

Annual report of the public health of Gibraltar for the year 1891 / by W. G. Macpherson.

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ANNUAL REPORT
ON THE
PUBLIC HEALTH OF GIBRALTAR,
FOR THE YEAR 1891,
BY
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MEDICAL OFFICER OF HEALTH.



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1892.

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ANNUAL

PUBLIC HEALTH
FOR THE

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ANNUAL REPORT
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The public health of Gibraltar during 1891 was exceptionally good and leaves very little to be said in a report dealing with that year alone. As the year, however, commences a new decennial period, it has been thought advisable to include in the report a review of the mortality and disease statistics of the previous decennial period. A review of this kind is for many reasons of special interest and importance, and especially so on account of the fresh facts obtained from the Census taken in April last. The population was then, for the first time, distributed in age-groups, uniform with the distribution adopted by the Registrar-General in England; and the importance of this will be understood, when it is stated, that, without such a distribution, the mortality statistics of Gibraltar cannot be compared accurately with those of other localities.

I have accordingly prepared and added, as an appendix to this report, several tables, dealing with the general and special death-rates, not only for 1891, but also for the decennial period 1881-90. A true record of this kind, besides being of value for future reference, is of much public interest, especially as it was impossible for my predecessors, in compiling the reports of previous years, to record accurate death-rates without the facts obtained by the Census of 1891.

In making the calculations necessary for these tables, all non-residents, those persons, namely, who have been landed sick from ships in harbour, or who have entered the Fortress specially for the purpose of medical or surgical treatment, have been carefully eliminated.

The Port and Harbour population, although enumerated in the Census, has not been included in the report. It can scarcely be considered under the influence of the sanitary or unsanitary conditions of the Fortress and is besides composed almost exclusively of foreigners. Their statistics, therefore, if dealt with at all, must be dealt with separately. To embody them with those of the resident Civil population would be a complication without any compensatory advantage, especially as the elements composing the Gibraltar population are already sufficiently complicated.

The population dealt with here is, accordingly, the total Civil population resident in the Fortress,* consisting of the *fixed Civil population* and the population of Aliens, residing here on temporary or other permits and called the *floating population*. It has been found that the latter materially *lower* the general death-rate of the total Civil population, on account of their age and sex distribution, restrictions regarding marriage, &c., making them practically a population living at the ages of lowest mortality. For example, in 1891 the death-rate of the fixed Civil population (16,906) was 20·70 per 1,000, while that of the total Civil population (19,100) was 18·95; the difference being due entirely to the low death-rate of 5·46 per 1,000 amongst the 2,194 resident Aliens. I should, indeed, on this account, have preferred to have kept the statistics of the fixed Civil population entirely distinct from those of the Aliens; but it was impossible to do so, on account of the fact, that, in the important matter of age and sex distribution, the Census return of 1891 does not differentiate between them; so that, in comparing the mortality of Gibraltar with that of other localities, the total Civil population only can be taken into account.

Those, who are accustomed to deal with statistics will readily understand these points. It will be enough to state, that each population has a *standard death-rate*, obtained from its age and sex distribution, as compared with that of England and Wales; and that the *recorded death-rate* must be multiplied by a *factor for correction*, obtained from the standard death-rate, to give the *corrected death-rate*, used in comparing one community with another.† Generally speaking the population of Gibraltar, as compared with that of England and Wales, has a proportionately small number living at the ages of high mortality and a proportionately large number at the ages of low mortality.‡ *The general death-rate must therefore be looked upon as representing for purposes of comparison a rate of mortality considerably higher than that recorded.*

It is necessary to make these few introductory remarks because statistics, and especially vital statistics, invariably lead to erroneous conclusions, unless carefully considered and analyzed. This is more especially the case, in dealing with the comparatively small numbers, afforded by the population of Gibraltar.

* The disease statistics of the Military population are of great importance in estimating the public health of the locality. They are dealt with in the Annual Reports of the Army Medical Department. I would note, however, that the deaths, &c., entered in the Registrar's records, as "*Military*," include many, who are not included in the "*strengths*" dealt with in Army statistics, so that there is a small number of residents left out of consideration altogether in the health reports of Gibraltar.

† For calculation of standard death-rate for Gibraltar, factor for correction, &c., &c., and corrected death-rates for decennial period 1881-90 see *Tables III. and V., appendix.*

‡ See Chart I. and Table II., appendix.

The number of births, recorded
This is 186 in excess of the deaths
and is equal to a birth-rate of
The birth-rate for the previous year
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Table XIII. (Appendix) gives the
corrected according to Census of
rates of some European countries

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BIRTHS.

The number of births, recorded during the year 1891, was 486. This is 136 in excess of the deaths amongst the *fixed* Civil population, and is equal to a birth-rate of 28.1 per 1,000 of that population. The birth-rate for the previous year was 29.1, and the average for the decennial period (1881-90) 29.35. The birth-rate is slightly more fluctuating than the gross birth-rates of European countries; a fact that can be readily accounted for by the small numbers dealt with. Table XIII. (Appendix) gives the birth-rates for the decennial period, corrected according to Census of 1881 and 1891, along with birth-rates of some European countries for comparison.

DEATHS.

The total number of deaths, recorded amongst the resident Civil population during the year, was 362. 350 of these occurred amongst the *fixed* Civil and 12 amongst the *floating* population. The deaths of 23 non-residents and of 57 of the "Military" population were also recorded, along with the deaths of 454 persons drowned in connection with the *Utopia* disaster.

The general or "Crude" death-rates, derived from these numbers, have already been stated, viz., 18.95 for the *total* and 20.70 for the *fixed* Civil population. They compare very favourably with the death-rates of previous years. The corresponding death-rates in 1890 were 22.17 and 24.71, and for the decennial period 23.06 and 25.83. All the figures are given in detail in Table IX.; and I have also prepared a Table (Table IV., Appendix), calculated from the Registrar General's Returns for 1891, shewing the corrected death-rates for the urban districts in England and Wales for comparison with the corrected death-rate for Gibraltar (viz., 20.08). It ought to be noted, however, that the former are higher than the average, while the latter is much lower; so that the comparisons for the year 1891 must not be taken as representative of the conditions that generally obtain.

It is impossible to foretell how far the low rate of mortality for the past year will be maintained. It must not be forgotten that 1884 shows vital statistics in every respect as favourable; and that it was followed by years of high death-rates, mainly due to epidemics of cholera, measles and diphtheria. At the same time it is satisfactory to note the steady improvement in the public health of Gibraltar, since the commencement of the works, that had in view the improvement of the sanitary condition of the Fortress; and it may be expected that this improvement will continue.

The following figures show the death-rates for the total Civil population, calculated, as far as possible, for quinquennial periods since 1866:—

Years.	Period.	Mean annual death-rate of period.
1851-66.	16 years.	29.25
1867-70.	4 years.	24.61
1871-75.	5 years.	23.88
1876-80.	5 years.	23.98
1881-85.	5 years.	23.68
1886-90.	5 years.	22.44
1891.	1 year.	18.95

This rate of improvement is apparent, not only in the general death-rates, but also in the special death-rates, and corresponds very nearly to the rate of improvement in England and Wales, since the passing of the Public Health Acts. No one can maintain, however, that the improvement in the sanitary condition of Gibraltar has reached its limit, and the further reduction of the death-rate, or its maintenance at the low rate of 1891, will depend very largely on the wisdom with which the principles of preventive medicine are applied, not only by the Sanitary Authorities but by individual members of the Community generally.

The first quarter of the year shewed by far the highest mortality; the last three quarters being exceptionally healthy, so far as can be judged from mortality statistics.

The following table shews this, a few months and for the decennial period (Table VIII.).

Quarter ending.	Deaths recorded during quarter in 1891.
31st March	131
30th June	86
30th September	70
31st December	75
Total	362

The lowest number of deaths occurred in 1891, only 19 deaths only being recorded in the year, the low annual mortality of 18.95 per 1,000.

The high mortality of the first quarter of the year was due to the large number of deaths amongst persons over 60 years of age, who also shewed the largest number of deaths. The temperature of the month was only 51° F., the lowest of the previous ten years; but the mean temperature was 56° F., as compared with 51° F. for the decennial period 1881-1890. During January the mean temperature being 51° F., compared with 56° F. for the same time it is to be noted that the

The following table shews this, and a detailed statement for the several months and for the decennial period will be found in the Appendix (Table VIII.).

Quarter ending,	Deaths recorded during quarters in 1891.	Annual death-rate per 1000 in 1891.	Mean annual death-rate per 1000 for each quarter of decennial period 1881-90.
31st March	131	27.2	23.2
30th June	86	18.0	24.2
30th September	70	14.6	23.5
31st December...	75	15.7	21.1
Total	362	18.95	23.0

The lowest number of deaths occurred in August and September; 19 deaths only being recorded in each of these months, equal to the low annual mortality of 10.93 per 1,000 for the two consecutive months.

The high mortality of the first quarter was mainly due to the number of deaths amongst persons over 60 years of age; 20 deaths amongst such persons being recorded in February alone. February also shewed the largest number of deaths at all ages. The mean temperature of the month was only slightly below the average for the previous ten years; but the mean relative humidity was exceptionally low, viz., 66%, as compared with 85.9% for the decennial period. The lowest minimum temperature recorded was somewhat higher than the average. During January the weather was exceptionally cold, the mean temperature being 51° F, compared with 56.5° for 1890 and 55.5° for the decennial period 1881-90; and many of the deaths recorded in February may have been indirectly due to this. At the same time it is to be noted that the total mortality amongst persons

over 60 years of age* in 1891 was less than that recorded in any previous year except 1884. It is, indeed, somewhat difficult to detect any direct relationship between the meteorological and general mortality statistics in Gibraltar. Investigations on this point are of much interest and I have included, amongst the Tables in the Appendix, a record of some facts, connected with this subject, along with a Chart of the relationship between certain zymotic diseases and the humidity and temperature of each month (see Table X and Chart III). I may also state that the weekly sick returns of the indigent poor, which are being submitted this year, are likely to be of much value in observing the influences of weather and season on the public health.

The "*infantile mortality*" during the year under review was 152·3 per 1,000 births; the total number of children dying amongst the fixed Civil population under 1 year of age being 74. This is 15 per 1,000 less than the average infantile mortality for the decennial period 1881-90; but 22 per 1,000 in excess of the infantile mortality of 1890.

The infantile mortality of Gibraltar is much higher than that of England and Wales, a fact that has been referred to several times in previous annual reports. With the short experience I have had of the customs prevalent here, I am, perhaps, scarcely justified in making any general statement regarding the causes of this high mortality, but I have certainly on several occasions been impressed with the lamentable want of knowledge of the ordinary principles of domestic hygiene, not merely amongst the poorer and less educated classes, but amongst the Civil population generally. The conditions of life, brought about by the neglect of these principles, are the chief causes of the mortality in question; though the fact must not be overlooked that the gradual improvement of unsanitary dwellings may be expected to have the same favourable effect upon the mortality of this age-group, as it undoubtedly has on the mortality of other age-groups.

The mortality amongst children under 5 years of age is considered more important as a sanitary test than the mortality of any subsequent age-group and requires, therefore, special attention. The number of deaths, recorded during 1891, was 128, equal to an annual mortality of 69·2 per 1,000 living at this age-group. The corresponding death-rate in 1890 was 76·0 per 1,000; and the average for the decennial period 85·5 (see Table VII., Appendix).

The chief diseases, influencing the mortality amongst children under 5, have undoubtedly been diarrhoea, diphtheria and measles. The sanitary defects, upon which the mortality from these diseases appears to depend, are more liable to affect an indigenous population in the early years of life. The survivors of early childhood appear to acquire a certain immunity against the injurious influences of these

* *i.e.*, Amongst persons most liable to be affected by weather changes.

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defects; so that their results are not so evident, (except amongst new arrivals in the locality), in the mortality statistics of later age-groups. It is, therefore, to the mortality statistics of the age-group "under 5 years" and to the nature of the diseases incident on new arrivals in Gibraltar that we must look for an indication of many of the causes, likely to affect the public health. When we consider that cases of diphtheria and tubercular disease are of frequent occurrence amongst the former, and cases of enteric and similar types of fever amongst the latter, we have to deal with facts of great significance, (see Tables XI. and XII).

Regarding the death-rates at *other age-groups*, there is nothing requiring special mention, except the remarkably low mortality for the age-group 15-20. The total number of deaths, recorded at this age-group during 1891, was 2, equal to a mortality of 1 per 1,000 of those living at these ages. The average death-rate of this age-group in England and Wales is over 5 per 1,000. Unless the rate in Gibraltar is accidental for the year 1891, it is difficult to account for this marked difference, except on the theory of immunity acquired in childhood, or on the absence here of over-pressure from school and other competitions, which tell disastrously on the ages of puberty in England. The death-rates for the several age-groups in 1891 are shewn in Table XIV. and Chart II. (Appendix), which have been prepared to explain the meaning of ages of high and low mortality.

The deaths amongst *males* during the year were 191 in number, equal to a mortality of 22.00 per 1,000; amongst *females* the number of deaths was 171, equal to a mortality of 16.41. The difference between these two death-rates is somewhat greater than the averages during the previous ten years. Calculated from the recorded death-rates, the death-rates for males during the decennial period is 25.5 and for females 20.8. This difference is still more marked when the rates are corrected according to the standard death-rate. Calculated in this way the difference between the male and female death-rate in Gibraltar is 6.84 per 1,000 for the decennial period 1881-90, and 7.55 for the year 1891 (see Table V., Appendix). In England and Wales a difference of about 2 per 1,000 has remained almost constant since 1838.

These facts shew to how great an extent the *female* population of Gibraltar influences the general death-rates; and it will be found on further analysis, that it is only at the ages of low mortality that these very striking differences appear, (see Table XIV). It is highly probable that one of the main causes of this is the presence in Gibraltar of a large number of female Aliens, employed as domestic servants, who would naturally return to their homes in Spain in the event of illness or unfitness for work. But another interesting fact must also be taken into account, namely, that out of a female population of 7,088 living between the ages of 15 and 65, as many as 5,495 declared no

cases landed in January died. The precautions, taken in landing and isolating these cases, have been thoroughly effectual in preventing the disease entering the town. Ever since the Small Pox Hospital was opened at the Inundation, the outbreak of Small Pox in the Town has not been traced to cases treated there, although no year has passed without some cases having been landed from the Bay. (see Table XII.)

Scarlet Fever.

No deaths from this disease were recorded in 1891. Five cases were notified, 4 in October and 1 in December. The four cases notified in October occurred in three different families, living widely apart, but all closely related to one another by marriage. The origin of the disease could not be traced, but there was a strong suspicion that it was brought from Tangier, where there was at the time an epidemic, about which, however, no exact information could be obtained. The two first cases, belonging to different families, were attacked with the disease simultaneously, two days after returning to their respective homes from a visit to a relative, recently returned from Tangier.

The case, notified in December, occurred in the Europa Light House, and appeared to be connected with a slight outbreak of Scarlet Fever amongst soldiers' children at Buena Vista.

Measles.

An exceedingly widespread epidemic was prevalent during the last quarter of 1890 and the first quarter of 1891. It had practically no influence on the general mortality, contrasting strongly, in this respect, with previous epidemics of measles in Gibraltar. In the epidemic of 1890-91, 560 cases were notified and 11 deaths; in the previous epidemic in 1887 there were 861 notified cases and 83 deaths, and in a third epidemic in 1882 there were 24 deaths.

Chart IV. Appendix shews graphically the points of resemblance and contrast between these epidemics. The notification of infectious diseases was not compulsory in 1882, but the character of the mortality points to an epidemic with a monthly distribution very similar to that of 1887.

There is little doubt that the wide-spread distribution of the disease here is to some extent due to the ignorant and almost criminal custom of purposely exposing children to the infection, in the hope that they may get it and have done with it. Perhaps, if parents realized what a fatal disease it has proved to be in Gibraltar in the past, if they realized that it is also a frequent cause of permanent disability and chronic suffering, they would be more ready to assist in preventing its spread in the future.

The causes of the excessive mortality of measles here depend upon the sanitary condition of living rooms, which will be referred to later on. In the meantime I desire to draw special attention to the influence of this preventible disease on the general mortality during the decennial period 1881-90. An idea of its importance may be gathered from the following Table of the total deaths from the principal zymotic diseases, recorded amongst the resident Civil population during that period :—

Diseases.	Number of Deaths recorded during period 1881-90.
Diarrhœa	422
Diphtheria	169
Measles	115
Enteric Fever.....	86
Small Pox	37
Whooping Cough.....	31
Continued Fever	26
Cholera.....	20
Scarlet Fever	8
Typhus Fever	1
Total.....	915

This disease is to a certain extent
twelve cases were notified and sev
crease compared with previous year
notified was 46 and the deaths 2
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Tables IX. and XII, Appendix
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(see Table X. and Chart III)

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Enteric

There were 13 cases and 4 de
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but, on the other hand, a distinct increase in
ric Fever. As these facts are of much signif
noted regarding new arrivals, a Table shewin
the Military population is given in the Appen

Diphtheria.

This disease is to a certain extent endemic in Gibraltar. In 1891 twelve cases were notified and seven deaths recorded; a marked decrease compared with previous years. In 1890 the number of cases notified was 46 and the deaths 20; while the average number of deaths, annually, for the decennial period 1881-90 was 16.9, (see Tables IX. and XII., Appendix). The distribution of the disease in 1891, according to months, was 5 cases in January, 3 in February, 1 in March, 2 in August, 1 in November and 1 in December. The record of the last ten years shews that the disease is always more frequent in the months of high relative humidity and low temperature, contrasting thus in a marked manner with other zymotic diseases of an endemic character, viz., Diarrhoea, Enteric and continued Fevers (see Table X. and Chart III).

Most of the cases reported occurred in houses where Diphtheria had broken out from time to time in previous years; and, although some of them were comparatively new houses, the soakage of organic matter into the subsoil from a defective drain, or other sources of organic impurity in the surroundings, was discovered in nearly all the cases. These points will be further alluded to in dealing with the sanitary conditions of the Town during the year.

Enteric Fever.

There were 13 cases and 4 deaths from this disease amongst the resident Civil population during the year, and 8 cases and 5 deaths amongst persons landed from the Bay.* In 1890 there were 7 cases and 3 deaths, while the average annual mortality from the disease for the decennial period was 8.6. Though the disease, therefore, was more prevalent than in 1890, it shews a considerable decrease, when compared with the decennial period. There has, indeed, been a considerable improvement in recent years in the mortality from this disease amongst the Civil population. (see Tables IX. and XII.).

It has been stated, that the records of deaths from Enteric Fever increase as the records of deaths from simple continued Fever diminish. In other words, it has been held that many cases, recorded in past years as cases of simple continued or "Rock" Fever, have really been cases of Enteric Fever. Whether this is so or not is a question that cannot be entered into here. What is of interest from a sanitary point of view is that both classes of fevers are distinctly diminishing in Gibraltar amongst the resident Civil population.†

* Amongst the Military population in 1891 there were 14 cases of Enteric Fever and 3 deaths, against 28 cases and 4 deaths in 1890.

† Amongst the Military population there has been an extraordinary decrease in the number of cases of Simple Continued Fever during the quinquennial period 1886-90, but, on the other hand, a distinct increase in the number of cases and deaths from Enteric Fever. As these facts are of much significance, in reference to what has already been stated regarding new arrivals, a Table shewing detailed statistics of these Fevers amongst the Military population is given in the Appendix (Table XI.).

Annual report of
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Number of Deaths
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422

160

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86

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31

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915

Take for example the five years 1881-85, and compare them with the five years 1886-90. In the former quinquennial period there were 53 deaths from Enteric and 14 from Simple Continued Fever, giving a total of 69 and an annual average of 13·8; whereas, in the latter, the deaths were 33 from Enteric and 13 from Simple Continued Fever, being a total of 46 and an annual average of 9·2 only. (For details see Table IX.).

The monthly distribution of the cases reported was 3 in January, 3 in February, 1 each in March, August and September. The cases, landed from the Bay, were notified as follows:—2 in January, 4 in September, 1 in October and 1 in December.

Simple Continued Fever.

One death was recorded from this disease, namely, in the month of August. It is a matter of regret that cases of Continued Fevers have not been included amongst those diseases requiring notification. The mortality from the disease is low, and very little information can be obtained regarding its prevalence from the mortality alone. The new forms, issued this year by the Commissioners, will bring the notification of such diseases more in accordance with the notification required by the Public Health Acts in England. In the meantime, its prevalence during the decennial period must be judged from Army statistics, from which the Table (Table XI.) given in the Appendix has been compiled. The remarkable decrease in the disease during the last five years has been already referred to in foot-note (p. 13); and I have no doubt further evidence of a like nature could be obtained. It is stated, for example, in the Annual Report on the Public Health of Gibraltar for the year 1886, that, in 1876, as many as 50 deaths were recorded from Simple Continued Fever in that year, a mortality which would shew that the disease must then have been universal.

Diarrhæal Diseases.

These include such diseases as dysentery, infantile and summer diarrhœas, often more accurately returned as cases of *Enteritis*. 42 deaths were recorded from these diseases during the year. This is exactly the average for the decennial period 1881-90, and 3 less than the number recorded in 1890.

April was the only month which shewed no death from these diseases. By far the larger number of deaths occurred in the Summer and Autumn quarters, as was to be expected. In the first quarter there were 6 deaths, in the second quarter 9, in the third quarter 12, and in the fourth quarter 15. Table X. and Chart III. shew the remarkable prevalence of these diseases during the months of low humidity and high temperature.

TUBERCULAR

The number of deaths from Tuberculosis have included those returned as Phthisis, was 53, as compared with 49 in the decennial period, and an average of 63 for the decennial period to a mortality of 2·77 per 1,000 for the decennial period. The details are found in Table IX. It will be noted that there is a permanent decrease in the number of deaths from Tuberculosis during the last four years; a most important result of the persistent efforts, made by the predecessors, to improve the sanitary conditions of the Town. The still common allusion will be made to this in the diseases here is, however, a fact of more than anything else, the condition of the inhabitants of this Fortress live.

RESPIRATORY

In estimating the deaths from the Lungs, returned as Phthisis; and which are shewn elsewhere as Tuberculosis (Table I.) of diseases for 1881-90, are no cases shewn as Phthisis Pulmonum, that a more accurate classification would be cases as Tubercle of the Lungs.

The number of cases recorded, and in the decennial period, a mean of 5·18 per 1,000 for 1891, Table IX). These numbers give a decrease in the number of deaths during the last three years, though the decrease in the deaths from Tuberculosis of these deaths were due to Tubercular Pneumonia (31), Croupous Pneumonia (15). The first affected the ages under 5 and above 60, the third the fourth old age and infancy, (see Table IX.).

SANITARY

I do not feel called upon to enter into a main sanitary defects which are liable to health and to contribute towards the improvement of the same.

TUBERCULAR DISEASES.

The number of deaths from Tubercular Diseases, amongst which I have included those returned as Phthisis Pulmonalis and Consumption, was 53, as compared with 49 during 1890 and a mean annual average of 63 for the decennial period 1881-90. This is equivalent to a mortality of 2.77 per 1,000 for 1891, and 3.39 per 1,000 for the decennial period. The detailed statistics for each year will be found in Table IX. It will be noticed that there has been a steady and permanent decrease in the number of deaths from these diseases during the last four years; a most satisfactory and encouraging result of the persistent efforts, made by the Commissioners and by my predecessors, to improve the sanitary conditions of living rooms. Further allusion will be made to this in connection with the sanitary conditions of the Town. The still comparatively high mortality of these diseases here is, however, a fact of great significance, and indicates, more than anything else, the conditions under which many of the inhabitants of this Fortress live.

RESPIRATORY DISEASES.

In estimating the deaths from these diseases I have been obliged, for comparison with other years, to include those cases of Tubercle of the Lungs, returned as Phthisis; and similarly those cases in 1891, which are shewn elsewhere as Tubercle of the Lungs. In the general Table (Table I.) of diseases for 1891 it will be observed that there are no cases shewn as Phthisis Pulmonalis, as it has been considered that a more accurate classification would be obtained by shewing such cases as cases of Tubercle of the Lungs.

The number of cases recorded, in 1891, was 99; in 1890, 107, and in the decennial period, a mean annual average of 115. (See Table IX). These numbers give a mortality from Respiratory diseases of 5.18 per 1,000 for 1891, and 6.13 for the decennial period. The decrease in the number of deaths from these diseases is marked during the last three years, though not of so definite a character as the decrease in the deaths from Tubercular diseases. Nearly the whole of these deaths were due to Tubercle of the Lungs (36), Catarrhal Pneumonia (31), Croupous Pneumonia (15), and Bronchitis (15). The first affected the ages between 20 and 55, the second the ages under 5 and above 60, the third middle age and old age, and the fourth old age and infancy, (see Table I).

SANITARY CONDITIONS.

I do not feel called upon to enter into a detailed statement of the main sanitary defects which are liable to seriously affect the public health and to contribute towards the outbreak and spread of epidemic

diseases. The report of Major Tulloch is too recently before the Commissioners to make it necessary for me to do so.

But, as it may be some time before the public health can benefit by his recommendations, I feel it my duty to recapitulate those points in the sanitary conditions of the Fortress, which my predecessors and myself have endeavoured to bring to the notice of the Commissioners in dealing with individual or special cases.

PREVENTION OF INFECTIOUS DISEASE.

NOTIFICATION.—The section of the Medical Ordinance requiring compulsory notification works well, and I have to acknowledge the readiness and courtesy with which individual medical practitioners have assisted the Medical Officer of Health in dealing with notified cases of infectious diseases. The new forms issued, at the beginning of 1892, add to the list of diseases requiring notification, but only to the extent necessary to bring them in correspondence with the list of diseases required by the Public Health Act for London. In my opinion tubercular diseases should also be notified, but, at present, general medical opinion is not unanimous on this point, and there might consequently be much difficulty in obtaining correct notification of these diseases.

Many infectious and contagious diseases are likely to be introduced into Gibraltar, not only by human intercourse, but also through its food and especially through its milk supply. It would therefore be of the greatest assistance in investigating the origin of such diseases, if as early information as possible could be obtained by the Medical Officer of Health, through the Commissioners, regarding the existence of epidemics in neighbouring territories. For example, in 1891, there were epidemics of Measles in Campamento, Small Pox in Cadiz, and epidemic sore-throat in Tangier, about which I obtained information through private sources only.

VACCINATION.—The Vaccination of children born in the Fortress has been very thoroughly carried out during the year. It is necessary, however, to note that primary vaccination in infancy is not sufficient to protect absolutely from Small Pox in time of epidemics of the disease. At such times it is very advisable that as many as possible should submit to re-vaccination; and in all cases there should be compulsory re-vaccination of attendants on Small Pox cases.* As a well-known sanitary authority recently expressed it, we should aim at putting a *cordon* of re-vaccinated persons around a Small-Pox patient. Both my immediate predecessors urged a measure of this kind. In Gibraltar it seems almost imperative, when one considers the history of the disease here in recent years, and how readily it may be

* To prevent misunderstanding, I may mention that this very necessary precaution has been taken in the case of the attendants on patients in Hospital.

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nation is not compulsory.

ISOLATION.—As the Commis-
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SCHOOL ATTENDANCE.—Epid
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Hospital patients, especially of tho

introduced from neighbouring territories, where even primary vaccination is not compulsory.

ISOLATION.—As the Commissioners are aware, the means of isolating cases of infectious diseases are the Segregation Wards of the Colonial Hospital and the ten beds in the Small Pox Hospital at the Inundation, supplemented by tents, if necessary. With regard to the former, I am only repeating what has already been stated in previous Annual Reports when I say, that they are placed too much in the midst of a densely populated area to be considered satisfactory for the isolation of dangerously infectious diseases. The Small Pox Hospital, even in a comparatively small epidemic, would have to be supplemented by tents, which at some seasons of the year might afford but poor shelter to the patients, might seriously interfere with their willingness to be removed to Hospital, and lead to consequent concealment of disease. I would, therefore, strongly urge the Commissioners to consider the facilities afforded of extending such Hospital accommodation by the employment of moveable Hospital huts, many forms of which are now constantly employed throughout Europe as Segregation or Supplementary Hospitals. These huts, of which the "Doecker" pattern is perhaps the best, are comparatively cheap and can be stored in small space until required for use.

SCHOOL ATTENDANCE.—Epidemics of diseases, such as Diphtheria, Measles and Scarlet Fever, can very frequently be stopped by the regulation of School attendance. When Scarlet Fever was threatened in November last, a mutual understanding was come to between the Medical Officer of Health and the School Authorities, by which no members of the families, where Scarlet Fever was present, were allowed to attend School, until the Medical Officer of Health had certified that all risk of infection had disappeared. The regulation of School attendance in this way might be put upon a much more satisfactory footing, than by the mutual understanding, to which I have alluded.

DISINFECTION.—The means of disinfecting articles of bedding, clothing, &c., are somewhat limited. It is true that both at the Small Pox Hospital and at the Colonial Hospital there are apparatus for disinfecting by super-heated steam; but, although it is understood that these can be made available for general use, in my opinion a public disinfecting Establishment or a moveable apparatus, of which many kinds are now manufactured, would not only be more effectual in preventing the spread of infectious diseases, but perhaps be more economical and convenient. There are only two certain means of destroying infection in bulky articles, namely, *cremation* and *disinfection by steam*; and, in addition to what has just been said about the latter process, I would draw attention to the former process, as the most satisfactory method of dealing with the excreta of Hospital patients, especially of those severe cases of Enteric Fever,

which are landed occasionally from ships hailing from the Black Sea ports. The present means of disinfecting the excreta of such cases are not sufficient, in the present defective state of the sewers, to prevent the possibility of drinking water, &c., being contaminated with the active germs of the disease, and *cremation* would alone remove the danger.

In preventing the spread of Tubercular diseases, far too prevalent in Gibraltar, thorough and complete disinfection of rooms, where such cases have lived, seems most necessary in addition to such minor but important details as the disinfection of spittoons, &c. As, however, these diseases are not notified, measures of this kind must be left at present to the discretion of individual medical practitioners.

The free use of disinfectants in sewers, house drains, refuse receptacles, &c., should be unremitting. During the summer months of 1891, Sulphate of Iron and Chloride of Lime were used to disinfect the main sewers, and, I have no doubt, much of the freedom from disease during these months was due to their use. The Commissioners are aware that it is proposed to carry out practical experiments with the Sulphate of Iron process during the ensuing Summer. Its value, as a disinfectant, is greatly increased by being combined with the Lime process, but the Commissioners should be prepared for a somewhat unsightly fore-shore from the black effluent, that will be caused by the action of the Iron on the sewage.

It may be well to note here that the Charcoal baskets, at present placed over some of the surface ventilators, are absolutely useless, and any expense incurred in maintaining them could be saved.

STREET SCAVENGERING AND REMOVAL OF HOUSE REFUSE.

Much remains to be done to perfect the arrangements for scavenging streets, storing, collecting and disposing of refuse of all kinds. The new dust destructor will be of immense value in disposing of refuse in a way innocuous to the public health, but at present the means of temporary storage of refuse in house refuse-receptacles is of a primitive character. In a hot climate, more particularly than in a cold climate, all decaying animal and vegetable matter should be removed from the midst of a community with as little delay as possible; and, until such removal can be carried out, the refuse must be stored in properly constructed dust bins. Unfortunately at least 50 per cent. of the houses in Gibraltar are destitute of anything worth the name of dust bin. The old rotten wooden barrels, used as such, only perpetuate the danger to the public health arising from decaying refuse.

Nothing aids the effect of warmth in developing the germs of decomposition so much as moisture; and the Commissioners have very

wisely insisted upon the watering of
only after the animal refuse has been
of a greater number of scavengers app
principle effectually.

SEWERAGE

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Gibraltar.

WATER SUPPLY

The system of constructing tanks
satisfy be remedied now, but many of
tanks derive their impurities, have be

wisely insisted upon the watering of the streets being carried out only after the animal refuse has been removed; but the employment of a greater number of scavengers appears necessary to carry out this principle effectually.

SEWERAGE.

Many of the *house drains* have been examined and relaid during the year. Some of them were disclosed in connection with outbreaks of Enteric Fever or Diphtheria, and their condition confirmed in a most convincing manner the surmises regarding them, expressed by Major Tulloch. As the Commissioners are aware, the disclosure and relaying of all old house drains have been strongly recommended during the year. Until their defects are remedied, indeed, until as many as possible of them are carried entirely outside the buildings by condemning old and erecting new W.Cs., where practicable, the progress of sanitation here will be delayed and the public health constantly exposed to danger.

DRAIN VENTILATORS.—Great progress has been made during the year in improving the ventilation of house drains. Many of the old ventilating pipes, and indeed some of more recent construction, are so fantastically shaped and bent as to cause probably as much resistance to the escape of sewer gas, as the traps, which they are intended to protect. Moreover, very little advantage seems to have been taken of the laws of absorption of heat in maintaining an up-current, not only in these ventilators, but in the ventilating shafts of the main sewers. The consequence is, that, after a hot summer's day, they cool rapidly and a down current, reversing the order of things and converting the street surface ventilators into air outlets, instead of air inlets, is the result; a result well known to those who have the misfortune to be near one of them at the time. If ventilating pipes and shafts were invariably placed in positions, where they could be exposed as long as possible to the sun, and if they were *painted black*, the absorbed heat would maintain an up-current for a much longer time after sunset, than is the case at present.

However, the nuisance from sewer gas can only be abated by attacking the sewage matter itself by means of disinfectants, which will prevent further decomposition. At the same time, it is as well to note that with a short main sewer, well-laid drains, an outfall admitting of a constant discharge and with sufficient flushing from houses and mains, there should be no such thing as sewer gas apparent in Gibraltar.

WATER SUPPLY.

The system of constructing tanks under houses cannot unfortunately be remedied now, but many of the sources, from which such tanks derive their impurities, have been slowly but surely removed

during recent years. The impurities arising from the collecting areas have been ably dealt with by my predecessors. Dr. Collins especially pointed out the danger of having terraces connected with tanks. It is a question beset with many difficulties, as many of the tanks are almost entirely dependent on the terraces for their supply of water. The Commissioners have, therefore, been perhaps justified in allowing a certain amount of latitude regarding their employment as collecting areas. In private houses occupied by one family, who presumably jealously guard the purity of their drinking water, the connection of the terraces is not likely to seriously affect the health of the Community at large. The case is, however, very different in dealing with tenements let out to separate families. It is a matter of common experience, that, where separate families have a conjoint responsibility in maintaining the cleanliness of common stairs, courtyards, terraces, &c., there especially will an unsatisfactory state of affairs be found. In such houses no half measures are of any avail and the risk of contamination of the drinking water is so great, that the absolute disconnection of the terraces should be a hard and fast rule. I am the more of this opinion, because the other alternative, namely, rendering the terraces inaccessible, is a very great hardship and deprives the tenants of what adds much to the pleasures and amenities of life. Indeed I go further, and look upon these terraces, as a very important means of enabling many to enjoy the pure fresh air, which is necessary to counteract the evils of the methods of house and street construction, that have prevailed in Gibraltar.

But whatever may be the impurities arising from collecting areas, they are as nothing, when compared with those that are liable to occur from the position of the tank itself. Placed, as I have constantly seen it, with an unprotected covering, under dirty bedrooms, greasy kitchens, filthy storerooms, patios, shops and public passages and often surrounded on all sides by defective drains, placed in such a position, it must be considered one of the gravest sanitary defects here, and one of the chief channels, by which enteric fever, cholera and many less apparent and milder diseases are propagated. Fortunately much has been and is being done to have the drains in the neighbourhood of such tanks diverted, and properly laid in cement concrete, and to have the mouths and inlet pipes protected, as thoroughly as possible. At the same time, the practice of habitually boiling the tank water before use cannot be too strongly urged upon the inhabitants of Gibraltar. By this means alone can the germs of disease propagated by the drinking water be effectually destroyed. It may be that for a long time the tank may escape pollution, but the opportunities of such pollution are so great that no one can tell how soon the specific germ of some formidable disease may obtain access.

There is only one satisfactory point worth mentioning. The pollution of the specific germ of enteric fever, is not distributed epidemic, such as has been observed where inhabitants are supplied with water from a single source.

MILK SUPPLY

The Milk supply of Gibraltar is at present under sanitary control; but the measures, which are being taken, will do much towards improving the quality of the milk. The whole of the milk supply is under the supervision of the Milk Commissioners, who are urgently demanded. The whole of the milk supply is under the supervision of the Milk Commissioners, who are urgently demanded. The whole of the milk supply is under the supervision of the Milk Commissioners, who are urgently demanded.

FOOD SUPPLY

Investigations, not yet complete, are being conducted with the manufacture of food.

With regard to market produce, the health of the population is a matter of great importance. The health of the population is a matter of great importance. The health of the population is a matter of great importance.

CONDITION OF LIFE

The bad ventilation, dampness and overcrowding have never been lost sight of in dealing with the health of the population. The part they play in the propagation of respiratory diseases is thoroughly understood. The health of the population is a matter of great importance. The health of the population is a matter of great importance.

* Two kinds of Milk are sold; the "leche pura" at 2d. and 2½d. a pint. The latter is water, which may come from a surface well in the neighbourhood of the town.

† Evers' Handbook of Geographical and Historical Statistics.

There is only one satisfactory point about this system of tanks. It is worth mentioning. The pollution of one or two, say with the specific germ of enteric fever, is not likely to set up an extensively distributed epidemic, such as has been recorded frequently in cities, whose inhabitants are supplied with drinking water from a common source.

MILK SUPPLY.

The Milk supply of Gibraltar is at present more or less devoid of sanitary control; but the measures, contemplated by the Commissioners, will do much towards improving the existing conditions and are urgently demanded. The whole question of the Milk supply is one deserving most earnest consideration. It has attained great prominence in recent years and cannot be neglected here. It is calculated that about $\frac{1}{4}$ th of the total supply comes from outside the Fortress, from a source, that is to say, over which the Commissioners have no control.* It is fortunate that this supply has to be frequently boiled to prevent its becoming unsaleable.

FOOD SUPPLY.

Investigations, not yet complete, are being made into certain matters connected with the manufacture of bread, aerated waters, &c.

With regard to market produce, 17 carcasses of diseased pigs, 24 of diseased bullocks, 2 of diseased sheep and several quantities of fish and vegetables, in various stages of decomposition, were brought to the Market during the year, and dealt with under the provisions of the Sanitary Order in Council.

CONDITION OF LIVING ROOMS.

The bad-ventilation, dampness and overcrowding of living rooms have never been lost sight of in dealing with the sanitation of Gibraltar. The part they play in the production of tubercular and respiratory diseases is thoroughly recognized. Among the detrimental influences connected with the occurrence of phthisis "we have, according to nearly unanimous opinion, to assign the first place to the *bad domestic hygiene*, to the influence of continuous residence in crowded living rooms and work rooms, tainted with organic and inorganic exuviae, ill-ventilated and damp. In fact, it would be hard to find any factor in the production of phthisis, which can claim more importance than that."† The popular mind, however, has been slow to recognize these facts, and it is too true,

* Two kinds of Milk are sold; the "*leche pura*," at 3d. or 4d. a pint, and the "*leche con agua*," at 2d. and 2½d. a pint. The latter frequently contains 60 per cent. of added water, which may come from a surface well in Linea for all that is known to the contrary!

† *Hirsch's Handbook of Geographical and Historical Pathology*, Vol. III., page 217.

that many of the ventilators,* ordered by the Commissioners, have been blocked up by the tenants themselves. Still there is no doubt, that the apparently permanent diminution in recent years in the number of deaths from tubercular and respiratory diseases is due to the persistent efforts of my predecessors to obtain better conditions of domestic hygiene, by the ventilation of living rooms and by removing the causes of dampness.

With regard to the latter, little more can be done than has been done already, so long as there exists the unavoidable necessity of washing clothes in the courtyards of poor and overcrowded tenements. On washing days I have seen almost every available spot in some of these courtyards occupied with washing tubs and dripping clothes. The puddles caused by these exist till next washing day and the pavement generally remains cold and damp. Sunshine seldom reaches these wretchedly unsanitary patios. They are never warm or dry, and a very characteristic heavy dank smell may be noticed in them and in the adjoining living rooms. If laundries could be erected at convenient sites to meet the requirements of the poorer classes and especially of the laundresses, who form a very necessary and important section of the community, washing in such courtyards could be prohibited. Were such a prohibition thus made possible, the condition of the houses of the poor would be immensely improved, and tubercular diseases, the reproach of Gibraltar with its favoured climate, would be still more diminished in the locality.

The dampness too, caused by tanks and wells, situated under houses, must not be overlooked. The Tanks cannot unfortunately be avoided, but wells in such positions, being no longer necessities, and supplying in most cases water very similar to the "sanitary" water, are an unnecessary source of danger to health. Such wells should be unhesitatingly condemned, as well as those which are heavily contaminated with organic impurities, and used, as I have seen them used, in connection with the manufacture of articles of food and drink.

OVERCROWDING.

Overcrowding has formed a subject of consideration for years. My experience during 1891 of aggravated cases of this nuisance is that it cannot be appreciably diminished under existing Bye-Laws. It can be removed from one place only to appear in another. In other words it can be "chevied" about the Town, but that is all. The system of "Ticketing Houses," applied in Glasgow, might be found to work satisfactorily here; but overcrowding cannot in my opinion be radically dealt with except by measures, such as those authorized in England under the Labourers' and Artisans' Dwellings Improvement

* Draughts, caused by these ventilators, can be greatly diminished by increasing their superficial area, or by the addition of a Sheringham valve.

Acts. I refer to the numerous old and blocks of houses, that can never be except by demolition and reconstruction built on sanitary principles and suitable of the most urgent demands in connection with the health of the community. Health in Gibraltar, though we cannot owners of property have already done

In these remarks on the Vital and conditions, on which the chief prove appear to depend, I have perhaps not points, with which the Commissioners which they are already taking action. much the fact that my predecessors them to notice. Without, however, st main features, I could not feel that I the Commissioners a summary of the fa knowledge during the year, and upon expect information, in justification of t dealing with individual cases.

W. G. MACPHERSON

Surgeon

February, 1892.

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Royal College
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Nov 25, 2015

Acts. I refer to the numerous old and unsanitary houses, or rather blocks of houses, that can never be put into good sanitary order except by demolition and reconstruction. The construction of houses, built on sanitary principles and suitable for the poorer classes, is one of the most urgent demands in connection with questions of Public Health in Gibraltar, though we cannot fail to recognize what some owners of property have already done to meet this demand.

In these remarks on the Vital and Disease Statistics and Sanitary conditions, on which the chief preventible diseases in Gibraltar appear to depend, I have perhaps entered into details and repeated points, with which the Commissioners are well acquainted and upon which they are already taking action. Nor can I recognize too much the fact that my predecessors spared no pains in bringing them to notice. Without, however, stating, as I have done, their main features, I could not feel that I had conscientiously laid before the Commissioners a summary of the facts, which have come to my knowledge during the year, and upon which they have a right to expect information, in justification of the measures recommended in dealing with individual cases.

W. G. MACPHERSON,

Surgeon-Captain, Medical Staff,

February, 1892.

Medical Officer of Health.

APPENDIX

TO THE

ANNUAL REPORT ON THE

OF

GIBRALTAR

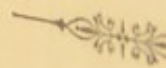
FOR THE YEAR

BY

W. G. MACPHERSON

Surgeon-Captain, M.D.

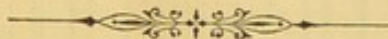
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APPENDIX
TO THE
ANNUAL REPORT ON THE PUBLIC HEALTH
OF
GIBRALTAR,
FOR THE YEAR 1891,
BY
W. G. MACPHERSON, M.A., M.B.,
Surgeon-Captain, Medical Staff,
MEDICAL OFFICER OF HEALTH.



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TABLE

Deaths registered in Gibraltar during the year 1891, shewing Diseases

CAUSES OF DEATH.	At all ages.	Under 1 yr. of age.	1 year.	2 years.	3 years.	4 years.	Total under 5 years.	OTHER AGE-GROUPS.									
								5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75 and upwards.
General Diseases	181	51	17	3	7	4	82	8	2	2	3	16	19	11	6	12	20
Local Diseases	176	23	14	5	2	...	44	2	4	...	10	6	16	16	28	35	15
Poisons (none) .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Injuries	5	...	...	...	...	...	...	1	...	...	...	...	...	3	1	...	...
Total	362	74	31	8	9	4	126	11	6	2	13	22	35	30	35	47	35
CLASS I.																	
GENERAL DISEASES.																	
GROUP A.— <i>Specific febrile diseases.</i>																	
Measles	3	1	1	1	...	...	3	...	...	...	...	...	...	...	...	...	...
Influenza	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Whooping Cough	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Diphtheria	7	...	2	1	1	2	6	1	...	...	...	...	...	...	...	...	...
Continued Fever	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Enteric Fever	4	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...
Diarrhoea	40	29	4	1	3	...	37	...	1	...	...	...	...	...	...	1	1
Dysentery	2	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Erysipelas	3	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...
Septicaemia	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Syphilis	5	...	...	...	...	...	...	...	...	...	...	1	2	1	...	1	...
GROUP B.																	
Alcoholism	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
GROUP C.— <i>Developmental.</i>																	
Immaturity	6	6	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...
Malformation	2	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Debility	12	6	3	...	...	...	9	1	...	...	...	...	...	...	1	1	...
Old age	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	14
GROUP D.— <i>Not classified.</i>																	
Rheumatic Fever	3	...	...	...	...	...	...	1	1	...	...	...	...	1	...	...	...
Malignant New Growth	14	...	...	...	...	...	...	...	...	...	...	...	...	3	4	1	3
Tubercle of Lungs	36	...	...	...	...	...	...	1	...	1	3	11	13	3	2	...	2
“ Glands	3	1	1	...	...	...	2	1	...	...	...	...	...	...	...	...	...
“ Brain	14	3	3	...	3	2	11	3	...	...	...	...	...	...	...	...	...
Rickets	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Anæmia	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Diabetes Mellitus	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Total	181	51	17	3	7	4	82	8	2	2	3	16	19	11	6	12	20
CLASS II.																	
LOCAL DISEASES.																	
NERVOUS SYSTEM.																	
Congestion of Brain	5	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	2
Dropsy of Brain	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Meningitis	5	3	...	...	...	...	3	...	...	...	1	...	...	...	1	...	...
Encephalitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Myelitis	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Tabes Dorsalis	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Apoplexy	16	...	...	...	...	...	...	...	...	...	...	1	2	2	6	4	1
Paralysis—General	4	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...
Hemiplegia	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...
Convulsions Infantile	4	2	2	...	...	...	4	...	...	...	...	...	...	...	...	...	...

1. Cause death, and ages at death, amongst 10							
CAUSES OF DEATH.	At all ages.	Under 1 yr. of age.	1 year.	2 years.	3 years.	4 years.	
CIRCULATORY SYSTEM.							
Heart Disease (not specified)	13	...	...	...	...	...	...
Pericarditis	2	...	...	...	...	...	...
Endocarditis	13	...	...	...	...	...	...
Fatty Degeneration	1	...	...	...	...	...	...
Angina Pectoris	1	...	...	...	...	...	...
RESPIRATORY SYSTEM.							
Bronchitis	15	4	3	...	...	...	...
Congestion of Lungs	1	...	...	...	...	...	...
Croupous Pneumonia	15	...	...	...	...	...	...
Catarrhal Pneumonia	31	11	6	4	2	...	...
Pleurisy	2	...	...	...	...	...	...
Pulmonary Apoplexy	1	...	...	...	...	...	...
DIGESTIVE SYSTEM.							
Toothache	4	1	3	...	...	...	...
Obstruction of Intestine	1	...	...	...	...	...	...
Hepatitis—Acute	1	1	...	...	...	...	...
—Chronic	9	...	...	...	...	...	...
Peritonitis	3	...	...	...	...	...	...
Typhitis	1	...	...	...	...	...	...
URINARY SYSTEM.							
Nephritis	4	...	...	...	...	...	...
Bright's Disease	3	...	...	...	...	...	...
Cystitis	3	...	...	...	...	...	...
GENITAL SYSTEM.							
Urinary Fistula	1	...	...	...	...	...	...
Metritis	1	...	...	...	...	...	...
Metrorrhagia	1	...	...	...	...	...	...
ORGANS OF LOCOMOTION.							
Osteomalacia	1	...	...	...	...	...	...
CONNECTIVE TISSUE.							
Abscess	3	1	...	...	...	...	...
DISEASES OF SKIN.							
Gangrene	5	...	...	...	...	...	...
Total of Local Diseases	176	23	14	5	2	...	...
CLASS III.							
Poisons (none) .....	...	...	...	...	...	...	...
CLASS IV.							
INJURIES.							
Burns	1	...	...	...	...	...	...
Multiple Injury	1	...	...	...	...	...	...
Fracture of Skull	2	...	...	...	...	...	...
Fracture of Arm	1	...	...	...	...	...	...
Total of Injuries	5	...	...	...	...	...	...
Total of all causes	362	74	31	8	9	...	...

I.
causing death, and ages at death, amongst total resident Civil Population.

CAUSES OF DEATH.	At all ages.	Under 1 yr. of age.	1 year.	2 years.	3 years.	4 years.	Total under 5 years.	OTHER AGE-GROUPS.									
								5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75 and upwards.
CIRCULATORY SYSTEM.																	
Heart Disease (not specified).....	12	...	...	...	...	...	...	...	2	...	2	...	2	...	2	3	1
Pericarditis	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Endocarditis	12	...	...	...	...	...	...	...	1	...	...	...	1	5	3	2	...
Fatty Degeneration.....	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Angina Pectoris.....	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
RESPIRATORY SYSTEM.																	
Bronchitis.....	15	4	3	...	...	...	7	...	...	...	...	1	2	...	1	2	2
Congestion of Lungs...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Croupous Pneumonia...	15	...	...	...	...	...	...	1	...	2	1	4	1	...	3	3	...
Catarrhal Pneumonia...	31	11	6	4	2	...	23	1	...	...	...	...	...	1	2	1	3
Pleurisy.....	2	...	1	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Pulmonary Apoplexy...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
DIGESTIVE SYSTEM.																	
Teething	4	1	3	...	...	...	4	...	...	...	...	...	...	...	...	...	...
Obstruction of Intestine	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Hepatitis—Acute	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
“ —Chronic.....	9	...	...	...	...	...	...	...	...	1	1	...	2	1	4	...	...
Peritonitis	3	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...
Typhlitis	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
URINARY SYSTEM.																	
Nephritis	4	...	...	...	...	...	...	...	...	...	...	1	...	...	2	1	...
Bright's Disease	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1
Cystitis	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
GENERATIVE SYSTEM.																	
Urinary Fistula.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Metritis	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Metrorrhagia	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
ORGANS OF LOCOMOTION.																	
Osteomalacia	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
CONNECTIVE TISSUE.																	
Abscess.....	3	1	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...
DISEASES OF SKIN.																	
Gangrene	5	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	1
Total of Local Diseases...	176	23	14	5	2	...	44	2	4	...	10	6	16	16	28	35	15
CLASS III.																	
POISONS (none) .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
CLASS IV.																	
INJURIES.																	
Burns.....	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Multiple Injury	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Fracture of Skull	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Fracture of Arm	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Total of Injuries	5	...	...	...	...	...	...	1	...	...	...	...	...	3	1	...	...
Total of all classes	362	74	31	8	9	4	126	11	6	2	13	22	35	30	35	47	35

TABLE shewing the distribution of the Civil Population in Gibraltar in 1891 according to age-groups and sexes, with comparative distribution of populations of England and Wales & Brighton in 1881.

Sex distribution per 1000 of population.		Age distribution per 1000 of population.										
England and Wales, 1881.	Males	Age-groups.										
		All ages.										
		Under 5 years.										
		5-10										
		10-15										
Brighton, 1881	Males	15-20										
		20-25										
		25-35										
		35-45										
		45-55										
Gibraltar, 1891.	Males...	55-65										
		65-75										
		75 and upwards.										
		All ages.										
		Under 5 years.										
5-10												
10-15												
15-20												
20-25												
25-35												
35-45												
45-55												
55-65												
65-75												
75 and upwards.												
England & Wales, 1881	1000	136	120	108	98	90	145	113	83	59	33	14
Brighton, 1881.....	1000	117	104	100	103	99	159	118	88	62	35	15
Gibraltar, 1891	1000	97	89	94	113	105	167	129	96	64	33	13

TABLE III
Table showing the calculation of the standard
Civil Population of 1901

Columns.	1		2	
	Mean annual death-rate for England & Wales 1871-80.		Civil Population of Gibraltar, 1891.	
Age Groups.	Males	Females	Males	Females
Under 5 yr.	68.14	58.10	884	965
5-10	6.67	6.20	834	871
10-15	8.69	3.70	885	920
15-20	5.28	5.23	919	1232
20-25	7.32	6.78	879	1182
25-35	9.30	8.58	1457	1725
35-45	13.74	11.58	1194	1266
45-55	20.05	15.59	831	1000
55-65	34.76	28.54	493	733
65-75	69.57	60.82	224	400
75 and upwards	169.08	155.83	80	176
At all ages	22.61	20.00	8650	10420

The Standard number of Deaths in Gibraltar
The Standard Death-rate of population
column 2

The recorded death-rate do. do.
The factor for correction of the recorded
death-rate of England & Wales for 1871-6
 $\text{rate} = \frac{\text{true}}{\text{recorded}} = 1.03409$.

The corrected death-rate = recorded death-rate
 $= 20.08$ per 1000.

	Standard death-rate	for males in G
	Recorded death-rate	" "
	Factor for correction	" "
	Corrected death-rate	" "

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TABLE III.

TABLE shewing the calculation of the standard Death-rate for the total Civil Population of Gibraltar.

Columns.	1		2		3		4	
Age Groups.	Mean annual death-rate for England & Wales 1871-80.		Civil Population of Gibraltar, 1891.		Calculated number of deaths amongst Gib. population if dying at same rate as in Col 1.		Recorded number of deaths amongst Gibraltar population in 1891.	
	Males	Females	Males	Females	Males	Females	Males	Females
Under 5 yr.	68.14	58.10	884	965	60.23	56.06	62	64
5-10	6.67	6.20	834	871	5.56	5.40	5	6
10-15	3.69	3.70	885	920	3.26	3.40	5	1
15-20	5.23	5.23	919	1232	4.80	6.44	1	1
20-25	7.32	6.78	879	1132	6.43	7.67	5	8
25-35	9.30	8.58	1457	1725	13.55	14.80	17	5
35-45	13.74	11.58	1194	1266	16.40	14.66	21	14
45-55	20.05	15.59	831	1000	16.66	15.59	17	13
55-65	34.76	28.54	493	733	17.13	20.91	21	14
65-75	69.57	60.82	224	400	15.58	24.32	23	24
75 and upwards	169.08	155.83	80	176	13.52	27.42	14	21
At all ages	22.61	20.00	8680	10420	173.12	196.67	191	171

The Standard number of Deaths in Gibraltar=370 (col. 3 of above Table).

The Standard Death-rate of population in column 2 $= \frac{370 \times 1000}{19100} = 19.37$ per 1000.

The recorded death-rate do. do. $= \frac{362 \times 1000}{19100} = 18.95$ "

The factor for correction of the recorded death-rate is the mean annual death-rate of England & Wales for 1871-80, divided by the Standard death-rate $= \frac{21.27}{19.37} = 1.09809$.

The corrected death-rate=recorded death-rate \times factor for correction =20.08 per 1000.

The Standard death-rate for males in Gib.=19.94 for females 18.87

Recorded death-rate " " =22.00 " 16.41

Factor for correction " " = 1.1339 " 1.0598

Corrected death-rate " " =24.94 " 17.39

TABLE II.
TABLE shewing the distribution of the Civil Population in Gibraltar in 1891 according to age-groups and sex, with comparison of England & Wales, 1881.

Age-groups.	England & Wales, 1881	Gibraltar, 1891
All ages.	1000	1000
Under 5 years.	186	186
5-10	120	120
10-15	108	108
15-20	98	98
20-25	90	90
25-35	145	145
35-45	113	113
45-55	83	83
55-65	53	53
65-75	23	23
75 and upwards	14	14

CHART I. (See Table II.)

Chart for comparing the proportion per 1000 of Population of Males and Females, living at the different age-groups, amongst the Total Civil Population in Gibraltar and the Total Population in England & Wales.

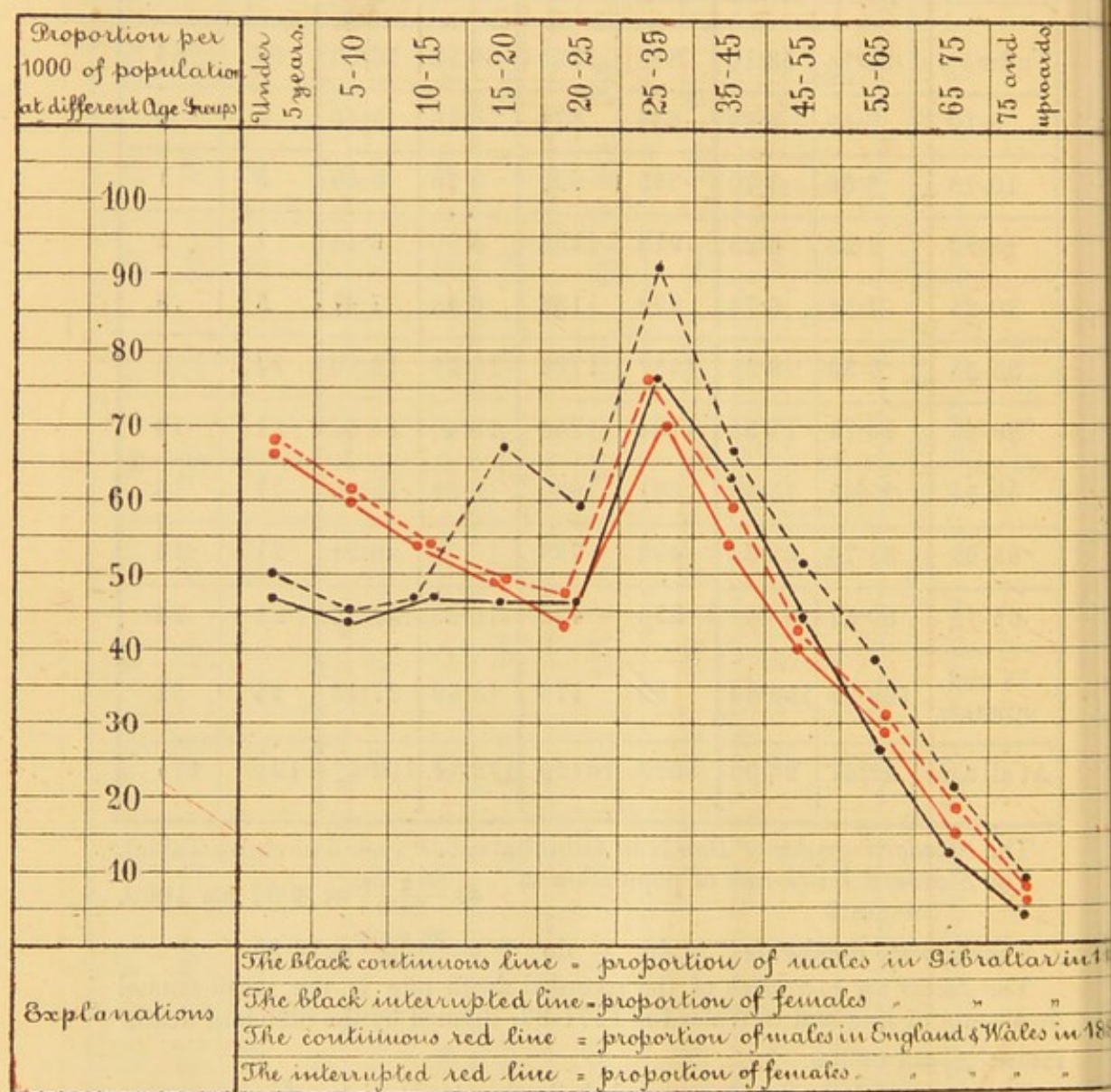


TABLE IV.

Table for comparing the Death-rates in Gibraltar with the Death-rates in the 28 Urban Districts of England & Wales during the year 1891.

No. in order of mortality	Name of Town	Recorded death-rate	Factor for correction	Corrected death-rate	No. in order of mortality	Name of Town	Recorded death-rate	Factor for correction	Corrected death-rate
1	Norwich	19.3	0.9565	18.4	15	Leeds	22.9	1.0659	24.4
2	Brighton	18.2	1.0296	18.7	16	Bradford	22.2	1.1045	24.5
3	Parliament	19.0	1.0301	19.5	17	Hull	22.8	1.0864	24.7
4	Durham	19.1	1.0402	19.7	18	Wolverhampton	24.2	1.0511	25.4
					19	Sheffield	23.8	1.0671	25.3

TABLE IV.

TABLE for comparing the Death-rates in Gibraltar with the Death-rates in the 28 Urban Districts of England & Wales during the year 1891.

No. in order of mortality.	Name of Town.	Recorded death-rate.	Factor for correction.	Corrected death-rate.	No. in order of mortality.	Name of Town.	Recorded death-rate.	Factor for correction.	Corrected death-rate.
1	Norwich	19.3	0.9565	18.4	15	Leeds	22.9	1.0689	24.4
2	Brighton	18.2	1.0296	18.7	16	Bradford	22.2	1.1045	24.5
3	Portsmouth ..	19.0	1.0301	19.5	17	Halifax	22.8	1.0864	24.7
4	Derby	19.1	1.0402	19.7	18	Wolverhampton	24.2	1.0311	24.9
—	Gibraltar....	18.9	1.0980	20.0	19	Newcastle	23.8	1.0583	25.1
5	Nottingham ...	19.9	1.0599	21.0	20	Huddersfield...	23.0	1.0982	25.2
6	Bristol	20.9	1.0351	21.6	21	Sheffield	23.9	1.0754	25.7
7	Hull	21.0	1.0316	21.6	22	Sunderland ...	25.0	1.0412	26.0
8	Plymouth	22.5	0.9903	22.2	23	Blackburn	25.8	1.0898	28.1
9	Birkenhead ...	20.9	1.0695	22.3	24	Salford	26.0	1.0886	28.3
10	Leicester	21.7	1.0474	22.7	25	Oldham	25.7	1.1097	28.5
11	London	21.4	1.0615	22.7	26	Liverpool ...	27.0	1.0971	28.6
12	Birmingham..	22.2	1.0663	23.6	27	Manchester ..	26.5	1.1143	29.5
13	Bolton	21.9	1.0959	23.9	28	Preston	27.3	1.0859	29.6
14	Cardiff	22.1	1.0853	24.0					

TABLE V.

TABLE shewing the recorded death-rate of the Total Civil Population of Gibraltar for the decennial period 1881-90 and for 1891, corrected according to the Standard Death-rate; and the previously recorded Death-rate of the Fixed Civil Population for the same periods, corrected according to the Census enumerations of 1881 and 1891.

Year.	DEATH RATES OF <i>Total Civil</i> POPULATION.						Death rate of <i>Fixed Civil</i> Population.	
	Recorded death-rates.			Corrected death-rates.			Pre-viously publish'd	True death rate
	Males	Fe- males	Total Civil	Males	Fe- males	Total Civil		
1881	22.2	18.6	20.34	25.17	19.71	22.33	21.1	23.04
1882	30.2	26.6	28.28	34.24	28.19	31.05	26.7	32.10
1883	27.3	21.6	24.28	30.95	22.89	26.65	24.4	27.12
1884	21.5	16.4	18.82	24.37	17.38	20.66	18.8	20.85
1885	28.1	25.4	26.67	31.86	26.86	29.28	27.4	29.62
1886	21.5	19.1	20.70	24.37	20.24	22.72	21.8	23.14
1887	31.1	23.6	27.10	35.26	24.01	29.75	27.7	30.44
1888	22.5	18.7	20.54	25.51	19.81	22.55	20.5	22.76
1889	25.1	18.7	21.68	28.46	19.81	23.80	21.3	24.46
1890	25.2	19.6	22.17	28.57	20.77	24.34	22.1	24.71
Decennial period, 1881-90	25.4	20.8	23.05	28.80	21.96	25.31	23.18	25.83
1891	22.0	16.4	18.95	24.94	17.39	20.08	—	20.70

TABLE VI.
Table of Mortality according to sex & age of Gibraltar.

Year.	MALES.		
	Estimated Popula- tion.	Total Deaths.	Death- rate per 1000
1881	8640	192	22.2
1882	8640	261	30.2
1883	8640	236	27.3
1884	8640	186	21.5
1885	8640	243	28.1
1886	8630	187	21.5
1887	8630	270	31.1
1888	8630	196	22
1889	8630	213	25.1
1890	8630	219	25.2
Decennial period 1881-90	8660	221	25.4
1891	8630	191	22.0

TABLE of Mortality according to sex amongst Total Civil Population of Gibraltar.

Year.	MALES.			FEMALES.		
	Estimated Population.	Total Deaths.	Death-rate per 1000	Estimated Population.	Total Deaths.	Death-rate per 1000
1881	8640	192	22·2	9741	182	18·6
1882	8640	261	30·2	9809	261	26·6
1883	8640	236	27·3	9877	214	21·6
1884	8640	186	21·5	9945	164	16·4
1885	8640	243	28·1	10013	255	25·4
1886	8680	187	21·5	10081	193	19·1
1887	8680	270	31·1	10149	240	23·6
1888	8680	196	22·5	10217	192	18·7
1889	8680	218	25·1	10285	193	18·7
1890	8680	219	25·2	10353	203	19·6
Decennial period 1881-90	8660	221	25·4	10047	210	20·8
1891	8680	191	22·0	10420	171	16·4

TABLE VII.

TABLE of "Infantile Mortality" and Mortality of age-group
"under 5 years."
(Total Civil Population of Gibraltar).

Year.	Infantile Mortality.			Mortality under 5 yrs of age.		
	Total Births.	Deaths under 1 year.	Death rate of deaths under 1 yr per 1000 births.	Estimated population of age-group	Total deaths of age-group	Death rate per 1000 living under 5 years.
1881	493	77	156.2	1779	110	61.8
1882	444	92	207.2	1786	217	121.5
1883	485	72	148.4	1793	145	80.8
1884	488	77	157.7	1800	113	62.7
1885	497	91	183.1	1807	167	92.4
1886	470	76	161.7	1813	134	73.9
1887	487	87	178.6	1820	218	119.7
1888	516	100	193.8	1827	167	91.4
1889	483	76	157.3	1834	137	74.6
1890	490	64	130.6	1841	141	74.5
Decennial period 1881-90	485	81	167.4	1810	155	85.5
1891	486	74	152.3	1849	126	68.1

TABLE showing the mortality amongst the Total Civil Population of Gibraltar for each month during the decennial period 1881-90, and during the year 1891.

Months.	TOTAL NUMBER OF DEATHS RECORDED.												Mean annual average for decennial period 1881-90.		Mortality in 1891.	
	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	Deaths.	Rate per 1000 for each month.	Rate per 1000 for each quarter.	Total p. 1000 for deaths each quarter.	Annual rate per 1000 for each quarter.
January	23	30	43	30	40	36	40	26	33	43	24	24.6	22.0	23.5	44	27.6
February	33	28	50	32	41	27	42	40	33	41	36	36.7	23.5	23.5	49	30.7
March	28	47	41	26	32	29	58	38	34	47	37	37.9	24.3	24.3	38	23.8
April	37	60	46	34	40	37	86	29	54	34	45	45.7	29.3	29.3	97	16.9
May	31	41	30	31	38	40	36	30	37	35	35	35.0	24.5	24.5	94	14.4
June	27	31	28	27	32	31	31	28	28	28	28	28.0	22.0	22.0	87	12.0
July	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0
August	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0
September	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0
October	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0
November	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0
December	24	24	24	24	24	24	24	24	24	24	24	24.0	22.0	22.0	87	12.0

TABLE VIII.
TABLE shewing the mortality amongst the Total Civil Population of Gibraltar for each month during the decennial period 1881-90, and during the year 1891.

Months.	TOTAL NUMBER OF DEATHS RECORDED.										Mean annual averages for decennial period 181-90*			Mortality in 1891.		
	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	Deaths, p. 1000 for each month.	Rate p. 1000 for each quarter.	Annual rate per 1000 for each month, each q'ter	Total deaths, 1000 for each month.	Annual rate per 1000 for each month.	Annual rate per 1000 for each q'ter
	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890						
January.....	23	30	43	30	40	36	40	26	33	43	34.6	22.0	27.6	44	27.6	27.2
February.....	33	28	50	32	41	27	42	40	33	41	36.7	23.5	30.7	49	30.7	27.2
March.....	28	47	41	25	32	29	58	38	34	47	37.9	24.3	23.8	38	23.8	27.2
April.....	37	60	46	34	40	37	86	29	54	34	45.7	29.3	16.9	27	16.9	18.0
May.....	35	64	30	24	37	40	51	23	25	23	35.2	22.5	14.4	23	14.4	18.0
June.....	19	54	37	23	43	33	37	26	30	21	32.3	20.7	22.6	36	22.6	18.0
July.....	34	52	45	30	43	31	44	42	34	27	38.2	24.5	20.1	32	20.1	14.6
August.....	37	47	31	43	48	28	42	31	46	35	39.1	25.0	10.9	19	10.9	14.6
September.....	37	34	21	24	46	36	33	33	40	26	33.0	21.1	10.9	19	10.9	14.6
October.....	28	28	32	26	55	28	22	34	33	36	32.0	20.6	14.4	23	14.4	15.7
November.....	29	35	27	29	37	33	25	31	24	38	30.8	19.7	16.3	26	16.3	15.7
December.....	34	43	47	30	36	30	30	35	25	48	35.8	22.9	16.3	26	16.3	15.7
Totals.....	374	522	450	350	498	388	510	388	411	422	431.3	23.0	23.0			

* Mean Population for decennial period = 18,705 (Vide Table IX.)

Month	Jan	Feb	Mar	Apr	May
Diarrhoea	1	1	1	1	1
Continued fever	1	1	1	1	1
Enteric fever	1	1	1	1	1
Typhus	1	1	1	1	1
Cholera	1	1	1	1	1
Small Pox	1	1	1	1	1
Measles	1	1	1	1	1
Scarlet Fever	1	1	1	1	1
Diphtheria	1	1	1	1	1
Whooping Cough	1	1	1	1	1
Typhus Fever	1	1	1	1	1
Enteric Fever	1	1	1	1	1
Continued Fever	1	1	1	1	1
Diarrhoea	1	1	1	1	1
Total deaths	1	1	1	1	1
Death rate p. 1000 living	1	1	1	1	1
Total deaths	1	1	1	1	1
Death rate p. 1000 living	1	1	1	1	1

TABLE showing the principal mortality statistics of the total resident Civil Population of Gibraltar for the decennial period 1881-90 and for the year 1891.

Year.	Estimated Population.		Deaths from all causes.		Death rate per 1,000 living.		Principal Zymotic diseases.		Deaths from Principal Zymotic Diseases.										Tubercular diseases.		Respiratory diseases.	
	Total Civil.	Fixed Civil.	Total Civil.	Fixed Civil.	Total Civil.	Fixed Civil.	Total deaths	Death rate per 1000 living.	Cholera.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Typhus Fever.	Enteric Fever.	Continued Fever.	Diarrhoea.	Total deaths	Death rate p. 1000 living.	Total deaths	Death rate p. 1000 living.
1881	18381	16186	374	373	20.34	23.04	53	2.88	—	1	—	—	7	—	—	12	1	32	63	3.42	124	6.74
1882	18453	16258	522	522	28.28	32.10	111	6.01	—	—	24	—	14	1	—	9	4	59	78	4.22	160	8.67
1883	18525	16330	450	443	24.28	27.12	91	4.91	—	23	—	—	8	2	1	12	2	43	66	3.56	128	6.90
1884	18597	16402	350	342	18.82	20.85	59	3.17	—	4	—	—	8	—	—	4	7	36	71	3.82	99	5.32
1885	18669	16474	498	488	26.67	29.62	94	5.03	20	—	—	6	18	4	—	16	—	30	87	4.66	109	5.83
1886	18741	16546	388	383	20.70	23.14	65	3.46	—	—	—	—	18	3	—	8	6	30	73	3.89	114	6.08
1887	18813	16618	510	506	27.10	30.44	167	8.87	—	—	83	1	16	—	—	7	1	59	62	3.29	112	5.95
1888	18885	16690	388	380	20.54	22.76	89	4.71	—	—	—	1	23	7	—	8	4	46	35	1.85	103	5.95
1889	18957	16762	411	410	21.68	24.46	106	5.59	—	6	—	—	37	14	—	7	—	42	50	2.63	94	4.96
1890	19029	16834	422	416	22.17	24.71	80	4.20	—	3	8	—	20	—	—	3	1	45	49	2.57	107	5.62
Av. for decennial period 1881-90.	18705	16510	431	426	23.05	25.83	91	4.88	2.0	3.7	11.5	.8	16.9	3.1	.1	8.6	2.6	42.2	63	3.39	115	6.15
1891	19100	16906	362	350	18.95	20.70	58	3.03	—	—	3	—	7	1	—	4	1	42	53	2.77	99	5.18

N.B.—The population has been estimated from the Census of 1881 and 1891 according to the formula $\frac{P-P'}{10} = R$; where P = Total Civil Population in 1891, P' = Total Civil Population in 1881, and R = rate of increase for each year.

The "Alien" Population remaining practically the same, the changes in population are due to increase in the Fixed Civil Population.

[illegible]

TABLE XII.

TABLE of infectious and contagious diseases notified to the Sanitary Commissioners since 1885.

(Sect. 10, Med. Ord., Gibraltar, providing for compulsory notification of these diseases, came into operation in 1886).

Year.	Resident Civil Population.										From ships in Harbour.							
	Cholera.		Small Pox.		Scarlet fever.		Measles.		Diphtheria.		Enteric fever.		Small Pox.		Enteric fever.		Typhus fever.	
	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.	Reported.	Died.
1885	32	20	—	—	30	6	—	—	20	18	25	16	7	3	3	1	—	—
1886	—	—	—	—	—	—	—	—	31	18	13	8	6	1	—	1	—	—
1887	—	—	—	—	39	1	861	83	31	16	10	7	8	4	—	1	1	1
1888	—	—	3	—	26	1	9	—	22	23	23	8	5	1	—	2	—	—
1889	—	—	60	6	10	—	10	—	155	37	10	7	2	—	14	5	—	—
1890	—	—	32	3	6	—	379	8	46	20	7	3	8	2	7	5	—	—
1891	—	—	1	—	5	—	181	3	12	7	13	4	9	1	8	5	—	—
Total	33	20	96	9	116	8	1440	94	317	139	101	53	45	12	32	20	1	1

TABLE XIII.

TABLE shewing the Birth-rates per 1,000 living in different countries with true Birth-rates for fixed Civil Population of Gibraltar (for the decennial period 1881-90 and for 1891).

Countries.	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	Mean annual birth-rate for 10 yrs	1891
England and Wales..	33.9	33.7	33.3	33.3	32.5	32.4	31.4					
Scotland	33.7	33.3	32.5	33.4	32.3	32.4	31.2					
Ireland	24.5	24.1	23.6	24.0	23.5	23.3	23.2					
Gibraltar	30.4	27.1	29.7	29.7	30.1	28.4	29.3	30.9	28.8	29.1	29.35	28.1
Austria	38.7	38.9	38.2	38.4	37.4	37.7	38.2					
Germany	37.0	37.2	36.6	37.2	37.0	37.1	36.9					
Italy	38.0	37.1	37.1	38.7	38.1	36.1	35.3					
France	24.9	24.8	24.8	24.8	24.3	23.9	23.5					

TABLE XIV.

Death-rates amongst the total Civil Population of Gibraltar in 1891 according to sexes and age-groups.

Sexes.	Death-rates per 1,000 living at the different ages.												
	All ages.	Under 5 years.	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75-85	85 and upwards
Male...	22.00	71.26	4.79	5.65	1.08	5.68	11.67	18.35	20.45	40.56	102.68	173.33	200.00
Female	16.41	67.35	6.88	1.08	0.81	6.12	2.89	11.04	13.00	19.10	57.50	111.11	213.5

Note.—It will probably be observed that the preceding Tables differ in some respects from those published. The following remarks explain the discrepancies:—

(1) The alien population in Gibraltar, consisting of wives and widows of natives and others, added these to the fixed civil population living here on permanent basis, of 2,732 and the fixed civil population of 15,649. In the 1891 Census the total population was 18,381 and domiciled inhabitants are 15,649.

(2) The Registrar's Book B contains the deaths of all aliens must be entered in any uniform system. For the death of anyone, born or died in Gibraltar, entered in this book. The Registrar looked through, and though an attempt was made to redistribute the deaths according to the census districts, as already explained in the preceding report, entering the town for medical purposes, Hospital or out of Hospital, was not done.

(3) The yearly increment of the population, according to the simplest recognized method, can only be considered as an approximation.

(4) The total number of deaths, according to age, sex, disease, and cause, by careful personal examination, during the decennial period.

I am indebted to Dr. Newsome for the figures connected with the "factors for correction" of the General's returns were not at hand. The death rates of the English and the quarterly reports of the Medical Journals.

NOTE.—It will probably be observed that the figures in the preceding Tables differ in some respects from similar figures already published. The following remarks may serve to explain the discrepancies :—

(1) The alien population in the 1881 Census included 537 wives and widows of natives and domiciled inhabitants. I have added these to the fixed civil population, thus making the alien population living here on permit in 1881 equal to 2,195 instead of 2,732 and the fixed civil population 16,186 instead of 15,649. In the 1891 Census the wives and widows of natives and domiciled inhabitants are not shewn as aliens.

(2) The Registrar's Book B (*i.e.*, a separate register, in which deaths of all aliens must be entered), has not been kept up according to any uniform system. For example, from 1881 to 1883 the death of anyone, *born* out of Gibraltar, was apparently entered in this book. The Register has accordingly been carefully looked through, and though the task was a difficult one, an attempt was made to redistribute the deaths entered in it according to the census distribution of the population; and, as already explained in the report, all deaths of persons entering the town for medical and surgical treatment, whether in Hospital or out of Hospital, were eliminated altogether.

(3) The yearly increment of population is calculated according to the simplest recognized formula; but, of course, this increment can only be considered approximately correct.

(4) The total number of deaths, and the distribution of deaths according to age, sex, disease, month, &c., have been obtained by careful personal examination of the registered deaths during the decennial period.

I am indebted to Dr. NEWSHOLME'S "Elements of Vital Statistics" for the figures connected with other localities, and for the "factors for correction" of the English towns. The Registrar General's returns were not at hand while the tables were being prepared. The death rates of the English towns for 1891 are obtained from the quarterly reports of the Registrar General, published in the Medical Journals.

Notes: It will probably be observed that the figures in the two columns differ in some cases. This is due to the fact that the following remarks may serve as explanation of the discrepancies:

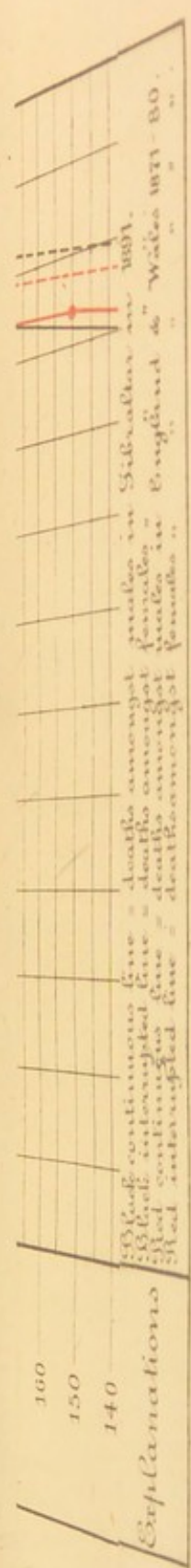
(1) The alien population in the 1901 Census included all wives and widows of natives and of persons of European descent who had been in the United Kingdom for more than 10 years. The population living here on 1st April 1901 was 1,110,000. In the 1901 Census the wives and widows of natives and denaturalized individuals are not shown separately.

(2) The Registrar's Book B (1901) reports figures in which details of all aliens must be entered, but not those of persons of European descent. The Registrar's Book B (1901) reports figures in which details of all aliens must be entered, but not those of persons of European descent. The Registrar's Book B (1901) reports figures in which details of all aliens must be entered, but not those of persons of European descent.

(3) The 1901 Census population is calculated according to the Registrar's Book B (1901) but it is not the same as the population of the Registrar's Book B (1901).

(4) The total number of deaths and the number of deaths according to age and sex, namely 140,000, have been obtained by adding the number of deaths of the Registrar's Book B (1901) to the number of deaths of the Registrar's Book B (1901).

I am indebted to Mr. J. H. M. for the information that the Registrar's Book B (1901) reports figures in which details of all aliens must be entered, but not those of persons of European descent. The Registrar's Book B (1901) reports figures in which details of all aliens must be entered, but not those of persons of European descent.



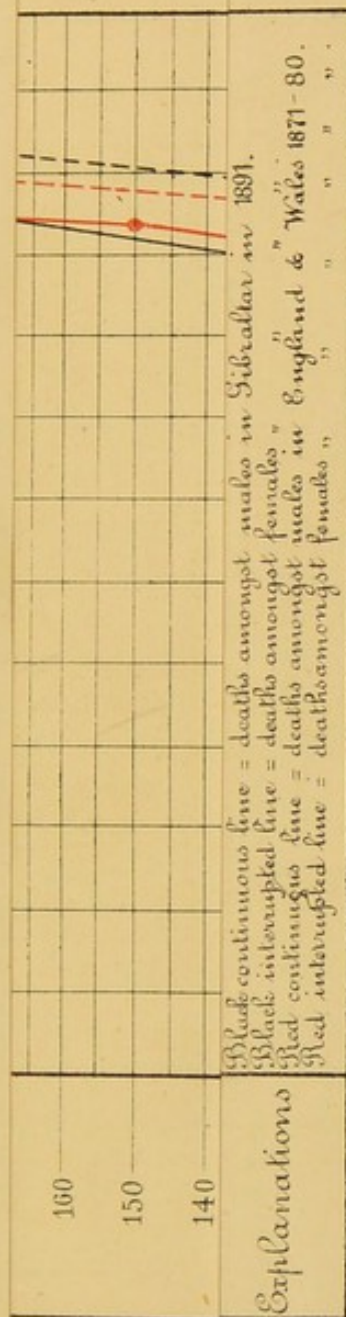




Chart shewing the mortality from Endemic Zymotic Diseases amongst the Civil Population of Gibraltar for decennial period 1881-90; for each month.

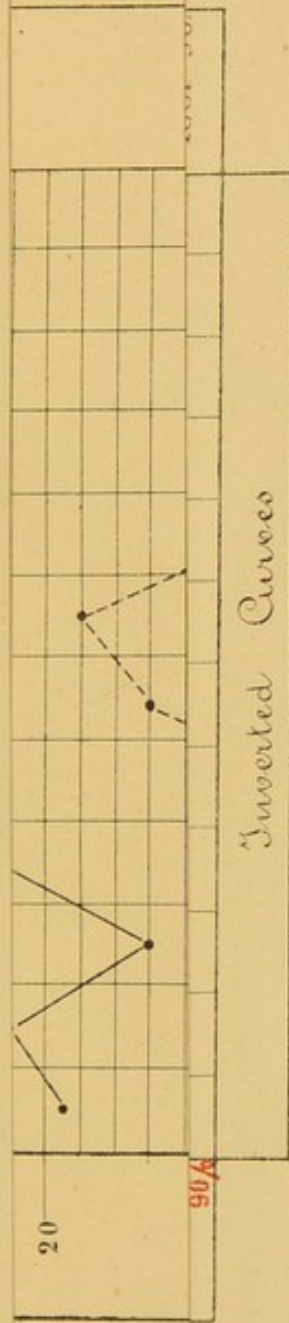


CHART shewing the mortality from Endemic Zymotic Diseases amongst the Civil Population of Gibraltar for decennial period 1881-90 ; for each month.

The red curves shew the mean monthly temperatures and relative humidities for the same period.

(CHART III CONTINUED)

CHART IV.
Chart showing the Monthly distribution and mortality of Epidemics of Measles amongst the Civil Population of Gibraltar (1881-90).

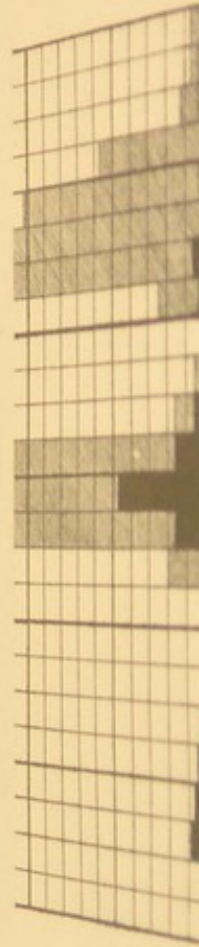
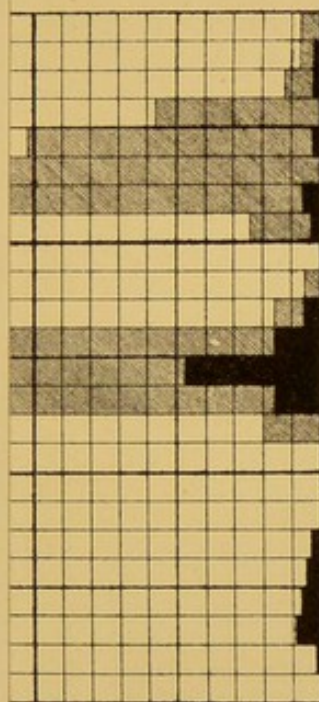


CHART IV.

CHART shewing the Monthly distribution and mortality of Epidemics of Measles amongst the Civil Population of Gibraltar (1881-90).



EXPLANATIONS.—The shaded columns represent the number of cases reported ; the black columns the number of deaths.

Each square equals ten cases.

