fact left to the Governor who actually prevented the Council from entertaining it by stating to them that the proposal of Messrs. Fawcett and Woolbert had been rejected by the Colonial Office. This was a blunder. I went to the Secretary of State and told him what had happened. He said that his despatch had been misunderstood: I telegraphed to Malta, but it was too late, and nothing was done.

“ You will remember that Messrs. Fawcett and Woolbert had at the time which I refer to, just carried out and completed the water-works at Rome, with perfect success.

“ On the 17th March, 1867, they entered into an Agreement, signed in my presence, engaging to purchase from you the land and machinery at the Inghieret for the purpose of the proposed Water-Works. I presented this proposal to the Duke of Buckingham asking for a grant of £30,000 or 35,000, from the Imperial Government.

“ I had reason to believe that the Government had no objection to the proposed grant. I have no doubt that Messrs. Fawcett and Woolbert were able to carry into effect their offer and were prepared to satisfy the Government that they could command the necessary capital.

“ They were prepared to carry out the scheme at the risk of the Company only with the above mentioned grant, and even without any assistance or guarantee from the local Government.

“ The offer was favourably received by the Colonial Office and it would have been carried into effect, if it had not been defeated by the Government in the manner above stated.

“ The Governor wrote to the Colonial Office that he would not allow any private Company to interfere with the supply of water.

“ You may make any use you please of this letter.

“ Yours sincerely,

“ GEORGE BOWYER.”

“ Dr. Charles Casolani
Malta.

With regard to Inghieret subterranean water, it is well to observe, that some time before, Dr. Adams in his Report to H. E. Governor Storks "on the future water supply," dated May 1, 1865—with an enclosed Memorandum of mine on the subject—as well as Mr. Andrews, C.E., on the 16th September 1866 in his Memorandum: "On the Marsa improvements," after surveying the locality, examining the water, and inspecting the machinery, had both recommended for the purpose, the water obtained from that well and the use of that establishment, as being most adapted and the water wholesome, *sweet and of good quality*. The Chief Government Surveyor himself, Mr. Galizia, looked upon that water, also, as of excellent quality, equal if not even better than that of the springs supplying the two aqueducts "Wignacourt and Fawara."

Some idea of the enormous supply which this formation is capable of yielding from wells, when so advantageously situated, may be gathered from returns of some of the wells in operation (1866-1868) at the time I was in England. Upwards of five millions of gallons were drawn every 24 hours from wells at Liverpool; at Manchester and Salford 6 millions, every 24 hours (one of Messrs. Barley and Craven 5 millions gallons every 24 hours when the engines are in full operation.) At Birkenhead there were several, I only mention two, from one 8 millions and from another 2 millions gallons were drawn every 24 hours. At Nottingham several—out of many—one yielded 3 Mil., the other 3 Mil. and the supply from a third could not be tested, owing to the fact that the inflow of the water was too great for the engines to make head against. At Birmingham, out of 7 millions gallons supplied by the Company, the greater part was derived from wells. The water was pumped up 287 feet by powerful engines into *Reservoirs* and hence distributed to the towns.

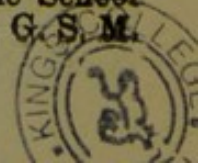
As to the quantity and wholesomeness of water derived from wells which nature stores under our feet in the water-bearing strata, we quote the following extract from Professor Denton's valuable work on the "Infiltration of Rain by Absorbent soils in Summer and Winter:—"

"The proportion of the rainfall absorbed by and penetrating a porous surface varies considerably. On an average of years we find that from $\frac{1}{4}$ to $\frac{1}{2}$ of the rainfall, according to the nature of the soil and state of husbandry, thus descends to the subterranean levels."*

"On wholesome water" the said learned Hygienist says:—

"Of all waters obtainable in this country those that receive the preference

* "Sanitary Engineering"—a Series of Lectures given before the School of Military Engineering at Chatham—1876—by J. Bayley Denton, F. G. S. M. Inst. C.E.



of the Commissioners are spring and *deep well* waters. Such waters—they say—are of inestimable value to communities and their conservation and utilization are worthy of the greatest efforts of those who have the public health under their charge.

“The water collected from the roof of houses, and stored in underground tanks they state to be much more impure, while the water collected from the surface of cultivated lands, and from the under drains of cultivated lands, is always more or less polluted with the organic matter of manure, even after subsidence in lakes and *reservoirs*.”

And in his concluding remarks he, observes:—

“No Engineer will deny, as a general proposition, that water which has passed through natural soil, unaffected by any mineral impurity, to deep subterranean levels in the water bearing strata, is, where available for use, the most acceptable of all waters for drinking purposes.”*

Dr. Sutherland and Capt. Galton in their quoted Report in reference to the same subject stated:—

“That in Malta most of the rain-fall is absorbed by the very porous subsoil, the lower rock being a hard semi-crystalline lime stone, as determined by the Earl of Ducie and Capt. Spratt, R.N.”

But the paternal Government of Malta disregarding the real interests of this population, took no heed of all this, and the reason why it did not is clear enough. Ever since 1867 it was known that with regard to “a supply of water for the future” the Government authorities contemplated “the formation of two large *Reservoirs* cut out in the rock at the highest part of the Island to receive the rain-water and overflow of the springs in rainy seasons, from which reservoirs so placed at a higher point than that of the greater part of the Island, the water would be carried to any place:—” a scheme formed by the Crown Advocate whilst I was in England, probably with the intent of opposing my project and any other coming from out-siders or persons that are not his dependents—as will hereafter appear evident. But for all that, the principle, although new in the Island, of utilizing subterranean waters offering so many advantages, met with no few supporters. In fact, a Petition was addressed to His Excellency on March 15, 1867, by a number of the population, praying that a Water-Engineer be invited to come to Malta and carefully consider and report upon the question of these subterranean waters, as a means of securing to the island a permanent and abundant supply. That petition when laid before the Council received the support of the Elected Members, particularly of their leader, the Hon. Dr. Ruggiero Sciortino.

* Denton “Sanitary Engineering, &c.” (cited).

The eminent water Engineer Mr. Bateman, while engaged in effecting certain works of water supply in the Balearic Islands for the Spanish Government, was requested by the Secretary of State (Duke of Buckingham) to give a look to Malta "on the subject of water." He arrived here in April 1867 and left after three days (and was taken back by the *Massilia* to Majorca, where he was bound to be present within a certain date). The distinguished gentleman, however, did not leave before having learned all that he wanted to know with reference to the question he had been deputed to study. In his Report addressed to the Secretary of State for the Colonies on his arrival in England (11th May 1867), he gave very good reasons against the scheme contemplated by the Government of excavating tanks in the rock for storing water; and, whilst expressing a very favorable opinion in regard to subterranean waters, condemned the use of water derived from the wells at the Marsa put to use by the Government, being too near the sea:—

"I am now perfectly satisfied—he stated—that an abundant supply of good fresh water can be obtained by sinking one or more large shafts or wells to about the level of the sea in any convenient position *near the centre of the Island*, and by raising the water thus found by steam power to the requisite elevation. *The cheaper, shorter and more certain way is to sink for water in the porous strata about the centre of the Island from which, as I have already observed, an almost unlimited quantity may be extracted.*" (The Italics are mine.)

This being so, Messrs. Fawcett and Woolbert contemplated to drive tunnels from the existing well at the Inghieret and form subterranean galleries for lodgment, to meet with water-bearing fissures towards the Siggiewy Lands and Città Vecchia: which Mr. Bateman highly approved. But the local Authorities had the famous *Reservoirs'* scheme in view; therefore, every endeavour was made on their part to foil my scheme and cast into the shade that eminent gentleman's recommendations; and even his skill in the matter. However, that Report served to convince the Imperial Authorities that the only means—being the safest and most advantageous—of solving the Water Question in Malta was to encourage and assist a Company in carrying out the proposed water-works at the Inghieret.

In 1867, Dr. Sutherland also, gave a favourable opinion with regard to those springs, and, at the same time, expressed himself strongly against the use of the waters derived from wells at the plain of Marsa. "The experience of this well," (alluding to that used by the Government) shows—he said—"the necessity, in any future works, for

obtaining water from wells, of not approaching too close to sea level, and of having a careful analysis made of the water before selecting it for use. The Marsa water is a bad water." And Dr. Sciortino, firm in his belief as to the practicability of that scheme, being the leader of the Elective Bench and Member of the Water Commission, insisted, (at the sitting of the Government Council held on January 9th, 1868) that the Government was bound to use all possible means for the research of subterranean waters considered by said Commission as offering the only means for securing a permanent and abundant supply, whilst floods of pure water were now running to waste:—"Experience has shown, he stated, that sweet water of the best quality can easily be found out in the internal parts of the Valley leading to the Great Harbour." On the Official side that Resolution was opposed, and the reasons adduced against the proposal were both frivolous and unfounded. The Government Nominees said:—"That proposal as well as the other made in the Petition of the 15th March 1867, amount to no less than an insult to the Government and a slight to the country, in as much as it makes it appear that there is no one here able to conduct such experiments, whilst the contrary is the fact, as several would be found in Malta competent to deal with the subject; and indeed there is one whose services are already at the disposal of the Government (alluding probably to a protégé—the originator of the *Reservoirs'* Scheme) able to conduct experiments and secure a permanent supply of water to the island.

However, in view of such marked appreciation from the elected bench, and from a special Commission, and the very singular reasons given to the Secretary of State by the governor for refusing his *placet* to my scheme; and, trusting the paternal government would, under the circumstances, undertake to do what it refused others to effect, on my return to Malta, (in January, 1868), I presented an elaborate Memorandum upon the subject—dated March 13th of same year—to His Excellency Governor Grant, requesting him to take it into kind consideration.

So serious and opportune a proposal, which would, no doubt, have engaged the attention of an impartial administration, was met, within two hours of its receipt, by a letter from the Chief Secretary of the same date, conveying the refusal of the authorities to entertain any sort of negotiation upon the question at issue:—"His Excellency the Governor, he stated, confidently hoped that further measures may not

be called for to provide an *ample supply of water*." But as every intelligent person in the matter anticipated, Government has not succeeded yet in providing more than a very scanty increase of water, with all the new springs added to the aqueducts purchased from private proprietors and the many very expensive experiments made and machinery brought out from England, not at the expense of private parties or Joint-stock Companies, but of the public chest: as was officially admitted in the "Memorandum on the water supply in Malta and Gozo" submitted to H. E. the Governor by the Crown Advocate, dated 20th October, 1876, where, at page 3rd we read:—

"The cost of all these works between 1840-74, was over £50,000, and the supply in both Islands continues to be *far below* the demand for the numerous purposes for which water is indispensable."

And having thus upset every other proposal, no matter how advantageous to the country, very likely because not emanating from himself, the Crown Advocate avails himself of the opportunity to lay before the Council the identical project, of which I had received an account whilst in England since April 1867, contemplated and fondly elaborated by the local authorities, as already observed, in opposition to my scheme, deemed quite practicable by water-engineers of standing adopted by a rich Company, and sanctioned by the Imperial Government. "The same would consist,"—as stated at page 7th of the Memorandum:—

"In the formation on the line of the Wignacourt Aqueduct...of covered tanks, to receive through the same conveyance, the overflow of the springs...which for want of storeage is entirely lost...for carriage to any place." And again at page 12—"The works I suggest are on the line of the Wignacourt Aqueduct; covered tanks to receive the overflow from the springs—and other water falling in proximity to those sources. On the line of the Fawara Aqueduct covered tanks capable of holding number of gallons &c."

And the Crown Advocate in the same Memorandum, grounding his scheme on his own calculations, having declared that the Government Land Surveyor, Mr. Micallef, was merely consulted by him, while both are ignorant in the matter at issue, the Crown Advocate taking into consideration all the domestic, requirements, and sanitary, wants of the country, determined upon the capacity of the *reservoirs* and the expense necessary for carrying his projected works into effect, and concludes by saying, that:—"The total amount of these different items, is £75,000." And at page 14—"I take the total proposed disbursement to be no less than £75,000." But the hon. and learned

Crown Advocate lost sight entirely, in drawing up his calculations, of the very important fact that in times of drought, reservoirs cut out in the rock have constantly been found empty; and this was solemnly declared before the Council by Sir H. Storks, when in the sitting of the 31st December, 1866, His Excellency said:—"Government has availed itself of the drought which has prevailed to cause *all tanks* to be cleansed and repaired." And Dr. Sutherland in 1867 stated in his Report that "there has been considerable anxiety in Malta as to the future available amount of water on account of drought, which, at the time I was in the Island, had led to the exhaustion of many tanks." Nor has the Crown Advocate explained in his Report how by his scheme the supply of water was to be rendered permanent and abundant for all the requirements, even in time of drought; nor what number of gallons were to be allowed per head to all the inhabitants. But if all this remains doubtful, it is clear enough that the expense required for effecting this fanciful scheme of water supply would exceed the sum of £75,000. And what is to guarantee us that the disbursement from the public chest, necessary for carrying out such contemplated works would not eventually exceed double that figure and, perhaps, amount even to £200,000. Whilst water so derived could scarcely ever prove to be, but a mere contribution to the aqueducts, which, together with the existing springs, might suffice only for the immediate domestic requirements of a yearly increasing population; without however supplying the quantity of water absolutely necessary for sanitary purposes, and none, perhaps, for the efficient working of the new system of Drainage adopted by the Government.

I can well conceive that, in the same manner as the vote for Drainage and Ventilators was pressed last year upon the Council and imposed on the population, the vote for the new water supply will be forced also by the Official majority. The Crown Advocate, being the promoter, will stand in need of no arguments to support his own scheme. He may perhaps say that Drainage and Water must necessarily go together; that as the vote for the Drainage had already been taken, and since water must be the carrier of sewage matter, it is but natural that a vote for Water should also be granted for that object. But Dr. Sutherland and Capt. Galton as well as all hygienists and professional sanitary Engineers maintain that, the water supply should be copious and permanent, and as this cannot surely be realized by the Crown Advocate's hydraulic scheme, it is but reasonable for the Government

to admit that its favoured system is practically impossible in Malta and, therefore, ought not to be adopted: in Valletta and Floriana at least. As an instance I may mention that only for remodelling the latrines and drains of certain government houses in Strada Mercanti, lately effected by an able English House Engineer, Mr. Unsworth, a large volume of water had to be diverted from the Wignacourt aqueduct carried by means of an apposite iron-pipe to the top of those houses; and that for want of an equal supply in the Dwellings of the Civil population, Col. Wray, R.E., had to leave for future consideration that most important question, and resort to sea water carried in hogsheads for flushing the drains of the public Sewage constructed under his direction in the three Cottonera Cities: which facts evidently show, in my opinion, how impossible it is to have any dependence on that system operating in a permanent efficient manner.

In concluding this part of my discourse, it appears clear to me that Government has committed a great mistake by carrying out that system of drainage in the Three Cities, and that were the same system to be effected in Valletta and its Suburb, it would fall into an unpardonable error. Admitting that drainage by water carriage is now impracticable, ventilators would therefore become superfluous* and the projected water-supply might also be dispensed with: at least for the present. Nor can it be denied that, had our military Governors, been advised by men self divested of all passion, an ample supply might by this time have been secured to this country with great advantage to the health of the population at large and incalculable benefit to agriculture—without the need of applying to the Crown Advocate for making schemes and printing Reports at the expense of the public chest; who, whilst he is very learned in the Law, does not, by any means, possess the necessary knowledge for taking in hand such a matter. It now only remains for me to say a few words relative to the Organization of a Sanitary Statistical Department, and Laws and Regulations concerning Public Hygiene, which I shall do as briefly as possible.

* Should our Government, after securing all the quantity of water required, adopt a water system of Drainage in Valletta and Floriana, then for the ventilation of same one single Ventilator might answer the purpose: a method which had already a very successful trial at Sidney N. S. W. with a population of 134,756 inhabitants: where the ventilating shaft intended for the whole sewerage of that City was converted into an ornamental structure called Strutt's Monument. ("Some considerations on the important subject of Sewer Ventilation," were published by me in April 1876 and again in 1879.)

VI.

ORGANIZATION AND LAWS.

In order to introduce reforms and establish real improvements, it is essential that the initiation and practical progress in sanitary operations be effected with great care, circumspection and ability ; and, unless the persons employed in the respective offices qualify themselves for the new task, great evils must be expected to result from it.

The provisions of the Public Health Acts should only originate from a Commission composed of different elements, presided over by an officer of standing ability and great experience in the management of the different sanitary operations and in the direction of a Sanitary Administrative Department amongst a population of about 150,000 souls. He should be assisted by a professional Sanitary Engineer and two distinguished native physicians, besides some house-owners and other gentlemen known to take interest in this important matter, whose presence in the Commission is sure to inspire confidence, and would afford them an opportunity to use their influence in persuading the inhabitants as to the great advantages derivable by the adoption of sanitary measures, laws, and regulations, and whose knowledge of the habits, prejudices, especially respecting the right of property and character of the people, might be a guide to the action of the professional members of the Committee.

Only a Commission so formed would, in my opinion, be able to advise the head of the government and to guide the Legislature as to the provisions of a Sanitary and Building Act. This was expected by those who take deep interest in seeing this country liberated from the many sufferings by which it is afflicted and causes of evils which science has discovered and hygienic regulations might control. What the people here are strongly against is, to have the so-called "Police Laws in respect to sanitary matters" amended, and new Ordinances, enacted and forced upon the people against their will by the official majority in Council, who are kept at the Crown Advocate's beckon, unaided by a consistent, and experienced guidance in carrying on the sanitary work of the country with judgment and efficiency in a manner to secure success. It is not the province of that functionary to originate schemes and impose his ideas on the country in matters that would obviously require men of a higher authority in order to inspire confidence. While legislating and effecting sanitary reforms, the only

part of a lawyer should be to explain the law to the Committee in framing the acts and show to the executive officers how far their action is legal. The following extract from Dr. Sutherland's report of 1863, amply shows the necessity of professional sanitarians, while legislating for the first time in Malta:—

“In Appendix XXIV will be found the public health enactments, contained in the public laws and regulations, and it will be seen that several of the rules in regard to house drainage and water supply, if carried out, would compel the execution of the very class of works in houses to which much of the general unhealthiness and epidemic susceptibility of the inhabitants can be distinctly traced. The clauses for preventing nuisance and for cleaning houses &c., are less open to exception, but it will be seen that these enactments take it for granted that the persons charged with their execution have some instinctive knowledge of what is nuisance and of what is injurious to health. On the possession of this knowledge the entire efficiency of the Law depends.”

And, forsooth, when in 1861-1867, the attention of Her Majesty's Government was called to the condition of Barracks, Hospitals and Married-quarters in this station, with a view to improve the existing buildings, professional sanitary Commissioners were appointed for that special object, notwithstanding the presence in the island of Inspectors General of Hospitals and other able Medical Officers and Engineers in the service of the Army and Navy. And, if this is so, surely the Secretary of State should admit on this emergency the reasonableness of the proposal and expediency of appointing an experienced Civilian Sanitarian of standing ability to carry out the sanitary work of the country at large.

As I have on various occasions already observed, particularly in a letter to the *Malta Times* and published in *Public Opinion* on the 18th March 1875, I firmly believe that such a Hygienist is indispensably necessary to organise and put in working operation a Sanitary Statistical Department. Besides, he would impart to those destined to be permanently appointed, especially to the Medical Officer who will replace him, his practical knowledge as to how they are to deal with all the multitude of sanitary subjects above enumerated, and the tact which is necessary for their being favourably received by the public; also the practice that obtains in England in the formation of the Office Books, correspondence and reports on each special subject, and all other information which his scientific knowledge coupled with his long sanitary practice and experience will enable him to afford to those destined to undertake the difficult and delicate duties of permanent

Health Officers in these islands: including those exercised by the Registrar General in England. At page 44 of his Report Dr. Sutherland says:—"It would be advisable to consolidate and place under one authority all Ordinances, rules, &c. having reference to public health questions, such as vaccination, inspection of food, drink, and such like &c."

Moreover it may be safely laid down that no real or permanent sanitary improvement worthy of the name can be achieved, notwithstanding all the Ordinances passed by the Government Council against the unanimous opposition of the elective bench and power whatsoever with which government will invest the executive officers, before a real and intelligent interest is first created in the people as the only means of securing their support and co-operation. Indeed it was only by acting on that principle that our fellow subjects found it possible to carry into effect a sanitary reform in the United Kingdom crowned with great success, and that they are daily making greater progress in practical Hygiene. I, therefore, believe that to effect a real sanitary reform all over these islands an organisation is required such as would afford an opportunity of utilizing local knowledge and the local interest of the inhabitants. The Right Hon. J. Stansfield while filling the office of President of the Local Government Board in 1875, is reported to have said in the House of Commons, in the course of a very interesting debate on sanitary laws and organisation:—

"I do not believe in making people healthy by Act of Parliament or centralized authority, but I have faith in educating and training localities to take care of the lives of their citizens. Had the Public Health Act Bill been framed on a purely scientific conception the result in four years would have been to cause a reaction all over the country against sanitary laws."

And the eminent Hygienist, Dr. Richardson, in the above quoted Report said, on the same subject:—

"Throughout all sections of the community there is desire to know; and if the legislator will be content not to legislate until he sees that free will guided by knowledge is in the same train with him—it matters little in which class—all will go well."

The Maltese people had then excellent reason in unceasingly condemning the policy pursued by Government and to obstruct fancy schemes and measures, laws and enactments, not laid down by a Hygienist but by a Lawyer. And the house owners were fully justified in promoting and presenting, in November, 1876, to the Governor in Council, the petition protesting against the provisions in the

Sanitary Building Ordinance, now before the Council of Government—the said petitioners being evidently supported by men of high standing and ability; for they did not object to the enactment of any sanitary Ordinance whatsoever, but only just to that particular one, which, far from inspiring confidence in the people, clashed with the interests of the Landlords.

“That Petitioners were ready and fully disposed”—they said—“gratefully to accept a law which, grounded upon the requirements of society and proceeding from a juridical application, would be calculated to guarantee the public health without vexatiously harassing the people.”

Wherefore the presence in Malta of an able and experienced Sanitarian, for a year at least is, above all, absolutely required. According to Dr. Richardson a “Central Authority” stands before all other Sanitary Reform. And in 1861, Dr. Sutherland recommended to our Government that the gentlemen appointed to these new offices should be professional Sanitarians on whose knowledge and judgment the executive might depend. Therefore, the scheme of a mixed Sanitary, Police, and Charity Department devised by the Crown Advocate is in direct opposition to the principles laid down by men of great knowledge and experience, and condemned not by the Maltese only, but also by eminent statesmen. The Earl of Carnarvon, in 1858 in reference to the appointment of officers of Health, said:—

“It was of great importance that they should be men of high standing and ability and that the public should have the benefit of their whole time.”

And our present Colonial Secretary, the Right hon. Sir M. Hicks Beach, in 1872 had condemned before the House of Commons, most unequivocally the establishment of a Sanitary organisation, in the manner adopted in Malta at the suggestion of the Crown Advocate:—

“If the Medical Officers of Health—he stated—were to be the Poor-Law Medical Officers, they would be placed in a most invidious position. Let us have an able and competent despotism; but do not deliver us over to Poor-Law Medical Officers, who wo’nt act because they will be afraid to do so, or who, if they do, will be likely to act ignorantly and without experience.”

The Regulations alone that are observed by Candidates for qualification in Public Health, to be conferred by the College of Physicians of Edinburgh,* amply show that the ordinary education of a Medical practitioner, in Malta, especially, is not such as to fit those who receive it, for sanitary work. But just as a man must be a Lawyer before he

* See Appendix H.

can be a judge so he must be a Doctor before he can be even taught to be useful as an overseer of public health.

In summing up the facts set forth, it would appear difficult to deny that the blame is entirely due to the Government if after 80 years of British dominion these islands are in such an unsatisfactory sanitary condition ;

That the Water system of Drainage is impracticable in Malta under present circumstances, and could only be effected by adopting Colonel Martin's proposed method of using salt-water, for want of fresh water.

That there are good reasons to fear that in the same manner as the votes for glazed drain pipes, Sanitary Department, Drainage, and Ventilators were forcibly taken against the unanimous opposition of the Members elected by the people ; the same Drainage scheme, now only adopted in the Three Cities, will be shortly carried out also in Valletta and Floriana—despite the demonstration of the 2nd July—as well as the Sanitary Department,—as at present constituted—the Crown Advocate's Ordinances, and his schemes of Water-Supply, and construction of Model Dwellings for the labouring classes and poor at the public expense. And, if the Landlords are not attentive in time, the vote for sea-water to be laid on the top of houses and supplied for all Sanitary purposes will necessarily be also sanctioned by the sole majority of the Official bench of the Government Council ; for the simple reason that, fresh water does not exist for that object, while it is an axiom that “Drainage and Water must form part of one system.”

Hence the necessity of our protesting without delay, against sanitary laws and measures adopted or contemplated, that in the manner brought before us by the Government tend to bring on the ruin of our finances, of our buildings, and of the welfare of our country. Let us therefore, while we are in time, make use of the right granted to us by the Constitution. In the British Constitution, as already observed, and we now repeat with the words of the distinguished statesman and learned Jurisconsult Lord Brougham :—

“The structure of the government was made to rest upon the people's *Right of Resistance* as upon its corner stone; and it is of incalculable importance that this never should be lost sight of...The principle of Resistance is essential to the preservation of the Constitution thus established and secured...necessary both for the governing and the governed it ever must be to regard the recourse to that extremity as always possible...a remedy within the people's reach ; a protection to which they can and will resort as often as their rulers make such a recourse necessary for self defence...The whole

history of the Constitution, abounds with proofs how easily absolute power may be exercised, and the rights of the people best secured by law be trampled upon—while the theory of a free Government remains unaltered—and all the institutions framed for the control of the executive Government, and all the laws designed for the protection of the subject, continue as entire as at the moment they were first founded by the struggles of the people and cemented by their labour or their blood... Passages in the history of the past teach us to distrust all mere statutory securities—to remember that Judges, Parliaments, and Ministers, as well as Kings, are frail men, the sport of sordid propensities, or vain fears, or factious passions; and that the people never can be safe without a constant determination to resist unto the death as often as their rights are invaded.”

I have now to address myself to the Hon. Councillors, representatives of the people, and to beg their attention to the observations and suggestions which in all sincerity I have had the honor to submit for their consideration.

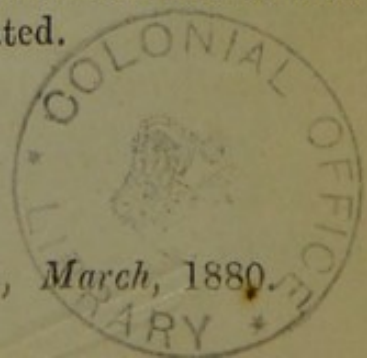
It is for you, Hon. Gentlemen, to decide as to the course you are to take in order to lay before Her Majesty's Government, or before Parliament, the just complaints and grievances of this population, so much attached and so loyal to the British Crown, against measures and laws regarding Public Health sanctioned and adopted, and others in course of preparation.

For my part I cannot help impressing upon you the urgency for taking action before the Petition of the Maltese People of July 2nd 1879 is taken into consideration in Parliament.

This new Petition will serve to throw light upon and confirm the preceding one, and to convince the Imperial Government that it is not party spirit, that seeks to raise obstructions and obstacles against our local government's management of public business, but a full and deep rooted conviction of old-standing wrongs that compels our appealing to Parliament.

Strong in our rights and full of confidence in the justice by which the Queen's Government is actuated, we may safely rely that measures decreed by an unjust vote will be repealed, and that the Maltese will never have to witness the execution of schemes as odious as they are deservedly and universally reprobated.

Valletta, March, 1880.



THE END.

APPENDIX

A

GOVERNMENT NOTICE.

With a view of the better provision of accommodation for the poorer classes, and the obvious importance to be attached to constructing such dwellings on the best principles, for securing convenience of domestic arrangement, economy of space and rent, coupled with good drainage and ventilation; his Excellency the Governor is pleased hereby to signify, that the Government are prepared to receive plans and designs from all persons who may wish to submit them for such class of buildings.

His Excellency is further pleased to direct that two premiums, the first of £25, and the second of £10, be allotted for the two designs declared by a Board, to be specially appointed for their examination, to be the most eligible for the purpose contemplated, and the highest in point of merit.

The dimensions of the site to be allotted for such buildings are 158, feet by 131, with free frontages.

A plan of the same can be seen on application at the Chief Secretary's Office.

The designs to be sent in to the Chief Secretary on or before the 30th November next.

By command,

Palace, Valletta.

2nd October, 1858.

WILFORD BRETT,

Acting Chief Secretary to Government.

B

ADVERTISEMENT.

Office of Land Revenue and Public Works
Valletta, 24th January, 1859.

For the grant on perpetual lease of the block of Buildings called "Camerata" in Valletta, Strada Mercanti, and Dependencies in Strada Ospedale and Strada Tramontana.

Notice is hereby given that sealed tenders will be received for the perpetual lease of the Block of Buildings called "Camerata" in Valletta Strada Mercanti and its Dependencies in Strada Ospedale and Strada Tramontana, with the object of constructing thereon houses or apartments for the use of the poor industrious classes.

The proposed plan for such Buildings will have to be submitted to and approved by the Government, and the projected plans that have been rewarded by the Government and are now exhibited at the Public Library, may be wholly or partly adopted.

A surety is required for the due fulfilment of Contract.

Further particulars may be known on application at this Office.

G. VELLA,
Collector.

C

TENDER.

With reference to the Advertisement published by the Collector of Land Revenue on the 24th of the month of January, 1859, and conformably to the conditions therein indicated and known by me, I the undersigned, offer the sum here under specified for the grant on perpetual lease of the tenement called "Camerata" in Valletta, Str. Mercanti and dependencies in Str. Ospedale and Str. Tramontana.

One hundred, and eighty Pounds British Sterling a year payable half yearly in advance, in two equal instalments.

For Monsignor Annetto Casolani
absent from the Island

£180.

CHAS. CASOLANI.

Should the Tender aforesaid be accepted, I the undersigned will stand surety and bind myself *in solidum* with the said party tendering, for the full and due fulfilment of said tender, under the covenants and conditions aforesaid.

(Lady) ANTONIA CASOLANI.

N.B.—Having applied to the Acting Collector for an official Copy of said tender and failed to obtain one, I publish the present being its original draft.

D

ADVERTISEMENT.

Department of Land Revenue and
Public Works,

Valletta, October 18, 1861.

His Excellency the Governor having, with a view of continuing the execution of the scheme referred to in the Government Notice of the 2nd of October 1858, for the construction of dwellings for the use of the poorer classes, been pleased to direct that a large portion of the building at Floriana, called "*Franconi*," be granted on a perpetual lease, on the condition that two dwelling houses, separated by streets be built upon it, in accordance with a plan which may be seen in this office, or in accordance with such other plan as may receive his Excellency's approbation; notice is hereby given that sealed tenders will be received at this office until 12 o'clock on Saturday, the 30th of November next, for persons desirous of obtaining the grant of the aforesaid lease.

Tenders will be received either for one only, or for both, of the sites destined for the dwelling houses.

No tender will be considered as accepted, until the acceptance thereof has been communicated to the party tendering, by letter from the undersigned.

The principal conditions of the Contract may be known on application at this office.

A deposit of £ 25, is required with each tender.

G. VELLA, Collector.

E

Extracts from Dr. Sutherland and Captain Galton's Report.

Written in 1861, and presented to Parliament in 1863.

"Plans were advertised for, and several very good plans were sent in, one of which, after undergoing some *improvements in details*, was selected as a model.

"An entire new Suburb of model dwellings, for the labouring classes will, in all probability be constructed, in connection with the new harbour.

"The building ground will be leased subject to the adoption of the plan; and as the improved houses are built, Valletta will be cleared of the old unhealthy tenements which are at present its opprobrium.

"Appendix, No. 12 and 13, show the steps which have been hitherto taken to give effect to this important improvement." (See Government Notice of the 2nd October, 1858, in reference to the "*Camerata*" (Appendix A) and Government Notice of the 18th October, 1861, in reference to "*Franconi*" Buildings, Appendix D.)

F

With reference to the remarks made by the Crown Advocate on the 23rd of January last, concerning the healthy houses built on the site formerly covered by the "*Camerata*," we wish to point out that the plan for those houses, designed by Dr. C. Casolani, was superior to any of those for which prizes were accorded, and that it is not true that "the Government was finally pressed by that party to permit even deviations from the plan that had been settled." It is true that some time after the building was completed, the owner sold the property; but the character of the building has not in any way been altered; and those healthy apartments are now occupied by the wives and families of non-commissioned officers and soldiers stationed in this garrison. So that if the Government had continued to grant sites on the same conditions on which the "*Camerata*" was granted in 1859, there would by this time have been hundreds and even thousands of healthy houses for the poor, and the obnoxious lodging-houses would long ago have been improved, if not rebuilt.

As to the healthiness of those houses, Dr. Sutherland gave it as his opinion in 1863 that the "*Camerata*" was in many other respects superior to the blocks of buildings for the labouring classes, built in the suburbs of London, and that the plans of the "*Camerata*" were superior to those of the *Maison Cité*, for which the Emperor Napoleon III had obtained the gold medal from the Commissioners of the Paris Universal Exhibition. He was convinced that had the plans of the "*Camerata*" been exhibited with the others, they would have been awarded that medal by the Jury.

On the 21st November, 1876, Dr. Sutherland quoted the *Camerata* as a model to be imitated.

Under the circumstances, we believe the Crown Advocate, instead of speaking disparagingly of the "*Camerata*," might have said a good word in favour of the designer of these houses, who recommended the reform to Sir G. Le Marchant; and perhaps the hon'ble and learned gentleman would have done so, but for the political differences which have long existed between him and Dr. C. Casolani who looks upon the Crown Advocate as the cause of his ruin and that of the whole family.—(*Public Opinion*.)

Office of Land Revenue and Public Works,
Valletta, 17th July, 1861.

In conclusion, I venture to submit for the consideration of His Excellency the Governor, the expediency of adopting the following measures, necessary, in my opinion, for filling up, with the least possible delay, the public tanks, and the tanks in the civil and military establishments.

- 1st. That all permanent pittances of water, with the exception of those to public fountains and reservoirs, be stopped.
- 2nd. That all direct communications with the aqueducts by which water is taken *ad libitum*, be removed.
- 3rd. That all Civil and Military establishments should draw water from their cisterns by pumps, conveying the same to iron or wooden tanks, to be placed on an elevated position of the building, from which it might be distributed by pipes to any locality, in the same manner as has been lately done in the New Lunatic Asylum.
- 4th. That the works included in the estimates which I have the honour to forward herewith may be executed without loss of time.—I have &c.

To

Chief Secretary to Government,
Palace.

G. VELLA,
Collector.

H

*Regulations to be observed by candidates for qualification in Public Health
to be conferred by the Royal College of Physicians of Edinburgh.*

The Royal College of Physicians of Edinburgh considering the great and rising importance of the Public Health Department of State Medicine, its natural and popular distinction from ordinary Medicine, and the number of Public Health appointments which already exist, has resolved to grant to all Candidates who conform to the following regulations, and are declared by the Examiners to be duly qualified to practise as Public Health Officers or Medical Officers of Health, a Certificate of qualification under the College seal and authority.

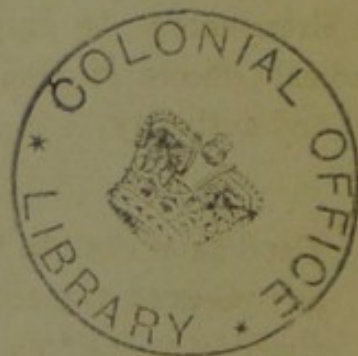
REGULATIONS

1. Candidates shall be already in the Medical Register and be entered there as possessing a qualification in Medicine.
2. Candidates shall not, in the mean time, be required to attend any special courses of instruction; but their attention is directed particularly to courses of Lectures on State Medicine, and to the practice of Analytical Chemistry.

3. Candidates shall be subjected to two Examinations. Such examinations may be taken simultaneously, or with an interval not exceeding twelve months.
4. The Examinations shall be written, oral and practical.
5. The Examinations shall be held in the Physicians' Hall, or elsewhere, if found more convenient.
6. Rejected Candidates shall not be admitted for re-examination till after the expiry of six months.
7. Fees will not be returned, except in the case mentioned in Sec. 6 Chapter iii.

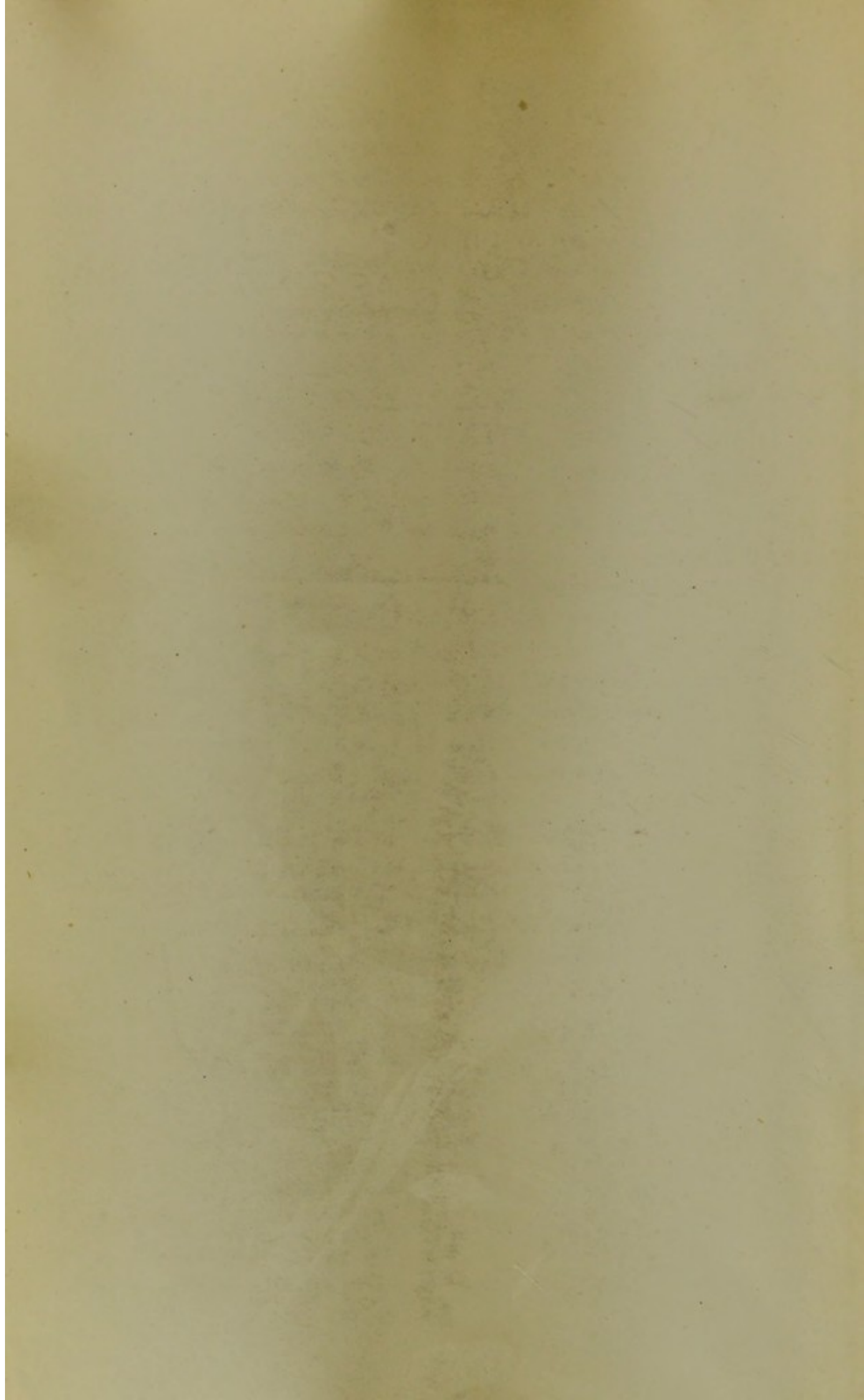
EXAMINATIONS.

- I. The First Examination shall embrace :—
 1. *Physics*—Especially Pneumatics, Hydrostatics, Hydraulics, and Engineering in relation to Sanitary operations, including a knowledge of Architectural and other Plans, Sections &c.
 2. *Chemistry*—Especially Analysis of Air, Water, Food, including the Biology of Putrefactions and allied processes.
 2. *Meteorology*.—Including Climate, Topographical and Seasonable influences in relation to Health and Disease.
- II. The Second Examination shall embrace.
 1. *Epidemiology and Endemiology*.—Including the corresponding departments in the Diseases of Animals and Plants—Contagious Diseases,—Diseases of Periods of Life, Professions, Trades, Seasons, and Climates.
 2. *Practical Hygiene*.—Duties of a Health Officer, Food, Water-Supply, Sewerage and Drainage, Construction of Hospitals, Public Buildings, Dwellings, Manufactures, Cemeteries, Nuisances.
 3. *Sanitary Law and Vital Statistic*.—Then follow the time and order in which the Examinations are conducted, and the Regulations with regard to fees.



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