Annual report on the health of Gibraltar.

Contributors

Gibraltar. Public Health Department.

Publication/Creation

Gibraltar : Govt. Printer, [1927]

Persistent URL

https://wellcomecollection.org/works/c9e9u59e

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution license.

This licence permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

RCB
18c

Pam 77

City Council of Gibraltar.

ANNUAL REPORT

ON THE

HEALTH OF GIBRALTAR

FOR THE YEAR

1927

BY

Lieut.-Colonel W. C. SMALES, D.S.O., R.A.M.C.,
Medical Officer of Health.

Printed and published by WILLIAM MILES, for the Garrison Library
Government Printers for Gibraltar.

Presented by

The Medical Officers of Health

October 1928

22501398699

With the
Medical Officer of Health's
Compliments.

Public Health Department,
City Council Offices,
Gibraltar.

City Council of Gibraltar.

ANNUAL REPORT

ON THE

HEALTH OF GIBRALTAR

FOR THE YEAR

1927

BY

Lieut.-Colonel W. C. SMALES, D.S.O., R.A.M.C.,
Medical Officer of Health.

WELLCOME INSTITUTE
LIBRARY
Coll. weiMOmec
Call No. AmRep
WA28
.EG5
G44
1927

LIST OF CONTENTS.

———:o:———

	Page.
SUMMARY OF VITAL STATISTICS	1
GENERAL CONSIDERATIONS	2
METEOROLOGICAL OBSERVATIONS	3
VITAL STATISTICS—	
1. Population	10
2. Deaths	12
3 Monthly and Quarterly Mortality	13
MATERNITY AND CHILD WELFARE—	
Statistics	17
Infantile Mortality	17
Welfare Centre	18
Midwives	19
School Clinic	19
PREVALENCE AND CONTROL OF INFECTIOUS DISEASES—	
General Incidence...	23
Quarterly Incidence of Notifiable Infectious Diseases—Civil Population	23
Quarterly Incidence of Notifiable Infectious Diseases—Landed from the Bay	23
Weekly notification of cases of Infectious Diseases	24
Age and Sex incidence of Notifiable Infectious Diseases—Civil Population	25
Monthly notification of Notifiable Infectious Diseases—Civil Population	26
Monthly notification of Notifiable Infectious Diseases—Landed from the Bay	27
Incidence of Infectious Diseases	28
Enteric Fever	29
Diphtheria	30
Swabs	31
Measles	32
Pneumonia	33
Scarlet Fever	34
Ondulant Fever	34
Small Pox...	34
Vaccination	36
Other Notifiable Diseases	36
Venereal Disease	37
Hospital Accommodation for Infectious Diseases	37
PULMONARY TUBERCULOSIS—	
Number of Notification and Deaths	39
Report of the Destitute Sick and Tuberculosis Scheme	41
GIBRALTAR HOME FOR SICK AND AGED—	
Feeding	42
Equipment	42
Destitute Sick and Tuberculosis Scheme...	43
LOCAL CHARITIES	44
SERA, VACCINES, &c.	45

LIST OF CONTENTS—*Continued.*

	Page.
INVESTIGATION AND PREVENTION OF OTHER DISEASES—	
Mosquitoes	47
Mosquito Campaign Return	50
Flies	51
Rat Repression	51
DISINFECTION	53
AMBULANCE FACILITIES—	
Details of cases removed to Hospital by Ambulance	54
REPORT OF THE CITY ANALYST AND BACTERIOLOGIST—	
Part I—Food and Drugs	55
Part II—Miscellaneous Analyses	60
Part III—Bacteriology and Public Health Work	63
SANITARY CIRCUMSTANCES OF THE DISTRICT—	
Water Supply	73
Sewerage	75
Refuse Collection and Disposal	76
Cleansing of roads, maintenance of highways, &c.	76
Sea Bathing	76
HOUSING	77
SUMMARY OF WORK DONE BY SANITARY INSPECTORS ...	104
REPORT OF THE VETERINARY ADVISER...	105
COMMON LODGING HOUSES...	108
LIST OF ORDINANCES, BYE LAWS AND REGULATIONS RELATING TO PUBLIC HEALTH IN FORCE IN GIBRALTAR.	108
FOOD (SUPERVISION OF FOOD SUPPLIES)—	
Milk Supply	109
Food Inspection	109
Hawkers	110
Markets and Slaughter Houses	110
WORK IN CONNECTION WITH THE PORT MEDICAL DEPARTMENT	112
CHARTS—	Between pages
Graphic representation of Gibraltar Rainfall from 1790 to 1927	8— 9
Infantile Mortality	18—19
Diarrhœa and Enteritis in Gibraltar during 1888-1927... ...	20—21
Enteric Fever in Gibraltar during 1885-1927	28—29
Diphtheria (and Membranous Croup) in Gibraltar during 1888-1927)	30—31
Measles in Gibraltar during 1887-1927	32—33
Undulant Fever in Gibraltar during 1905-1927...	34—35
Scarlet Fever in Gibraltar during 1891-1927	34—35
Small-pox in Gibraltar during 1888-1927	36—37
Pulmonary Tuberculosis in Gibraltar during 1891-1927 ...	40—41
Yellow Fever Cases reported in Senegal	48—49
Showing number of samples analysed per annum since 1896 ...	72—73
Infantile Mortality per 1,000 births for the Decennial Periods 1908-1917 and 1918-1927	End of Report
Zymotic Mortality per 1,000 of Total Civil Population for the Decennial Periods 1908-1917 and 1918-1927 ...	End of Report
General Death rate per 1,000 of Total Civil Population for the Decennial Periods 1908-1917 and 1918-1927 ...	End of Report
PLAN OF GIBRALTAR	

CITY COUNCIL OF GIBRALTAR.

CHAIRMAN.

The Hon. W. A. BOWRING, J.P.

Councillor G. BELLOTTI.
Councillor N. P. CORTES.
Councillor J. R. CROOK, O.B.E., J.P., M.I.C.E.
Councillor Lt.-Col. G. T B. GOLDNEY, C.M.G., D.S.O., R.E.
Councillor A. E. HUART, J.P.
Councillor Surg. Commander E. B. KENNY, M.B., R.N.
Councillor Dr. P. F. LYONS, J.P., L.R.C.S., L.R.C.P.
Councillor J. J. RUSSO, J.P.

STAFF OF THE PUBLIC HEALTH DEPARTMENT.

Medical Officer of Health.

Lieut.-Colonel W. C. SMALES, D.S.O., R.A.M.C.

City Analyst and Bacteriologist.

A. G. HOLBOROW, F.I.C.

**Veterinary Adviser.*

Major C. A. MURRAY, R.A.V.C.

Senior Sanitary Inspector.

†C. E. NORTON, M.R.San.I. (Clerical Duties).

Sanitary Inspectors.

†A. E. VICTORY, A.R.San.I.
†H. W. MCINTOSH, A.R.San.I.
†P. VELLA, A.R.San.I.
†J. SUAREZ, A.R.San.I.
†A. TRAVERSO, A.R.San.I. (Clerical Duties).

Laboratory Assistants.

M. J. GOMEZ.
H. J. BRUZON.

‡*Destitute Sick and Tuberculosis Scheme.*

Medical Officer i/c of the Home ... ... The Medical Officer of Health.
Nurse ... ... Mrs. R. MONTEGRIFFO.

‡*Maternity and Child Welfare.*

Midwife REQUENA.
Mrs. H. RECAÑO.

---

*Occasional.
†Cert. R.San.Inst.
‡Mainly maintained by Government grants.

COLONIAL DEPARTMENT.

COLONIAL HOSPITAL.

Surgeon.

J. LOCHHEAD, Esq., O.B.E., J.P., M.A., M.D., B.Sc., F.R.C.S. (Edin.).

Assistant Surgeons.

G. C. St.G. GRIFFITHS, Esq., M.R.C.S., L.R.C.P.
J. E. DEALE, Esq., M.B., Ch.B.

Extra Asst. Surgeon.

L. H. GILL, Esq., L.R.C.P., L.R.C.S. (Edin.)

Public Vaccinator.

*L. H. GILL, Esq., L.R.C.P., L.R.C.S. (Edin.)

Port Surgeon.

*J. V. ABRINES, Esq., J.P., L.R.C.P., L.R.C.S.

Deputy Port Surgeon.

*P. F. LYONS, Esq., J.P., L.R.C.S.I., L.R.C.P.I.

Surgeon Isolation Hospital.

*J. A. DURANTE, Esq., M.R.C.S., L.R.C.P.

Inspector of Food.

The Medical Officer of Health.

Medical Inspector of Schools.

The Surgeon, Colonial Hospital.

School Dentist.

J. GARESSE, Esq.

District Medical Officers.

*A. A. RUSSO, Esq., L.R.C.S.I., L.R.C.P.I.
*F. CARRERAS, Esq.

Medical Officer in charge, North Front District.

†Major J. B. FOTHERINGHAM, M.B., R.A.M.C.

---

*Allowance paid to a private medical practitioner as a retaining fee for his services.

†Allowance paid to an Officer of the R.A.M.C. for medical services at North Front District.

BOARD OF HEALTH.

H.E. the Governor.

The Hon. Colonial Secretary.

Principal Medical Officer (Military).

Principal Medical Officer (Naval).

Captain of the Port.

Port Surgeon.

Surgeon Colonial Hospital.

Medical Officer of Health.

Chairman of the City Council.

President of the Exchange Committee.

President of the Chamber of Commerce.

Secretary—H. J. NORTON, Jr., Esq.

PREFACE.

An endeavour has been made in this Report to review the health statistics of Gibraltar as far as available records go, and it will be seen that steady progress has been maintained throughout that period.

The general health of Gibraltar during the year under review continued to be satisfactory and there were no notable outbreaks of infectious diseases to be recorded.

For the third year in succession there were no local cases of Small Pox.

The birth rate of 22 is the lowest recorded for many years.

The Infantile mortality rate of 99·1 is considerably lower than that of the previous year.

In February of this year (1928) an examination was held in Gibraltar for the Certificate of the Royal Sanitary Institute which was conducted by Professor Bostock Hill, M.Sc., M.D., D.P.H., Chairman of the Council.

Eight candidates were successful including all the Sanitary Inspectors.

The accommodation provided in the City Hall for the Public Health Department has recently undergone complete renovation and is now most excellently equipped and suitable for its purpose.

I should like to record my appreciation of the interest taken by the Press in all public health matters and to thank them for their valuable assistance during the year.

I am greatly indebted to those who have helped in the preparation of this Report.

W. C. SMALES,
Lieut.-Colonel,
Medical Officer of Health.

CITY COUNCIL OF GIBRALTAR.

PUBLIC HEALTH DEPARTMENT.

SUMMARY OF VITAL STATISTICS FOR 1927.

Total area of Gibraltar Territory	1,387 acres, 2 roods, 3 poles
Area of the City	104 acres, 3 roods, 33 poles
Estimated Total Civil Population of Gibraltar	17,196 persons
Estimated Fixed Civil Population of Gibraltar	16,120 persons
Births in Fixed Civil Population	185 Males, 178 Females.
Total Births	363
Birth rate per 1,000 of Fixed Civil Population	22·5
Deaths in Civil Population	167 Males, 130 Females.
Crude death rate per 1,000 of Total Civil Population	17·27
Average crude death rate for previous 10 years...	17·02
Standardised death rate corrected for age and sex distribution	20·32
Death rate from Pulmonary Tuberculosis ...	1·3 per 1,000

The infantile mortality rate was 99·1 per 1,000 births, being 8·8 per 1,000 less than in 1926.

GENERAL CONSIDERATIONS.

Gibraltar is a narrow peninsular running North and South. It consists of a high mountain called the "Rock" and of a flat sandy plain known as the North Front; the Neutral Territory connects it with Spain.

The Rock is of limestone formation, overlaid on the West with dark shale and covered with a layer of more recent geological formation in parts of limestone breccia or angular limestone blocks, in parts of sandstone or sand.

It is 1,396 feet above the sea level at its highest point, and some 2½ miles long. The North Front plain is about ½ mile in length and some 10 feet above the sea level.

The total acreage of Gibraltar territory is 1,387 acres, 2 roods and 3 poles or about 2⅙ square miles.

The town proper or City of Gibraltar occupies an area some ¾ of a mile in length of 104 acres, 3 roods, 33 poles at the foot of the Rock on its lower North-Western slope.

The Neutral territory is an isthmus of some 1,500 yards long and from 1,000 to 1,800 yards wide through which runs the main road to Spain.

The Spanish city of La Linea is situated at the North of the Neutral territory and immediately adjoining it.

The only civil habitations on the East side of the Rock are at Catalan Bay Village.

The rateable value of Gibraltar is £286,101-15-0 and a penny rate produces £1,192-1-9.

The Public Health Administration of Gibraltar is vested in the City Council and in the Board of Health.

The City Council are the authority for carrying out the provisions of the Public Health Ordinance relating to Water Supply, Sewerage, Prevention of Disease, General Sanitation of Gibraltar territory and the Vaccination Ordinance. The Board of Health deals with matters of sanitation arising in the port.

The Civil Hospital, Isolation Hospital, Midwives' Ordinance, Medical Work in connection with the Port, Schools, and Inspection of Foodstuffs are administered by the Colonial authorities.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1927.

Latitude 36° 6′ N. Longitude 5° 21′ W.

Instruments verified at the National Physical Laboratory, Kew.

The Meteorological Station is situated in an obsolete bastion on the fortifications on the South-West side of the Rock, the height of the ground being 50 feet above mean sea level. Here all the instruments (except the anemometer) are kept.

The shade thermometers, kept in a Stevenson screen, are: one self-recording maximum, one self-recording minimum, a dry and wet bulb. A self-recording grass thermometer is used for registering the temperature on the grass.

The rain gauge is an 8 inch copper meteorological pattern.

The anemometer is fixed in Victoria Gardens, North Front, on the isthmus which joins Gibraltar to the mainland, and clear of the Rock to avoid eddies.

A report is sent twice daily to the Meteorological Office, London, and daily to the *Gibraltar Chronicle* for general information. A complete monthly report is also sent to the Meteorological Office, London, for publication in their journals.

The report contains statistics showing the means for the year in barometric pressure, air temperature, rainfall, humidity, cloud and wind, compared with the averages for a series of years, number of days of clear sky, overcast days, and days on which rain fell during the year. Readings are taken every day throughout the year at the 7th, 13th, 18th and 21st hour, but the following tables are compiled from the readings at the 7th, 13th, and 21st hours only.

NOTABLE FEATURES OF THE WEATHER OF 1927.

JANUARY was normal in temperature and much below the average in rainfall. Fine generally with strong Westerly winds, including a heavy gale on the 18th.

FEBRUARY normal in temperature, but wet, and at times very windy, with thunderstorms, and hail.

MARCH. Warm and dry, with strong Westerly winds.

APRIL. Fine and warm, with only half the usual rainfall, during the night of the 12th, the phenomenon known as "red rain" occurred, a quantity of red earth falling with the rain during a thunderstorm and gale.

MAY. Fine and dry. Rain fell on only four days.

JUNE. Fine and warm. Temperature 2°·2 above the average with light to moderate winds. Rain fell on the 1st and this was the last rain of the season.

JULY. Normal temperature, no rain was recorded, there were several morning fogs, but much less levanter than usual, the average cloud being the unusually low figure of 1·4.

AUGUST was again the hottest month, the highest shade temperature of the year being recorded on the 15th, 94°, there was less levanter than usual.

SEPTEMBER. Warm, dry and pleasant all through the month with fresh Westerly winds, and only two days on which rain fell.

OCTOBER. Mild and wet, above the average in temperature and rainfall, there were spells of levanter, and strong Easterly winds, with a heavy thunderstorm on the 14th.

NOVEMBER. Normal in temperature and rainfall, but strong winds, reaching gale force on three occasions, and several thunderstorms.

DECEMBER. Unusually wet, rain fell on 19 days, and the fall was 8·75 inches above the average, the 24th being the wettest day of the year, with 2·90 inches. Very mild, except the last week, and strong Westerly winds, reaching gale force at times.

RAINFALL (*see* TABLE VII AND CHART I)

Rain Season 1926-27	25·02 inches
For the year 1927	36·08 ,,
Number of days on which 0·1 inch of rain or more fell	89
Number of days on which 0·4 inch of rain or more fell	80
Highest recorded temperature in the screen...	94° on the 15th August
Lowest recorded temperature in the screen...	42° on the 19th January
Mean temperature for the year	64°·9

Mean humidity	73%
Lowest temperature on the grass	35° on the 20th January and 15th Nov.
Wettest day	2·90 inches on 24th Dec.
Mean amount of cloud for the year	4·3
Number of days of clear sky	91
Number of days of overcast sky	52
Number of days with thunderstorm	13
Number of occasions when hail fell	2
Number of gales (including gale gusts)... ...	11
Number of days of fog	8
Number of frosts...	0

BAROMETER. The mean Barometric reading for the year was 30·044 inches, when reduced to sea level, and to a temperature of 32° Fahr. The highest corrected reading of the year was 30·521 on January 10th and the highest corrected monthly mean, January, 30·230. The lowest corrected reading of the year was 29·598 on December 4th, and the lowest corrected monthly mean, December, 29·938.

TEMPERATURE. The mean temperature for the year was 64·9, which was 0·7 above the average for 40 years. There were no exceptional temperatures.

WIND. There was much more wind than usual throughout the year and gale force was reached on eleven occasions while only 19 observations of calm were recorded, there was much less East wind, the prevailing winds being S.W. and W.

RAINFALL. The rainfall for the year was normal, though December, which was by far the wettest month, accounted for nearly half the total, the 24th being the wettest day of the year with 2·90 inches.

HUMIDITY. The mean relative humidity of the atmosphere (percentage of saturation of the air) was normal for the year. As will be seen by the reference table the average humidity is fairly heavy, though considerable variations occur, sometimes as much as 68%.

These details and comparative tables of the Meteorology of Gibraltar are given in the Annual Meteorological Report of Gibraltar by Mr. Henry Bentley, Public Works Department, Meteorological Observer.

TABLE I.

Month	Barometric pressure reduced to sea level & 32° Fahr.	Maximum and Minimum Temperatures.			Difference from average for 40 years.	Maximum date.	Minimum date.
		Maximum	Minimum	Mean			
Jan.	30·230	60·5	49 9	55·2	+ 0·4	70—12th	42—19th
Feb.	30·251	60·6	50·0	55·3	— 0·6	70—26th	45—3rd 6th 8th 19th
Mar.	30·183	65·5	52 8	59 1	+ 1·6	69—22nd 31st	45—14th
April	30·051	67 9	54·5	61·2	+ 0·2	79—26th	48—12th
May	29 982	73·6	60 4	67·0	+ 1·5	79—20th 23rd 29th	52—7th
June	30·030	80·3	65·1	72 7	+ 2·2	86—22nd 23rd	59—1st 2nd
July	30·023	82·8	65·6	74·2	— 0·6	88—21st 28th 31st	61—11th
Aug.	30·006	83·5	69·5	76·5	+ 0·5	94—15th	63—10th 22nd
Sept.	30 002	79·2	66·6	72·9	+ 0·4	85—21st 22nd	56—30th
Oct.	30·014	71 9	63·8	67 9	+ 1·8	78—3rd	58—20th
Nov.	29·993	65·4	54 8	60·1	— 0·4	75—6th	43—15th
Dec.	29 938	61·1	52·7	56·9	+ 0·9	67—15th 18th	44—28th
Year...	30·044	71·0	58·8	64·9	+ 0 7	94—15th August	42—19th January

TABLE II.

Month.	Shade Temperature.			Humidity.		
	7th hour.	13th hour.	21st hour.	7th hour.	13th hour.	21st hour.
January ...	51·7	59·4	53·7	82	65	78
February...	51·5	59·0	54 4	85	68	79
March	53 8	61·1	55·9	80	62	75
April	56·0	65 8	59·9	78	56	73
May	62·1	70·3	64·9	84	63	76
June	66·8	75·2	69·7	79	64	72
July	67 0	78·1	71·8	81	56	70
August ..	70·8	80·0	74·1	78	61	73
September	67·4	76·4	70 8	80	59	72
October	64·5	70·3	66 6	86	74	80
November .	55·8	64·0	58·5	81	65	77
December..	54·3	59·6	56 0	83	73	78
Year	60·1	68·3	63·1	81	64	75

TABLE III.

Month	Terrestrial Radiation. Temperature on the grass.			Solar Radiation. Black bulb in vacuum.		
	Mean	Min.	Date.	Mean	Max.	Date.
January ..	43·9	35	20th	98	117	11th
February...	45·2	38	3rd 8th	96	123	26th
March	49·2	42	13th	102	124	22nd
April.....	50·3	43	11th	116	129	26th
May.....	56·9	48	7th	115	132	25th
June.....	62·5	58	13th	126	138	26th
July.....	62·4	58	13th	133	142	6th
August. ..	67·3	60	10th 19th	128	143	23rd
September	63·4	51	27th	116	134	16th 17th
October	60·1	53	19th 20th	102	130	2nd 4th
November..	50·6	35	15th	97	121	1st 9th
December..	48·7	39	29th	87	112	15th
Year	55·4	35	20th Jan. 15th Nov.	110	143	23rd August

TABLE IV.

Month.	Cloud amount 0–10.			Clear sky days.	Overcast days.
	7th hour.	13th hour.	21st hour.	Less than 0·2 cloud.	More than 0·8 cloud.
January ..	4·3	4·5	3·2	7	3
February ..	5·7	6·1	3·9	6	7
March	4·8	5·2	4·1	5	5
April.....	3·8	3·0	1·9	11	2
May	4·9	4·5	4·0	5	—
June.....	5·5	4·1	3·0	12	9
July.....	2·6	1·0	0·6	20	—
August ..	4·2	3·1	2·7	10	2
September	4·4	4·6	2·7	5	1
October ...	6·6	5·7	5·6	3	9
November	5·7	4·8	3·5	5	4
December..	7·1	6·9	4·4	2	10
Year	5·0	4·5	3·3	91	52

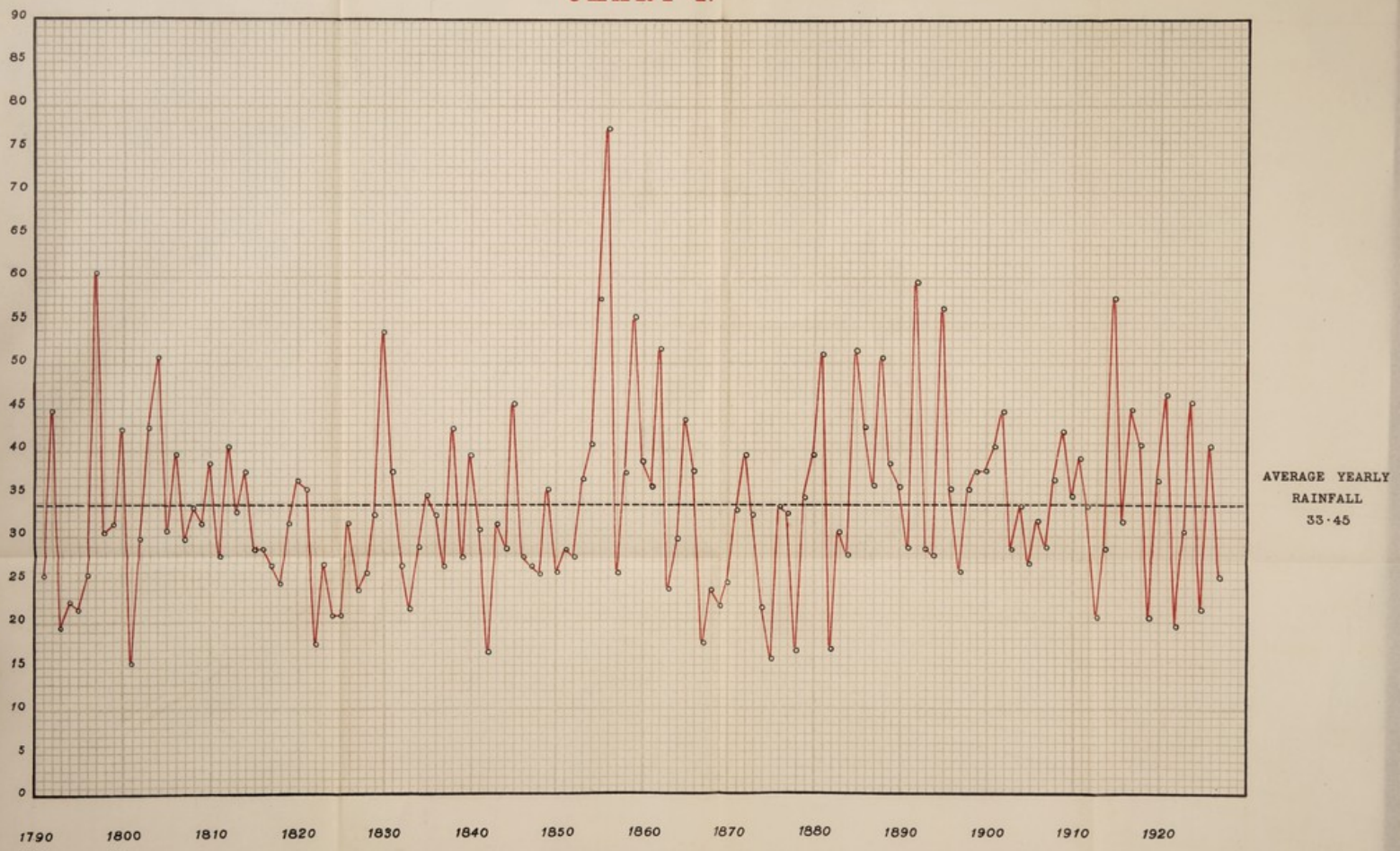
TABLE V.

Month.	Rainfall.		Greatest fall in 24 hours beginning at 7 a.m. inches.	Number of days with 0·1 inches or more.	Number of days with 0·4 inches or more.	Rain Season. 1926-27	
	Total fall inches.	Deviation from average for 40 years.				Month.	Total fall inches.
Jan.	2·28	—2·70	0·34 on 9th	12	9	Aug. ...	0·16
Feb	5·84	+1·62	1·57 „ 17th	18	14	Sept. ...	0·09
March ...	0·94	—3·81	0·23 „ 24th	7	9	Oct. ..	7·40
April ...	1·30	—1·33	0·51 „ 12th	4	4	Nov ...	5·68
May.....	0·77	—0·94	0·31 „ 31st	4	4	Dec. ...	0·37
June	0·19	—0·23	0·19 „ 1st	1	1	Jan. .	2·28
July	—	—0·04	— —	—	—	Feb. ...	5·84
August...	0·07	—0·04	0·07 „ 28th	1	1	Mar. ...	0·94
Sept. ...	0·29	—1·05	0·21 „ 24th	2	2	April ...	1·30
October..	3·48	+0·16	1·10 „ 14th	12	10	May ...	0·77
Nov.....	6·50	+0·12	2·17 „ 19th	9	9	June ..	0·19
Dec.....	14·39	+8·78	2·90 „ 24th	19	17	July ...	—
Year	36·05	+0·54	2·90 on 24th December	89	80		25·02

TABLE VI.

Month.	Winds obs. at 7-13-21 hr. 1095=year.								Calm.	Force 1 to 3	Force 4 to 7	Force 8 or more.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.				
January ..	—	2	10	2	1	15	48	15	—	24	69	—
February...	—	9	17	7	3	19	16	13	—	26	58	—
March	2	1	16	2	3	13	43	13	—	4	89	—
April	—	6	31	12	3	17	15	5	1	19	70	—
May	—	1	25	13	4	32	14	2	2	40	51	—
June	—	4	15	29	—	30	9	2	1	51	38	—
July	—	3	16	5	3	38	22	4	2	33	58	—
August	—	3	25	19	2	28	9	2	5	32	56	—
September.	1	1	23	7	6	26	14	9	3	28	59	—
October ..	—	4	44	14	1	13	9	5	3	33	57	—
November..	5	3	17	7	3	23	11	19	2	37	50	1
December...	4	—	4	—	3	31	26	25	—	29	64	—
Year.....	12	37	243	117	32	285	236	114	19	356	719	1

CHART I.



GRAPHIC REPRESENTATION OF

GIBRALTAR RAINFALL

From 1790 to 1927.

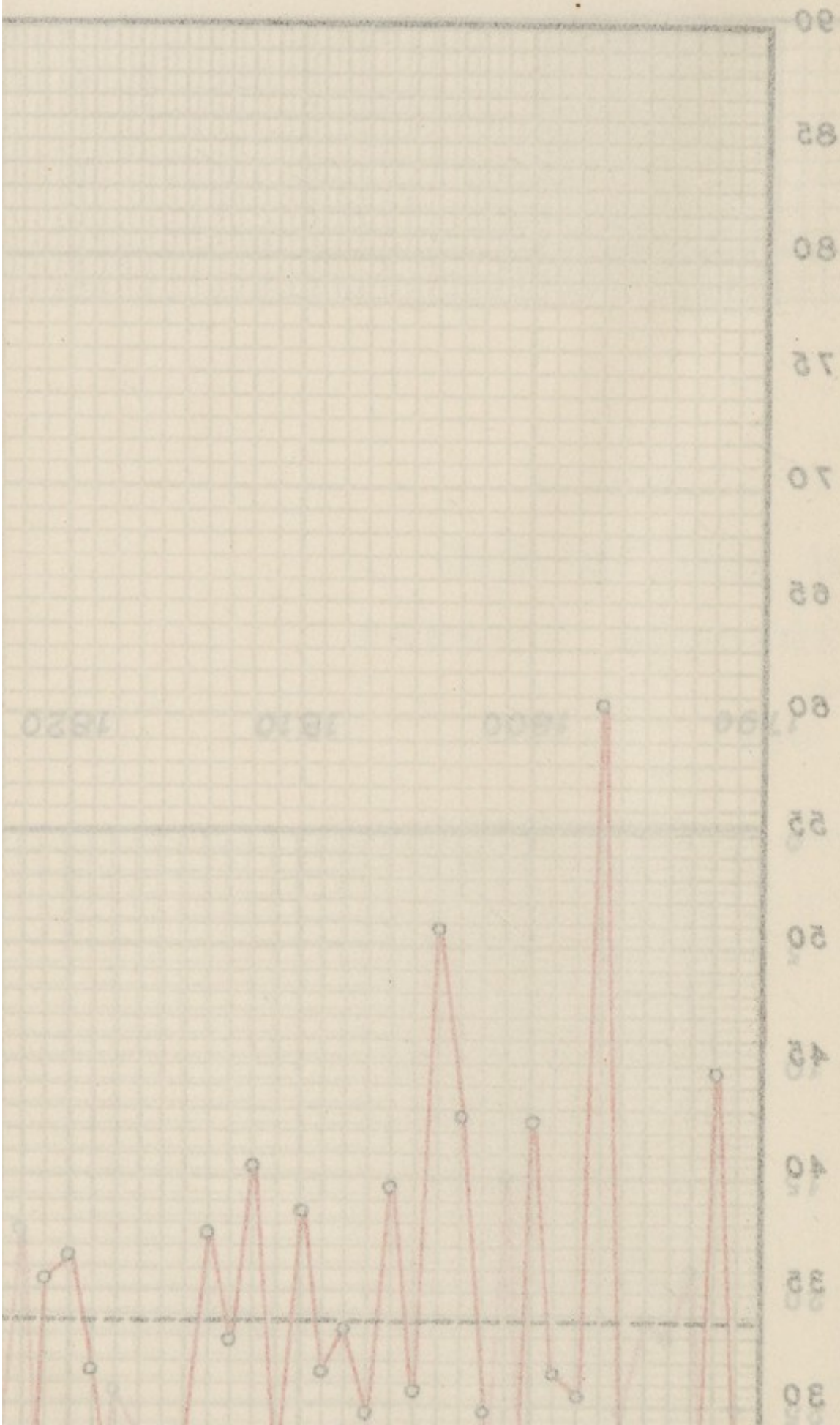

90
85
80
75
70
65
60
55
50
45
40
35
30

TABLE VII.

Table shewing the quantity of rain which has fallen at Gibraltar in the course of each season from 1790 to 1927.—N.B.—In Gibraltar the fall of rain is calculated for the rain year which commences with the first rainfall after July of one year and terminates the day before the first rain recorded after July the following year.

YEAR.	QUANTITY. *Inches.*	YEAR.	QUANTITY. *Inches.*	YEAR.	QUANTITY. *Inches.*
1790—1791	... 25·09	1836—1837	... 26·16	1882—1883	... 30·15
91— 92	... 44·05	37— 38	... 42·43	83— 84	... 27·38
92— 93	... 19·08	38— 39	... 27·41	84— 85	... 50·45
93— 94	... 22·36	39— 40	... 39·34	85— 86	... 42·77
94— 95	... 21·56	40— 41	... 30·91	86— 87	... 36·06
95— 96	... 25·64	41— 42	... 16·19	87— 88	... 50·71
96— 97	... 65·11	42— 43	... 31·02	88— 89	... 38·17
97— 98	... 30·35	43— 44	... 28·13	89— 90	... 35·75
98— 99	... 31·19	44— 45	... 45·13	90— 91	... 28·29
99—1800	... 42·21	45— 46	... 27·34	91— 92	... 59·35
1800— 01	.. 15·12	46— 47	... 26·36	92— 93	... 28·01
01— 02	... 29·49	47— 48	... 24·41	93— 94	... 27·10
02— 03	... 42·64	48— 49	... 35·01	94— 95	... 56·11
03— 04	... 50·91	49— 50	... 24·66	95— 96	... 35·05
04— 05	... 30·61	50— 51	... 28·36	96— 97	... 25·86
05— 06	... 39·45	51— 52	... 27·52	97— 98	... 35·35
06— 07	... 29·69	52— 53	... 36·72	98— 99	... 37·48
07— 08	... 33·01	53— 54	... 40·87	99—1900	... 37·63
08— 09	... 31·22	54— 55	... 57·86	1900— 01	... 40·07
09— 10	... 38·36	55— 56	... 77·14	01— 02	... 44·50
10— 11	... 27·68	56— 57	... 25·72	02— 03	... 28·04
11— 12	... 40·37	57— 58	... 37·31	03— 04	... 33·22
12— 13	... 33·03	58— 59	... 55·69	04— 50	... 26·99
13— 14	... 37·32	59— 60	... 38·96	05— 06	... 31·95
14— 15	... 28·35	60— 61	... 36·00	06— 07	... 28·32
15— 16	... 28·58	61— 62	... 51·76	07— 08	... 36·19
16— 17	... 26·70	62— 63	... 23·58	08— 09	... 33·36
17— 18	... 24·21	63— 64	... 29·44	09— 10	... 33·38
18— 19	.. 31·47	64— 65	... 43·49	10— 11	... 39·03
19— 20	... 36·28	65— 66	... 37·49	11— 12	... 33·45
20— 21	... 35·30	66— 67	... 17·30	12— 13	... 20·27
21— 22	... 17·28	67— 68	... 23·83	13— 14	... 28 38
22— 23	... 26·65	68— 69	... 21·92	14— 15	... 57·81
23— 24	... 20·73	69— 70	... 24·10	15— 16	... 31 97
24— 25	... 20 86	70— 71	... 33·00	16— 17	... 44·84
25— 26	... 31·78	71— 72	... 39·33	17— 18	... 40·43
26— 27	... 23·73	72— 73	... 32·51	18— 19	... 20·22
27— 28	... 25·82	73— 74	... 21·66	19— 20	... 36 65
28— 29	... 32·27	74— 75	... 15·86	20— 21	... 46·11
29— 30	... 53·45	75— 76	... 33·36	21— 22	... 19·54
30— 31	... 37·39	76— 77	... 32·79	22— 23	... 31 17
31— 32	... 26·74	77— 78	... 16·64	23— 24	... 45·55
32— 33	... 21·93	78— 79	... 34·74	24— 25	... 21·51
33— 34	... 28·91	79— 80	... 39·17	25— 26	... 40·11
34— 35	... 34·85	80— 81	... 51·04	26— 27	... 25 02
35— 36	... 32·32	81— 82	... 16·75		

VITAL STATISTICS.

An estimate by the Police Authorities at the end of 1927 forms the basis on which the various rates connected with the vital statistics have been calculated in this report.

Data concerning the Naval and Military population are not included in this Report.

1. POPULATION.

The total Civil population is estimated at 17,196 persons of which number 16,023 are British subjects other than Maltese, 97 British subjects born in Malta, 160 aliens resident in the Bay, and 916 aliens resident in the Town.

The following table shows the fluctuation in population of Gibraltar during recent years :—

	British Subjects Fixed Population.	Alien Subjects Floating Population.	Total Population.
Census April 1911	17,021	2,565	19,586
Police Estimate at end of 1913	16,147	2,301	18,448
Police Estimate at end of 1914	16,086	1,950	18,036
Police Estimate at end of 1915	16,163	1,780	17,943
Police Estimate at end of 1916	16,499	1,947	18,446
Police Estimate at end of 1917	16,549	1,977	18,526
Police Estimate at end of 1918	16,096	1,867	17,963
Police Estimate at end of 1919	16,040	1,733	17,773
Police Estimate at end of 1920	16,181	1,509	17,690
Census June 1921	16,753	1,787	18,540
Police Estimate at end of 1922	16,182	1,145	17,327
Police Estimate at end of 1923	16,165	1,181	17,346
Police Estimate at end of 1924	16,177	1,147	17,324
Police Estimate at end of 1925	16,127	1,161	17,288
Police Estimate at end of 1926	16,150	1,013	17,163
Police Estimate at end of 1927	16,120	1,076	17,196

VITAL STATISTICS DURING 1927 AND PREVIOUS YEARS.

Year	Population.			Deaths.				Infantile Mortality.		Births.		Zymotic Mortality.	
	Fixed.	Total.	How Estimated.	Fixed population. No.	Total population. No.	Rate per 1,000 of population. Fixed population.	Rate per 1,000 of population. Total population	No.	Rate per 1,000 birth.	No.	Birth rate per 1,000 living of Fixed population	No.	Rate per 1,000 living of Fixed population.
1881	16186	18381	By M.O.H.	373	374	23·04	20·34	77	156·2	493	30·04	53	2·88
1882	16258	18453		522	522	32·10	28·28	92	207·2	444	27·3	111	6·01
1883	16330	18525		413	450	27·12	24·28	72	148·4	485	29·7	91	4·91
1884	16402	18597		342	350	20·85	18·82	77	157·7	488	29·7	59	3·17
1885	16474	18669		488	498	29·62	26·67	91	183·1	497	30·1	94	5·03
1886	16546	18741		383	388	23·14	20·70	76	161·7	470	28·4	65	3·46
1887	16618	18813		506	510	30·44	27·10	87	178·6	487	29·3	167	8·87
1888	16690	18885		380	388	22·76	20·54	100	193·8	516	30·9	89	4·71
1889	16762	18957		410	411	24·46	21·68	76	157·3	483	28·8	106	5·59
1890	16834	19029		416	422	24·71	22·17	64	130·6	493	29·1	80	4·20
1891	16906	19100	Census 1891	350	362	20·70	18·95	74	152·3	486	28·1	58	3·03
1892	16906	19100		411	415	24·31	21·72	100	183·4	545	32·23	60	3·14
1893	16906	19100		335	339	19·81	17·74	86	170·3	504	29·8	47	2·46
1894	16906	19100		402	418	24·37	21·88	86	180	477	28·21	69	3·61
1895	16906	19100		363	374	21·47	19·58	76	145·8	521	30·81	43	2·25
1896	16906	19100		345	373	20·40	19·52	62	114·8	540	31·92	52	2·69
1897	16906	19100		430	450	25·43	23·56	98	184·9	530	31·34	72	3·77
1898	16906	19100		317	340	18·74	17·19	69	139·9	493	29·16	26	1·36
1899	16906	19100		412	420	24·36	22·03	97	183	530	31·34	55	2·87
1900	16906	19100		438	455	25·90	23·81	80	157·8	507	29·98	54	2·82
1901	17373	20355	Census 1901	371	380	21·35	18·66	59	108·45	544	31·29	30	1·47
1902	17373	20355		461	474	26·53	23·20	91	180·19	505	29·06	95	4·66
1903	17488	20648	By M.O.H.	353	364	20·18	17·62	92	179·6	512	29·27	43	2·11
1904	17530	20780		326	338	18·59	16·26	63	123	455	25·9	16	0·76
1905	17596	20910		375	380	21·31	18·17	72	133	538	30·57	47	2·29
1906	17975	21045		334	346	18·5	16·4	67	149	458	25·5	32	1·52
1907	17373	20355	Census 1901	300	307	16·95	14·49	44	102	431	22·44	5	0·23
1908	15542	18316	Police Estimate	299	309	18·7	16·87	58	132	439	28·2	17	0·92
1909	15614	18351		268	277	17·16	15·09	32	73·4	436	27·9	7	0·44
1910	15451	18134		320	328	20·49	17·87	53	135	390	25·2	28	1·52
1911	17135	19586	Census 1911	301	314	17·56	16·03	50	119	418	24·3	23	1·17
1912	17135	19586		283	303	16·51	15·47	31	78	398	23·2	25	1·27
1913	16147	18448	Police Estimate	247	269	15·29	14·58	29	75	386	23·90	9	0·47
1914	16086	18036		270	278	15·41	14·97	36	93	387	24·4	17	0·94
1915	16163	17943		271	298	16·7	16·6	33	90·1	366	22·6	16	0·89
1916	16499	18446		276	284	16·73	15·39	42	123·5	340	20·6	27	1·47
1917	16549	18526		272	293	16·43	15·81	42	113·5	370	22·35	14	0·75
1918	16096	17963		386	400	23·98	22·26	49	124·3	394	24·47	8	0·45
1919	16040	17773		308	318	19·20	17·89	43	107·7	399	24·9	21	1·18
1920	16181	17690		297	308	18·72	17·45	48	128	375	23·2	20	1·13
1921	16753	18540	Census 1921	282	292	15·74	16·83	44	102·5	429	25·6	33	1·78
1922	16182	17327	Police Estimate	298	304	18·40	17·54	38	103·8	366	22·6	27	1·56
1923	16165	17316		285	294	17·63	16·95	40	109·5	365	22·57	32	1·84
1924	16177	17324		250	254	15·45	14·66	33	91	360	22·25	18	1·05
1925	16127	17288		249	256	15·44	14·80	31	83	372	23	10	0·52
1926	16150	17163		271	276	16·78	16·08	46	107	427	25	20	1·2
1927	16120	17196		291	297	18·05	17·27	36	99·1	363	22	13	0·8

These figures represent the population of Gibraltar between the hours of 10 p.m. and 5·30 a.m. To calculate the daily population it will be necessary to add some 5,000 Aliens and 1,500 British subjects residing at La Linea who come into Gibraltar daily.

The age and sex incidence of the population of Gibraltar is as follows :—

	Persons of ten years of age and over.		Persons under 10 years of age.	
	Males.	Females.	Males.	Females.
British Subjects	5,286	6,131	2,381	2,225
Maltese	80	17		
Aliens in the Bay	160			
Aliens in the Town	237	679		
Totals	5,763	6,827	2,831	2,225

Total Males 8,144 ; Females 9,052.

2. DEATHS.

The number of deaths registered for the Civil population of Gibraltar during the year was 297, in addition to 39 persons who died after being landed from the Bay or brought into the Town for treatment.

Two hundred and ninety-one deaths occurred amongst British subjects and six amongst resident aliens.

The crude death rate per 1,000 of the fixed population is 18·05, that of the total population 17·27.

The standardised death rate of the total population, obtained by multiplying the crude death rate by the factor 1·177 is 20·32.

The following table shows the crude death rate for the past 10 years :—

Year	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Fixed Population	23·98	19·20	18·72	15·74	18·40	17·63	15·45	15·44	16·78	18·05
Total Population	22·26	17·89	17·45	16·83	17·54	16·95	14·66	14·80	16·08	17·27

3. MONTHLY AND QUARTERLY MORTALITY.

The highest number of deaths occurred in January and December, and the lowest in September.

As in the previous year the death rate during the first quarter of the year was the highest and that of the third the lowest.

The number of deaths registered each month was as follows:—

January	40	April	23	July	24	October	24
February	30	May	22	August	21	November	28
March	36	June	29	September	19	December	40
	106		74		64		92

These figures include cases landed from ships in the Bay or brought into the Town for treatment.

Causes of death in Civil population in 1927 according to the International Abbreviated List, with Age and Sex incidence.

Cause of Death.	All Ages	Under 1 year.		1 year and under 2.		2 years and under 5.		5 years and under 15.		15 years and under 25.		25 years and under 45.		45 years and under 65.		65 years and over.		Deaths in Institutions.
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
8. Diphtheria and Croup ..	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
9. Influenza	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	6	8
12. Other epidemic diseases...	2	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	1
13. Phthisis (Pulmonary Tuberculosis)	22	—	—	—	—	2	—	1	—	2	3	4	3	3	—	4	—	2
14. Tuberculous Meningitis .	5	—	—	—	—	—	2	1	1	1	—	—	—	—	—	—	—	—
15. Other Tuberculous diseases	3	—	—	—	—	—	—	—	—	—	—	2	—	1	—	—	—	1
16. Cancer, Malignant disease	16	—	—	—	—	—	—	—	—	—	—	—	—	8	1	3	4	3
17. Meningitis	2	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	2
18. Cerebral Hæmorrhage and Softening	17	—	—	—	—	—	—	—	—	—	—	—	—	3	2	6	6	5
19. Organic Heart Disease ...	23	1	—	—	—	—	—	—	—	—	1	1	1	3	3	5	8	7
20. Acute Bronchitis	5	1	2	—	—	—	—	—	—	—	—	1	—	—	—	—	1	1
21. Chronic Bronchitis ...	11	—	—	—	—	—	—	—	—	—	—	—	—	4	—	4	3	5
22. Pneumonia	27	4	—	2	2	—	—	3	1	1	—	1	—	3	2	5	3	6
23. Other diseases of respiratory system ...	3	—	—	—	—	—	—	—	—	—	—	2	—	1	—	—	—	1
24. Diseases of the Stomach..	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	2
25. Diarrhœa and Enteritis (under 2 years)	12	7	4	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
26. Appendicitis & Typhlitis	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
27. Hernia Intestinal obstruction	2	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	2
28. Cirrhosis of Liver... ...	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—
29. Acute Nephritis and Bright's Disease ...	18	—	—	—	1	—	—	—	—	—	—	—	—	9	2	2	4	6
32. Other accidents and diseases of pregnancy	2	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
33. Congenital Debility and Malformation (including premature birth)...	12	5	6	1	—	—	—	—	—	—	—	—	—	—	—	—	—	4
34. Senility	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	19	15
35. Violent Death (excluding Suicides)	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	2
36. Suicides	1	—	—		—	—	—	—	—	—	—	—	—	1	—	—	—	1
37. Other defined diseases ...	64	3	—		—	2	—	—	1	—	1	3	4	18	8	16	13	23
38. Diseases ill-defined or unknown	8	1	—	—	—	—	—	—	—	—	—	2	1	1	1	—	2	1
Totals	297	23	13	3	4	6	2	6	3	4	5	17	10	57	19	54	72	101

DEATHS REGISTERED IN THE CITY OF GIBRALTAR DURING THE YEAR 1927.
(Civil Population).

Cause of Death.	Sex.		Ages.								Districts.			Public Institutions.					
	Males.	Females.	Under 1 year.	1 year & under 2.	2 years & under 5.	5 years & under 15.	15 years & under 25.	25 years & under 45.	45 years & under 65.	65 years & over.	North.	Central.	South.	Colonial Hospital.	Gibraltar Home for Sick and Aged.	Little Sisters of the Poor.	Lunatic Asylum.	Garrino's Asylum.	Berrio's Home.
ALL CAUSES.	167	130	36	7	7	9	9	27	76	126	3	250	44	65	5	17	6	6	2
I.—Epidemic, Endemic and Infectious Diseases	29	17	2	...	6	3	6	10	5	14	1	37	8	6	3	8	...	...	...
II.—General Diseases not included in I	16	10	..	...	...	...	1	2	14	9	1	23	2	3	...	...	...	...	...
III.—Diseases of the Nervous System and Sense Organs	13	15	...	...	1	1	...	1	9	16	...	24	4	7	...	...	2	1	...
IV.—Diseases of the Circulatory System	27	22	1	...	...	...	1	4	14	29	...	45	4	12	1	...	...	1	...
V.—Diseases of the Respiratory System	22	14	7	4	...	4	1	4	9	17	1	41	4	12	...	...	...	1	1
VI.—Diseases of the Digestive System	14	10	11	1	...	...	...	2	5	5	...	20	4	3	...	1	1	...	...
VII.—Non-Venereal Diseases of the Genito-Urinary System and Annexa	13	7	...	1	...	...	...	...	11	8	...	18	2	4	...	...	...	1	...
VIII.—The Puerperal State	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
IX.—Diseases of the Skin and Cellular Tissue	2	2	...	...	...	...	...	...	3	1	...	4	...	3	...	...	...	...	...
X.—Diseases of the Bones and Organs of Locomotion	...	1	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...
XI.—Congenital Malformations	2	1	3	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...
XII.—Diseases of Early Infancy	7	6	12	1	...	...	...	...	...	...	...	9	4	4	...	...	...	...	...
XIII.—Old Age	6	19	...	...	...	...	...	...	...	25	...	15	10	2	1	8	2	2	...
XIV.—External Causes	3	...	...	...	...	...	...	...	3	...	...	2	1	2	...	...	...	...	1
XV.—Ill-Defined Diseases	3	5	...	...	...	...	...	3	3	2	...	7	1	3	...	...	1	...	...
I.—Diphtheria	1	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Influenza	3	6	..	..	..	..	..	..	..	9	..	1	8	..	..	..	..	..	..
Dysentery	..	1	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..
Encephalitis Lethargica	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	8	..	..	..
Tuberculosis—																			
Respiratory System	17	6	..	..	2	1	5	8	3	4	..	23	..	3	2	..	..	..	..
Central Nervous System	2	3	..	..	2	2	1	..	..	..	1	4	..	..	..	..	..	..	..
Vertebral column	2	..	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..
Syphilis	2	1	2	..	..	..	..	1	..	..	..	3	..	..	1	..	..	..	..
Gonococcal Infection	1	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..
II.—Cancer, Malignant Disease—																			
Buccal cavity	2	..	..	..	..	..	..	..	1	1	..	2	..	1	..	..	..	..	..
Pharynx, oesophagus, stomach, liver and pancreas	5	3	..	..	..	..	..	..	5	3	1	7	..	2	..	..	..	..	..
Breast	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Other or unspecified organs	4	1	..	..	..	..	..	..	3	2	..	5	..	..	..	..	..	..	..
Tumours not returned as malignant (brain and female genital organs excepted)	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Rheumatic Fever	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..
Diabetes	1	2	..	..	..	..	1	..	2	..	..	3	..	..	..	..	..	..	..
Anæmia	1	1	..	..	..	..	..	1	..	1	..	1	1	..	..	..	..	..	..
Diseases of the adrenals	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
Leukæmia	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
Alcoholism	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..
III.—Meningitis	2	..	..	..	..	1	..	..	1	..	..	2	..	2	..	..	..	..	..
Cerebral Hæmorrhage, Apoplexy, &c.	9	10	..	..	..	..	..	1	5	13	..	16	3	2	..	..	2	1	..
Paralysis of unstated origin	1	5	..	..	..	..	..	..	3	3	..	6	..	3	..	..	..	..	..
Convulsions	1	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..
IV.—Pericarditis	2	1	..	..	..	..	..	..	2	1	..	3	..	..	1	..	..	..	..
Acute endocarditis and myocarditis	..	1	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..
Angina pectoris	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Other diseases of the heart	10	13	1	..	..	..	1	2	6	13	..	20	3	6	..	..	..	1	..
Diseases of the arteries	15	6	..	..	..	..	..	1	6	14	..	20	1	5	..	..	..	..	..
V.—Bronchitis	10	6	3	..	..	..	..	1	5	7	..	15	1	5	..	..	..	1	..
Broncho-Pneumonia	12	7	3	4	..	2	1	1	2	6	..	17	2	3	..	..	..	..	1
Pneumonia (lobar or not otherwise defined)	7	1	1	..	..	2	..	1	1	3	1	6	1	2	..	..	..	..	..
Congestion and hæmorrhagic infarct of lung	2	..	..	..	..	..	..	..	1	1	..	2	..	1	..	..	..	..	..
Other diseases of the respiratory system	1	..	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..
VI.—Diseases of the buccal cavity and annexa	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..
Ulcer of the stomach or duodenum	1	1	..	..	..	..	..	..	1	1	..	1	1	1	..	1	..	..	..
Diarrhœa and Enteritis (under 2 years)	7	5	11	1	..	..	..	..	..	..	..	10	2	1	..	..	..	..	..
Diarrhœa and Enteritis (over 2 years)	1	2	..	..	..	..	..	..	..	3	..	3	..	..	..	..	..	..	..
Appendicitis	1	..	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..
Hernia, Intestinal obstruction	1	1	..	..	..	..	..	..	1	1	..	1	1	1	..	..	1	..	..
Cirrhosis of the Liver	2	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..
Other diseases of the Liver	..	1	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
VII.—Acute Nephritis	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Chronic Nephritis	11	6	..	..	..	..	..	..	11	6	..	15	2	4	..	..	..	..	..
Other diseases of the kidney and annexa	2	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	1	..
VIII.—Puerperal phlegmasia, alba dolens, embolism, and sudden death	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..
IX.—Gangrene	..	2	..	..	..	..	..	..	1	1	..	2	..	1	..	..	..	..	..
Carbuncle, boil	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
Cellulitis, acute abscess	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
X.—Diseases of the bones	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..
XI.—Congenital Malformations	2	1	3	..	..	..	..	..	..	..	..	3	..	1	..	..	..	..	..
XII.—Congenital debility, sclerema and icterus	3	3	5	1	..	..	..	..	..	..	..	6	..	4	..	..	..	..	..
Premature birth, injury at birth	3	3	6	..	..	..	..	..	..	..	..	2	4	..	..	..	..	..	..
Other diseases peculiar to early infancy	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
XIII.—Old Age	6	19	..	..	..	..	..	..	..	25	..	15	10	2	1	8	2	2	..
XIV.—Suicide	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1
Homicide	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
Violent death of unstated nature and cause	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
XV.—Sudden death	1	1	..	..	..	..	..	1	1	..	..	2	..	1	..	..	..	..	..
Cause of death unstated or ill-defined	2	4	..	..	..	..	..	2	2	2	..	5	1	2	..	..	1	..	..
Males	167	..	23	3	5	6	4	17	57	54	2	146	19	44	4	3	1	2	1
Females	..	103	13	4	2	3	5	10	19	72	1	104	25	21	11	3	5	3	1

MATERNITY AND CHILD WELFARE.

Maternity and Child Welfare work has continued to progress during the year. This work, carried out under various local authorities, varies in the different districts; its effectiveness depends on many factors, including local interest taken in Public Health and available facilities for medical treatment.

There has been no falling off in the interest which is taken generally by the public of Gibraltar in this work.

The local facilities for medical treatment include complete provision for the care of poor expectant mothers both in the outpatient and inpatient departments of the Colonial Hospital. In the Maternity Department of the Hospital (Maternity Ward provided in 1921) complete provision is also made for the care of poor women in labour and during the early stages of the puerperium, till they are able to return home. Diseases of mothers and infants (Children's Ward established in 1922) are treated in the Hospital wards and outpatient department.

Women who are unwilling or unable to come into Hospital and yet cannot afford to pay for a midwife are provided with one free on the recommendation of the Medical Officer of Health.

There is a Welfare Centre which was established in 1918 and which is now well attended and doing excellent work.

That these facilities are being taken full advantage of may be seen from the following:—

In 1922	there	were	18	women	admitted	to the Maternity Ward	Colonial Hospital.
„ 1923	„	„	21	„	„	„	„
„ 1924	„	„	48	„	„	„	„
„ 1925	„	„	75	„	„	„	„
„ 1926	„	„	115	„	„	„	„
„ 1927	„	„	98	„	„	„	„

The Children's	Ward	had	177	children	admitted	in 1924
„	„	„	164	„	„	1925
„	„	„	157	„	„	1926
„	„	„	128	„	„	1927

In 1918—19	women in poor circumstances	had their confinements paid	for out of Colonial funds.	
„ 1919—36	„	„	„	„
„ 1920—30	„	„	„	„
„ 1921—47	„	„	„	„
„ 1922—43	„	„	„	„
„ 1923—44	„	„	„	„
„ 1924—50	„	„	„	„
„ 1925—69	„	„	„	„
„ 1926—45	„	„	„	„
„ 1927—33	„	„	„	„

There is a tendency for more women to go to the Colonial Hospital for their confinements, and a consequent decrease of cases attended by the midwife and paid for by the Colonial Government.

Attendances at the Welfare Centre have risen from 300 in 1920 to 2,015 in 1927.

STATISTICS.

The number of children born during the year 1927 was 363, and the birth rate was 22·5.

Of the 363 births 185 were males and 178 females.

The following is the birth rate of Gibraltar compared with that of England and Wales and Malta :—

Year	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
England and Wales	17·7	18·5	25·4	22·4	20·6	19·7	18·8	18·3	17·8	16·7
Malta	—	—	—	—	36·4	34·5	34·6	33·3	32·9	—
Gibraltar...	24·4	24·9	23·2	25·6	22·6	22·5	22·2	23	25·2	22·5

INFANTILE MORTALITY.

Thirty-six deaths of infants under one year of age occurred in 1927, giving an infantile mortality (number of deaths under one year of age per 1,000 births) of 99·1 compared with 107·9 in 1926.

This is a decrease of 8·8 per 1,000 births as compared with the previous year.

The decline in the infant mortality rate is very satisfactory especially as at periods during the year there has been a considerable amount of unemployment, and a dependence on the part of many families on some form of assistance.

The principal causes of infantile mortality were :—

Ante-Natal—

Atrophy, Debility and Marasmus 7
Premature Births 4

Post-Natal—

Gastro Enteritis and Diarrhœa..... 10
Pneumonia and Bronchitis 7

In the period 1913-27 (15 years) out of a total of 590 deaths of infants under 1 year of age, 149 were due to Enteritis ; 134 to Atrophy, Debility and Marasmus ; 74 to Premature Birth and 82 to Bronchitis and Pneumonia. That is, 74 per cent. of the infantile deaths for this period were due to these four causes.

In order to combat these causes of infantile mortality the public are encouraged to take full advantage of the facilities afforded at the Colonial Hospital, both for confinement and for ante-natal supervision.

Increased efficiency in general hygiene, better housing and anti-fly measures will greatly assist in the endeavour to reduce infantile mortality.

The following table shows the infantile mortality for the United Kingdom, Malta and Gibraltar:—

INFANTILE MORTALITY PER 1,000 BIRTHS, 1911-1927.

Year	England & Wales	Malta	Gibraltar
1911	130	—	119
1912	95	—	78
1913	108	—	75
1914	105	—	93
1915	110	—	90
1916	91	—	123
1917	96	—	113
1918	97	—	124
1919	89	—	108
1920	80	—	128
1921	83	—	102
1922	77	261	103
1923	69	280	109
1924	75	268	91
1925	75	271	83
1926	70	260	107
1927	69	—	99

WELFARE CENTRE.

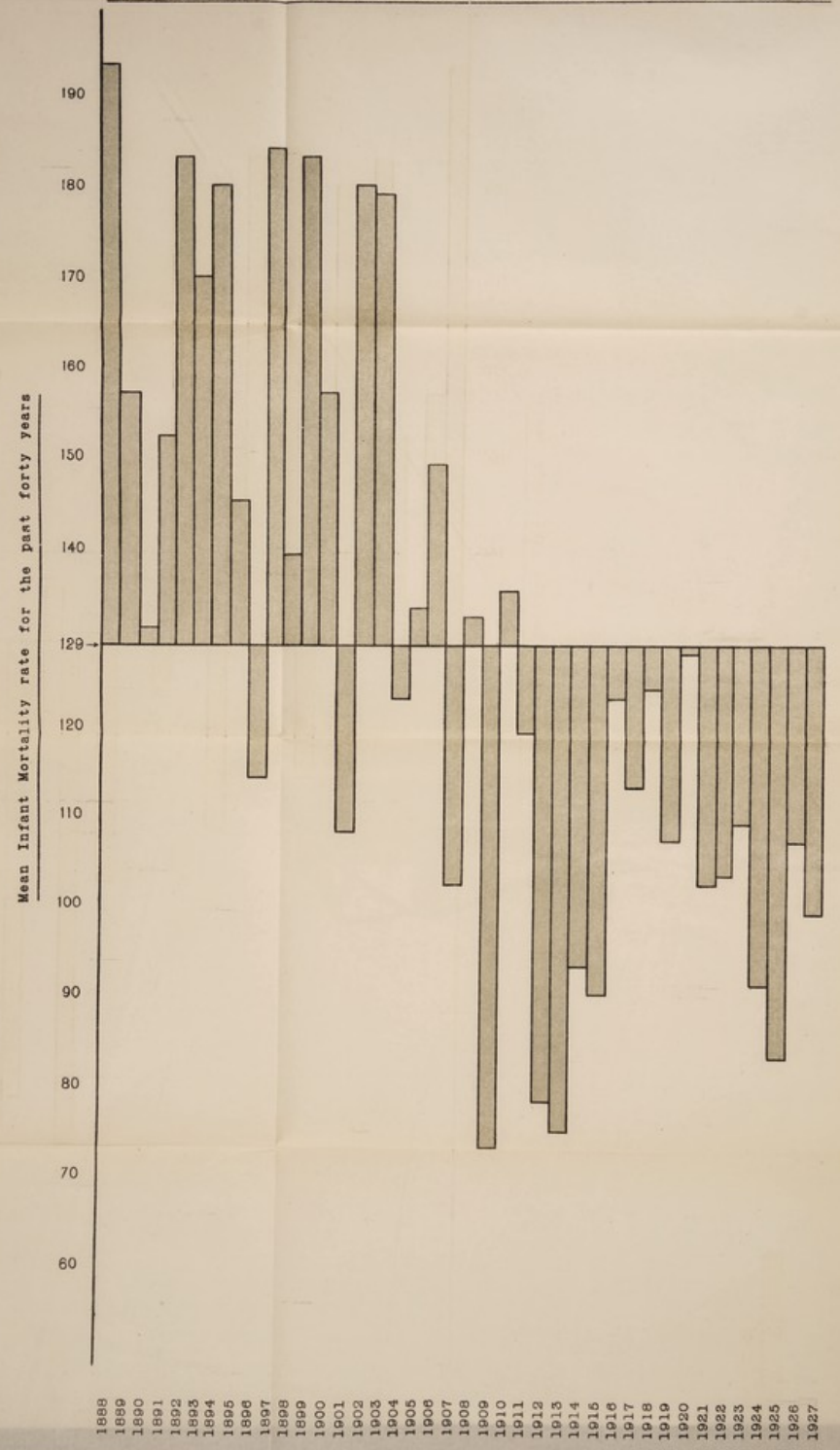
There has been a record number of attendances during the year, the number being 2,615 attendances of mothers bringing 158 children to be weighed.

The following is the amount of milk, Virol and other food preparations, &c., distributed during the year, either free or at half cost, to nursing mothers and infants under 2 years of age:—

Milk	4,030 tins
Malted Glaxo	24 ,,
Glaxo	218 ,,
Virol	74 pots
Lactogen	47 tins
Guigoz Dried Milk	16 ,,
Feeders	51

INFANTILE MORTALITY

DIAGRAM SHOWING THE ANNUAL DEPARTURE FROM THE MEAN OF THE 40 YEARS 1888-1927



During the year the trained nurse has paid 180 visits to the homes of children, this keeping them under constant observation.

The distribution of infant clothing by the Gibraltar Needlework Guild has been of the greatest assistance for mothers in poor circumstances.

MIDWIVES.

Under the Midwives' Ordinance, 1907, there are 6 midwives on the register.

None of these are trained nurses.

Registered midwives attended 231 births during the year or 63·6 per cent of the total births, compared with 62 per cent. in 1927; 67 per cent. in 1925; 69 per cent. in 1924; 73 per cent. in 1923; 75 per cent. in 1922; 86 per cent. in 1921; 79 per cent. in 1920; and 83 per cent. in 1919.

The number of births attended by unregistered midwives was 2.

There were 9 still-births in 1927, compared with 30 in 1926; 26 in 1295; 26 in 1924; 19 in 1923; 21 in 1922; 23 in 1921; 26 in 1920.

In 2 instances midwives summoned medical help which was paid out of Colonial funds.

Thirty-three expectant mothers in poor circumstances had their confinements paid out of Colonial funds.

Periodical inspection of midwives were carried out during the year in accordance with the Midwives' Ordinance, 1907. On the whole the bags, &c., were found satisfactory.

No midwife gave cause for suspension during the year.

*SCHOOL CLINIC.

The School Clinic has been carried on by members of the Medical and Nursing Staff as in former years, and the school dentist, Mr. Garesse, continued his work in his consulting rooms.

---

*Annual Medical Report, Colonial Hospital

CAUSES OF, AND AGES AT, DEATH OF INFANTS UNDER ONE YEAR OF AGE IN GIBRALTAR DURING 1927.

Cause of Death.	Under 1 week.	1—2 weeks.	2—3 weeks.	3—4 weeks.	Total under 4 weeks.	1—3 months.	3—6 months.	6—9 months.	9—12 months.	Total infant deaths under 1 year.
Common Infectious Diseases	—	—	—	—	—	—	—	—	—	—
Tuberculosis	—	—	—	—	—	—	—	—	—	—
Pneumonia & Bronchitis..	—	—	—	—	—	1	2	3	1	7
Diarrhœa and Enteritis ...	—	—	—	—	—	3	6	1	—	10
Syphilis	—	—	—	—	—	1	1	—	—	2
Complications of Birth ...	1	—	—	—	1	—	—	—	—	1
Congenital Malformation	—	—	1	—	1	—	—	—	—	1
Premature Birth	4	—	—	—	4	—	—	—	—	4
Atrophy, Debility and Marasmus	1	—	2	—	3	—	2	—	1	6
Other Diseases	2	—	1	—	3	—	1	1	—	5
Totals	8	—	4	—	12	5	12	5	2	36
Death rate in each age period per 1,000 births	22·03	—	11 01	—	33·05	13·7	33·05	13 7	5·5	99·1
Percentage of total infant deaths occurring in each age period	22·2	—	11·1	—	33·3	13·8	33·3	13 8	5·5	—

DEATHS PER 10,000 POPULATION

MINNEAPOLITAN DURING 1888-1927

1888			
1889			
1890			
1891			
1892			
1893			
1894			
1895			
1896			
1897			
1898			
1899			
1900			
1901			
1902			
1903			
1904			
1905			
1906			
1907			
1908			
1909			
1910			
1911			
1912			
1913			
1914			
1915			
1916			
1917			
1918			
1919			
1920			
1921			
1922			
1923			
1924			
1925			
1926			
1927			

DIARRHOEA AND ENTERITIS IN GIBRALTAR DURING 1888-1927

CHART SHOWS NUMBER OF DEATHS PER 10.000 POPULATION

Detailed Statement showing the Number and Causes of Death under 1 year, 1913-1927.

Cause of Death	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	Total.
Meningitis	4	3	4	2	3	3	2	3	1	2	1	4	2	2	—	33
Convulsions	3	1	1	4	2	4	—	—	1	—	1	1	2	1	—	21
Bronchitis	—	1	1	1	—	1	2	2	1	1	1	—	2	—	3	16
Pneumonia	—	2	2	1	7	8	5	1	5	6	3	8	6	8	4	66
Enteritis	9	13	6	12	7	3	16	13	11	15	10	5	5	16	8	149
Syphilis	—	1	—	—	—	1	—	1	2	—	—	1	1	—	2	9
Atelectasis	—	1	1	1	2	2	—	1	—	—	—	—	—	—	—	8
Premature Birth	2	3	10	3	6	1	9	10	5	3	7	—	1	10	4	74
Atrophy, Debility and Marasmus ...	5	6	4	14	13	19	5	14	11	7	5	12	8	4	7	134
Diphtheria	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Measles	—	—	—	1	—	—	—	—	3	1	—	—	—	—	—	5
Nephritis	—	—	—	1	—	—	—	—	2	—	—	—	—	—	—	3
Whooping Cough	2	—	—	—	1	—	—	—	—	2	6	—	—	—	—	11
Diseases of Heart	2	—	—	1	—	1	—	—	—	—	—	—	2	—	2	8
Intestinal Obstruction	1	1	1	—	—	1	—	—	—	—	—	—	—	1	—	5
Septicæmia	—	1	—	—	—	—	1	—	—	—	1	—	—	—	—	3
Suppresion of Urine	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Hæmorrhage	—	—	1	—	—	1	—	—	—	—	1	1	—	—	—	4
Diarrhœa	—	—	1	—	1	—	2	—	—	—	—	—	—	—	2	6
Dentition	—	—	—	1	—	1	—	1	—	—	—	—	—	—	—	3
Rickets	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	2
Starvation	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
Influenza	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	2
Suffocation	—	—	—	—	—	—	—	1	—	1	—	1	1	1	1	6
Other Causes	1	2	—	—	—	—	—	—	2	—	4	—	1	3	3	16
Totals	29	36	33	42	42	49	43	48	44	38	40	33	31	46	36	590

PREVALENCE AND CONTROL OF INFECTIOUS DISEASES.

Gibraltar is closely associated with Spain, and with Morocco by coastal shipping trade, and with all parts of the world by shipping continually arriving in the port, and in consequence, is liable to the importation of various forms of communicable diseases.

In this section in addition to the details of infectious diseases occurring during the year, a general review is given of the prevalence of notifiable infectious diseases in Gibraltar for some years past.

The principal features which affected the returns of the year are the large number of cases of diphtheria which have occurred and the absence of any local case of small pox.

The following infectious diseases are notifiable in Gibraltar in accordance with the provisions of "The Public Health Ordinance, 1907":—

Venereal Diseases.
Plague.
Pneumonia.
Small Pox.
Cholera.
Diphtheria.
Measles.
Membranous Croup.
Pulmonary Tuberculosis.
Cerebro-Spinal Fever.
Typhus Fever.
Relapsing Fever.
Ophthalmia Neonatorum.
Encephalitis Lethargica.
Influenzal Pneumonia.
Chicken Pox.
Yellow Fever.
Erysipelas.
Poliomyelitis.
Acute Dysentery.
Scarlet Fever.
Acute Epidemic Gastro-Enteritis.
Enteric Fever.
Puerperal Fever.
Undulant Fever.

Laboratory work connected with notifiable diseases is done free of charge at the City Council Public Health Laboratories for residents of Gibraltar and Gibraltarians resident in the neighbourhood.

GENERAL INCIDENCE.

The number of cases of infectious disease notified during the year, exclusive of Naval and Military cases, was 328 of which 111 were pneumonia, 25 chicken pox and 9 measles.

There were no cases of small pox.

Measles and scarlet fever were of a mild type and there were no deaths due to either of these diseases.

Thirteen deaths were attributed to one or other of the eight principal acute infectious diseases, twelve of these being due to diarrhœa and enteritis and one to diphtheria, equivalent to a zymotic death rate of ·8 per 1,000.

QUARTERLY INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASES. CIVIL POPULATION.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Influenzal Pneumonia	11	1	—	2	14	—
Pneumonia	42	32	17	20	111	27
Measles	2	1	5	1	9	—
Pulmonary Tuberculosis ...	10	10	4	8	32	22
Chicken Pox	5	14	3	3	25	—
Erysipelas	6	4	11	9	30	—
Venereal Diseases	3	3	3	1	10	4
Dysentery.....	1	1	—	1	3	1
Diphtheria	5	18	13	25	61	1
Undulant Fever	—	1	—	—	1	—
Scarlet Fever	—	5	4	4	13	—
Enteric Fever	—	2	1	2	5	—
Paratyphoid "B"	—	—	—	2	2	—
Puerperal Fever	—	1	—	—	1	—
Gastro Enteritis	—	3	2	3	8	8
Ophthalmia Neonatorum...	—	—	1	—	1	—
Rubella.....	—	—	—	1	1	—
Encephalitis Lethargica ...	—	—	—	1	1	1
Totals	85	96	64	83	328	64

QUARTERLY INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASES LANDED FROM THE BAY OR BROUGHT INTO THE TOWN FOR TREATMENT.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Pneumonia	2	1	2	2	7	4
Pulmonary Tuberculosis ...	2	—	1	1	4	2
Enteric Fever	1	2	2	3	8	1
Paratyphoid "B"	—	1	1	—	2	—
Small Pox	1	—	—	—	1	1
Diphtheria	—	1	—	1	2	—
Chicken Pox.....	—	1	—	—	1	—
Puerperal Fever	—	1	—	—	1	—
Dysentery	—	1	7	2	10	—
Typhus Fever	—	—	1	—	1	1
Undulant Fever	—	—	1	—	1	—
Venereal Diseases	—	—	—	1	1	—
Erysipelas.....	—	—	—	1	1	—
Totals	6	8	15	11	40	9

WEEKLY NOTIFICATION OF CASES OF INFECTIOUS DISEASES DURING 1927.

DISEASE.	JANUARY					FEBRUARY				MARCH				APRIL				MAY					JUNE				JULY				AUGUST					SEPTEMBER				OCTOBER					NOVEMBER				DECEMBER					TOTALS.	
	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	31	Local	Bay, &c.
Influenzal Pneumonia	1	3	5	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	14	..
Pneumonia	..	3	8	1	..	2	.. 2	3	1	4	5	7	2	7	3	5	1	1	4	3	1	3	2	2	2	1	.. 1	1	1	1	5	..	1	..	3 1	..	2 1	2	..	2	..	1	2	3	2	1	..	3	1	4 1	1	..	2 1	111	7
Measles	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	1	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	9	..
Tubercle of Lung	..	2	1	..	1	..	1 1	4	..	..	1	..	..	1 1	1	..	4	..	1	..	..	..	..	..	..	1	2	..	..	1	..	..	1	..	..	1	..	..	1 1	..	..	1	1	4	..	..	..	..	2	..	..	..	.. 1	32	4
Chicken Pox	..	1	..	..	..	..	2	1	..	..	..	1	..	..	..	1	1	7	1	1	..	..	.. 1	1	1	1	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	25	1
Erysipelas	..	..	1	..	1	..	..	1	1	..	..	1	..	2	1	..	..	1	..	..	..	..	..	..	1	..	1	1	..	1	..	1	..	1	3	1	..	2	..	..	1	2	1	1	..	..	.. 1	1	1	..	1	1	..	30	1
Venereal Diseases	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1 1	1	..	..	..	..	..	..	10	1
Dysentery	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	.. 1	..	..	..	.. 2	..	..	..	..	.. 4	..	..	.. 1	..	..	.. 1	..	1	..	..	.. 1	..	..	..	..	..	3	10
Diphtheria	..	..	..	..	..	..	1	1	1	..	..	1	1	..	..	1	..	3 1	3	..	1	..	1	..	3	3	3	1	3	1	3	1	..	..	..	..	..	2	..	3	1	.. 1	..	3	6	2	2	2	4	2	1	1	..	61	2
Enteric Fever	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	2	..	.. 1	..	..	..	..	..	..	..	.. 1	1 .. 1	..	..	..	..	..	..	..	.. 1	..	..	..	..	1 1	..	..	..	1 1	5	8
Paratyphoid "B"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	.. 1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	2	2
Small Pox	..	..	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Undulant Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	2	..	1	1	1	1	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	1	..	13	..
Puerperal Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	.. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Gastro-Enteritis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	8	..
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Ophthalmia Neonatorum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Rubella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..
Totals	1	10	18	1	2	3	4	11	4	5	6	10	3	10	5	10	6	13	10	7	3	6	6	5	7	9	6	7	5	7	9	8	2	3	7	3	2	9	1	7	8	7	5	17	8	4	4	7	9	6	5	4	3	328	40

Age and Sex incidence of notifiable Infectious Diseases amongst Civil Population during 1927.

Notifiable Disease.	NUMBER OF CASES NOTIFIED.																Districts.			Total cases removed to Hospital	
	At all Ages	Under 1.		1 and under 5.		5 and under 15.		15 and under 25.		25 and under 45.		45 and under 65.		65 and Over.							
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		North.	Central.	South.	Residents.	Non-Residents.
Influenzal Pneumonia	14	—	1	—	—	3	1	—	1	—	3	2	1	1	1		2	10	2	—	—
Measles	9	1	1	4	2	1	—	—	—	—	—	—	—	—	—		—	9	—	—	—
Pneumonia	111	5	10	21	15	19	10	3	2	7	2	7	5	3	2		3	100	8	7	7
Pulmonary Tuberculosis ...	32	—	—	—	—	—	1	6	4	3	3	11	1	3	—		—	29	3	7	4
Chicken Pox	25	—	—	8	1	7	3	2	1	2	1	—	—	—	—		—	17	8	—	1
Erysipelas	30	—	1	—	1	—	—	—	1	7	8	2	7	1	2		1	27	2	4	1
Venereal Diseases...	10	—	—	—	—	—	—	2	—	7	1	—	—	—	—		—	10	—	—	1
Dysentery	3	—	—	—	—	—	—	—	—	1	1	1	—	—	—		—	3	—	—	10
Diphtheria	61	—	—	15	7	13	15	—	4	—	5	1	1	—	—		—	56	5	19	2
Undulant Fever	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—		—	1	—	—	1
Scarlet Fever	13	—	—	1	2	—	6	—	—	2	2	—	—	—	—		—	10	3	6	—
Enteric Fever	5	—	—	—	—	—	—	1	1	1	1	1	—	—	—		—	5	—	4	8
Paratyphoid "B"	2	—	—	—	—	1	—	1	—	—	—	—	—	—	—		—	1	1	—	2
Puerperal Fever	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—		—	—	1	—	1
Gastro-Enteritis	8	3	2	3	—	—	—	—	—	—	—	—	—	—	—		—	7	1	—	—
Ophthalmia Neonatorum ...	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—		—	1	—	1	—
Rubella	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—		—	1	—	—	—
Encephalitis Lethargica ...	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—		—	1	—	—	—
Totals	328	10	15	52	28	44	37	15	14	30	28	26	16	8	5		6	288	34	48	38

Monthly notification of notifiable Infectious Diseases.

Months.	Cases occurring amongst the Civil Population.																																			
	Influenzal Pneumonia		Pneumonia		Pulmonary Tuberculosis		Chicken Pox		Erysipelas		Venereal Diseases		Diphtheria		Scarlet Fever		Measles		Dysentery		Undulant Fever		Enteric Fever		Paratyphoid "B"		Puerperal Fever		Gastro-Enteritis		Ophthalmia Neonatorum		Encephalitis Lethargica		Rubella	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January	9	—	12	5	4	4	1	—	2	—	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
February	2	—	6	2	5	3	3	—	2	—	—	—	3	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
March	—	—	24	2	1	4	1	—	2	—	1	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
April	—	—	12	1	6	1	9	—	3	—	3	1	4	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
May	1	—	13	4	1	—	2	—	—	—	—	—	5	—	2	—	1	—	1	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—
June	—	—	7	—	3	2	3	—	1	—	—	1	9	—	3	—	—	—	—	—	—	—	1	—	—	—	—	—	3	3	—	—	—	—	—	—
July	—	—	8	2	1	—	3	—	3	—	1	—	8	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	—
August	—	—	4	2	2	2	—	—	5	—	—	—	1	—	—	—	3	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
September	—	—	5	1	1	2	—	—	3	—	2	1	4	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
October	1	—	7	2	6	1	1	—	5	—	—	—	6	—	2	—	—	—	1	—	—	—	—	—	1	—	—	—	3	2	—	—	1	1	1	—
November	—	—	6	4	2	—	1	—	2	—	1	—	13	—	—	—	1	—	—	1	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—
December	1	—	7	2	—	3	1	—	2	—	—	—	6	—	1	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—
Totals	14		111	27	32	22	25		30		10	3	61	1	13		9		2	1	1		5		2		1		8	8	1		1	1	1	

Monthly notification of notifiable Infectious Diseases.

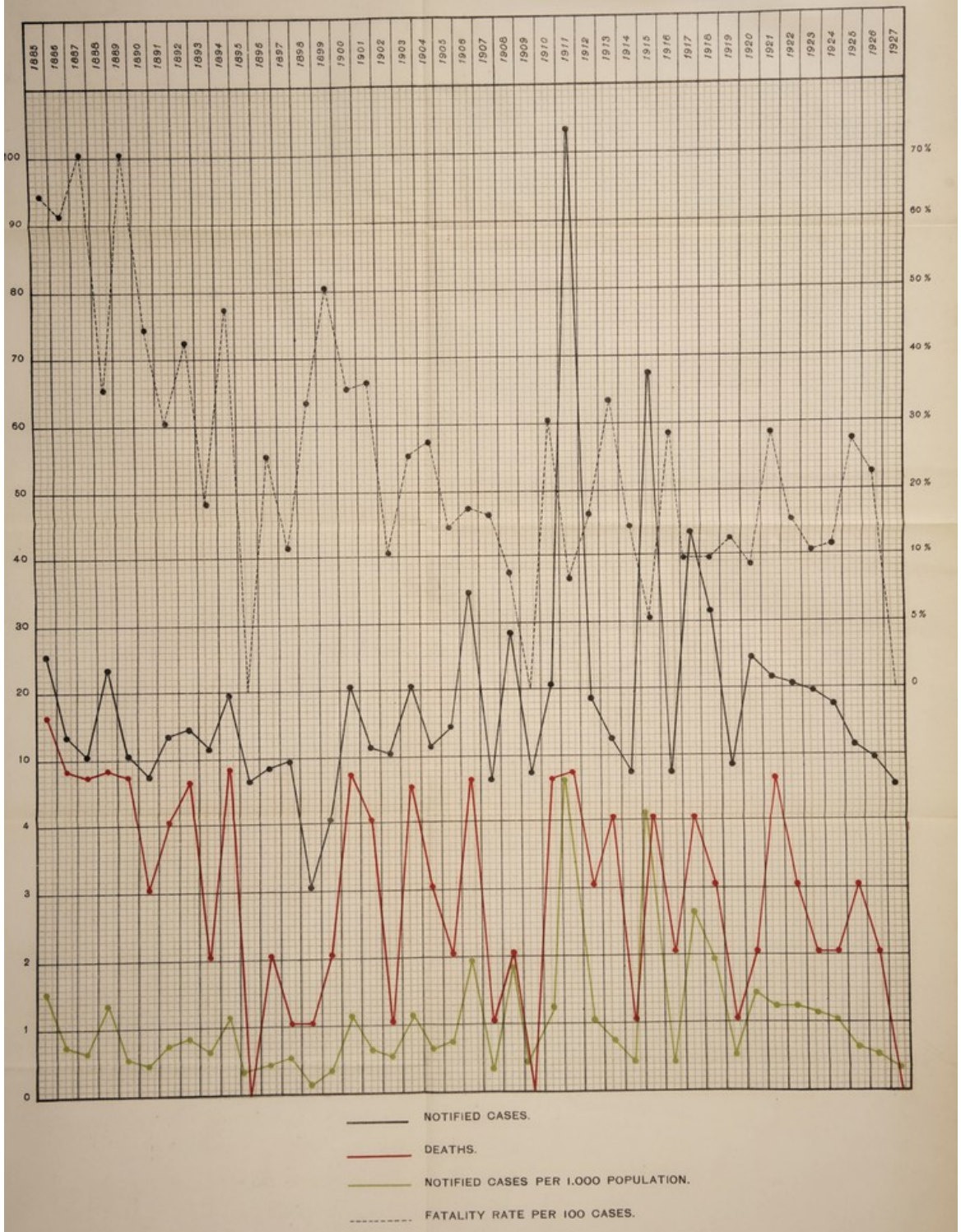
Months.	Cases landed from the Bay or brought into the Town for treatment.																													
	Pneumonia		Pulmonary Tuberculosis		Enteric Fever		Paratyphoid "B"		Small Pox		Diphtheria		Chicken Pox		Puerperal Fever		Dysentery		Typhus Fever		Undulant Fever		Venereal Diseases		Erysipelas	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January ...	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
February ...	2	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
March ...	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
April ...	—	—	—	—	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
May ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—
June ..	1	1	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
July ...	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
August ...	1	1	—	—	2	—	—	—	—	—	—	—	—	—	—	—	4	—	1	1	1	—	—	—	—	—
September ...	1	1	1	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
October ..	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
November ...	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1	—
December ...	2	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ...	7	4	4	2	8	1	2		1	1	2		1		1		10		1	1	1		1		1	

INCIDENCE OF INFECTIOUS DISEASES—GIBRALTAR 1927 AND PREVIOUS YEARS.

	Diphtheria		Enteric Fever		Small Pox		Tubercle of Lung		Scarlet Fever		Erysipelas		Diarrhœa and Enteritis		Chicken Pox		Measles		Pneumonia		Puerperal Fever		Dysentery		Rubella		Polio-myelitis		Cerebro-spinal Fever		Ophthalmia Neonatorum		Encephalitis Lethargica		Undulant Fever	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1887	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	861	83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1888	20	20	—	8	2	—	—	—	—	1	—	2	—	21	—	—	—	—	—	41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1889	152	31	—	5	63	6	—	—	—	—	—	1	—	12	—	—	—	—	—	30	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
1890	45	19	7	3	34	3	—	—	—	—	—	1	—	12	—	—	382	8	—	46	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
1891	12	7	13	4	1	—	—	36	5	—	—	—	—	29	—	—	178	3	—	46	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—
1892	18	9	14	6	5	1	—	40	6	—	5	1	—	21	15	—	—	—	—	31	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1893	12	8	11	2	9	1	—	23	7	—	8	1	—	21	21	—	37	—	—	30	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1894	21	9	19	8	83	8	—	39	6	—	2	—	—	16	33	—	173	5	—	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1895	8	2	6	—	29	—	—	34	4	—	1	—	—	21	31	—	3	—	—	23	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1896	29	13	8	2	60	3	—	34	4	—	2	1	—	18	27	—	5	—	—	29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1897	65	18	9	1	45	2	—	31	—	—	—	—	—	18	17	—	232	13	—	42	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1898	31	5	3	1	4	—	—	32	2	—	—	—	—	14	15	—	14	—	—	40	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—
1899	21	5	4	2	9	1	—	36	4	—	4	1	—	17	4	—	272	21	—	40	1	1	—	—	3	—	—	—	—	—	—	—	—	—	—	—
1900	8	3	20	7	94	5	—	41	4	—	4	2	—	20	23	—	142	4	—	54	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1901	8	3	11	4	11	—	—	32	1	—	2	1	—	17	16	—	9	—	—	39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1902	17	9	10	1	11	—	—	45	—	—	—	—	—	25	45	—	573	49	—	45	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1903	4	2	20	5	5	—	—	17	2	—	2	1	—	8	24	—	2	—	—	44	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1904	10	2	11	3	—	—	—	23	5	—	—	—	—	15	12	—	6	—	—	35	4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1905	9	2	14	2	44	4	—	24	5	—	7	2	—	13	10	—	613	35	—	30	1	1	—	—	—	—	—	—	—	—	—	—	—	—	11	1
1906	3	—	31	6	94	14	26	22	1	—	2	—	—	28	23	—	3	—	—	23	1	1	—	—	—	—	—	—	—	—	—	—	—	—	3	1
1907	6	3	6	1	11	—	25	14	—	—	9	1	—	11	30	—	11	—	—	26	3	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—
1908	5	1	23	2	—	—	32	23	10	—	18	2	—	11	32	—	212	5	—	21	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1909	6	—	7	—	3	—	43	25	8	—	21	1	—	13	18	—	155	1	—	22	1	1	—	—	—	—	—	—	—	—	—	—	—	—	4	—
1910	13	5	20	6	11	3	53	27	31	—	12	1	—	21	35	—	50	1	—	25	6	3	—	—	—	—	—	—	—	—	—	—	—	—	3	—
1911	9	4	103	7	11	2	127	32	1	—	25	1	—	16	38	—	18	3	—	24	1	1	—	—	—	—	—	—	—	—	—	—	—	—	4	—
1912	10	2	18	3	10	4	49	27	—	—	18	1	—	8	28	—	479	13	—	24	1	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—
1913	9	1	12	4	11	1	63	33	1	—	22	—	—	8	38	—	27	—	—	14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—
1914	7	1	7	1	4	1	43	36	1	—	6	—	—	14	61	—	13	—	—	16	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3	—
1915	6	2	67	4	15	1	38	29	8	—	5	1	—	9	16	—	12	—	—	21	—	—	8	1	1	—	—	—	1	1	—	—	—	—	2	1
1916	11	5	7	2	6	—	28	29	11	—	10	—	—	15	38	—	543	5	—	11	2	1	2	—	3	—	—	—	—	—	—	—	—	—	6	1
1917	4	—	43	4	—	—	29	31	—	—	5	—	—	8	16	—	11	—	—	25	3	1	—	—	1	—	—	—	—	—	—	—	—	—	1	—
1918	7	—	31	3	—	—	30	37	—	—	3	1	—	3	5	—	25	2	—	35	4	2	1	—	—	—	1	—	—	—	—	—	—	—	—	—
1919	3	—	8	1	3	—	32	39	1	—	3	—	—	21	27	—	—	—	6	32	—	—	—	—	2	—	—	—	—	—	—	—	—	—	1	—
1920	6	—	24	2	—	—	31	32	6	—	12	1	—	17	27	—	115	1	46	10	2	—	1	—	—	—	—	—	1	—	1	—	1	—	1	—
1921	7	1	21	6	1	—	34	30	13	—	16	—	—	19	34	—	388	6	28	21	2	2	1	—	—	—	—	—	1	1	—	—	1	1	4	—
1922	30	3	20	—	3	—	29	26	9	—	14	—	—	18	2	—	305	4	124	31	3	1	4	—	3	—	—	—	—	—	2	—	—	—	6	—
1923	21	2	19	2	—	—	48	22	218	5	30	—	13	13	74	—	31	2	110	18	5	—	5	—	30	—	—	—	2	—	2	—	—	—	12	1
1924	19	2	17	2	6	—	27	26	12	1	25	—	28	5	19	—	147	4	99	20	2	1	4	—	2	—	2	1	—	—	1	—	—	—	4	—
1925	31	—	11	3	—	—	28	30	5	—	19	—	16	7	70	—	18	—	122	19	1	—	10	—	5	—	—	—	—	—	1	—	—	—	4	—
1926	30	—	9	2	—	—	40	28	13	—	25	—	22	18	26	—	74	—	99	29	—	—	9	1	4	—	—	—	—	—	1	—	2	1	—	—
1927	61	1	5	—	—	—	32	22	13	—	30	—	8	8	25	—	9	—	111	27	1	—	3	1	1	—	—	—	—	—	1	—	1	1	1	—

ENTERIC FEVER IN GIBRALTAR DURING 1885-1927

Notified cases. — Deaths. — Notified cases per 1.000 population. — Fatality Rate per 100 cases.



ENTERIC FEVER.

This disease has now reached small dimensions and only five cases occurred during the year. These cases were proved by bacteriological and serological tests to have the disease.

None of the cases proved fatal.

Eight cases were also landed from the Bay or brought into the Town for treatment. One of these died.

The local cases were sporadic and occurred at various seasons of the year. Although each case was carefully enquired into, the sources of infection could not be traced.

In addition to these there were two cases of paratyphoid which were of a mild type and both recovered.

SEASONAL PREVALENCY OF ENTERIC FEVER IN GIBRALTAR—1927.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local Cases	—	—	—	—	1	1	—	1	—	—	1	1	5
Imported Cases	—	1	—	1	—	1	—	2	—	1	1	1	8

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & Over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	—	—	—	—	—	—	1	1	—	—	2	1	—	—	—	—	3	2
Deaths	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

The accompanying graph shows the notified cases, deaths, notified cases per 1,000 of population and fatality rate per 100 cases for 1927 and previous years.

DIPHTHERIA.

During 1927 sixty one cases of diphtheria were notified giving an attack rate of 3·7 per 1,000 of the population. Of these one case proved fatal.

Although the case rate shows an increase, the fatality rate remains low.

The accompanying graph shows the notified cases per 1,000 of population, death rate per 10,000 of the population, fatality rate per 100 cases, and the proportion of cases under 5 years of age during the period 1888-1927.

In 1896 treatment by antitoxin began to be used, but was not universally applied; in 1897 a more general use of anti-toxing serum gave very satisfactory results and the Sanitary Authorities made arrangements for a regular supply for issue to medical practitioners on payment.

Preventive Measures.

The most effectual method of preventing diphtheria in the past has been the removal of such cases to hospital, but in Gibraltar a large number of cases of this disease are treated in their homes where isolation is difficult to arrange and enforce. Of the 61 cases, 19 or 31% were treated in hospital.

The great reduction in the fatality of this disease is due to the administration of anti-toxin promptly and in adequate amount.

Dr. Graham Forbes states that "Diphtheria is a disease which has not yielded to public health measures. Its case mortality has been reduced and attempts to stamp it out are on the whole disappointing."

Now it is possible by the Schick test to distinguish between those who are and are not liable to attack and those susceptible may be immunized by subcutaneous injections of toxin antitoxin.

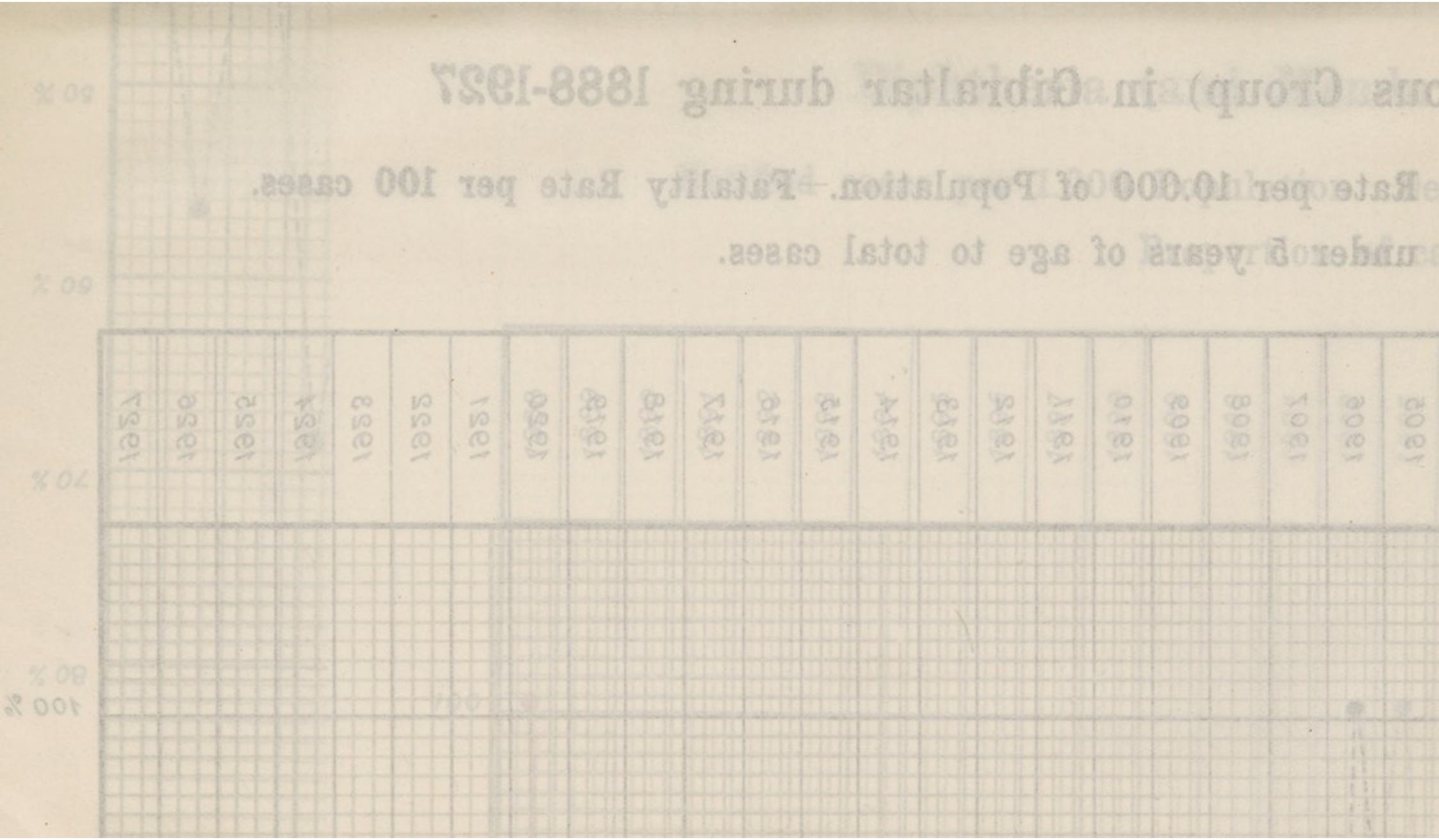
This method of immunization has now been used extensively both in America and England and has proved a most effective measure in the control of diphtheria.

Schick testing and immunization has been carried out in a few children in Gibraltar.

There is no doubt that if immunization were generally adopted it would lead to a great diminution of this disease, but the gradual appreciation by the public of the benefits of the procedure can alone make it become general.

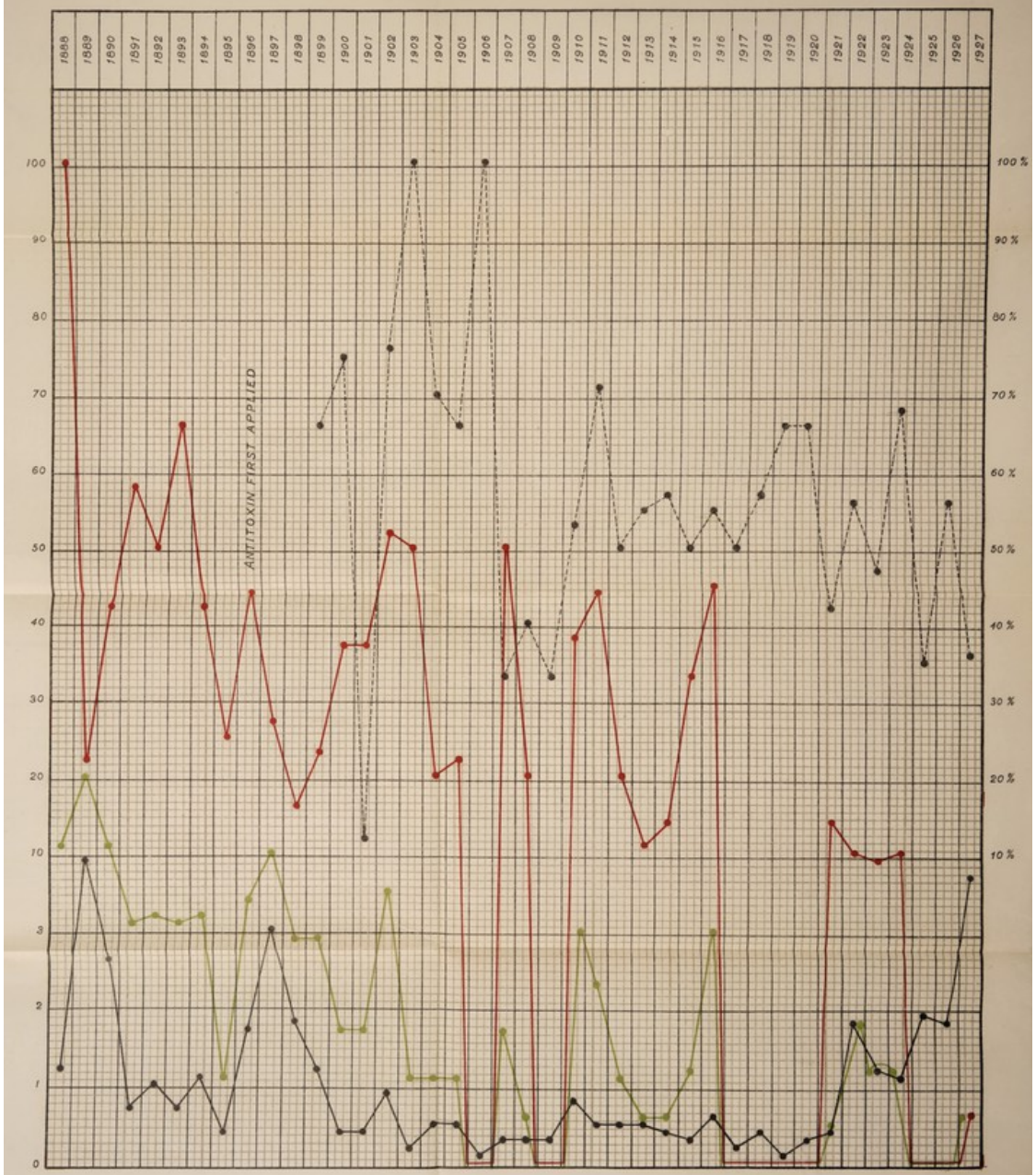
Diphtheria Antitoxin.

Supplies of Diphtheria Antitoxin are kept in the public Health Department, City Hall.



Diphtheria (and Membranous Croup) in Gibraltar during 1888-1927

Notified cases per 1.000 Population.—Death Rate per 10.000 of Population.—Fatality Rate per 100 cases.
Proportion of cases under 5 years of age to total cases.



NOTIFIED CASES PER 1.000 OF POPULATION.

DEATH RATE PER 10.000 OF POPULATION.

FATALITY RATE PER 100 CASES.

PROPORTION OF CASES UNDER 5 YEARS OF AGE TO TOTAL CASES.

The amount supplied to medical practitioners during the year was over 970,000 units.

Experience has shown that for the purposes of treatment it is seldom safe to rely on any dosage which is less than 8,000 units. Whatever the age of the patient may be, smaller doses are now never employed.

SWABS.

The result of the examination of Swabs is telephoned and written confirmation follows.

The incidence of the disease, as compared with previous years, is shown below:—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	4	—	—	·24
1918	7	—	—	·43
1919	3	—	—	·18
1920	6	—	—	·37
1921	7	1	·05	·42
1922	30	3	·18	1·8
1923	21	2	·12	1·2
1924	19	2	·12	1·1
1925	31	—	—	1·9
1926	30	—	—	1·8
1927	61	1	·06	3·7

SEASONAL PREVALENCY OF DIPHTHERIA IN GIBRALTAR DURING 1927.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov	Dec.	Total
Local Cases	—	3	2	4	5	9	8	1	4	6	13	6	61
Imported Cases...	—	—	—	1	—	--	—	—	—	1	—	—	2

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	8	2	7	5	12	13	1	2	—	1	—	3	—	5	1	1	29	32
Deaths	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—

MEASLES.

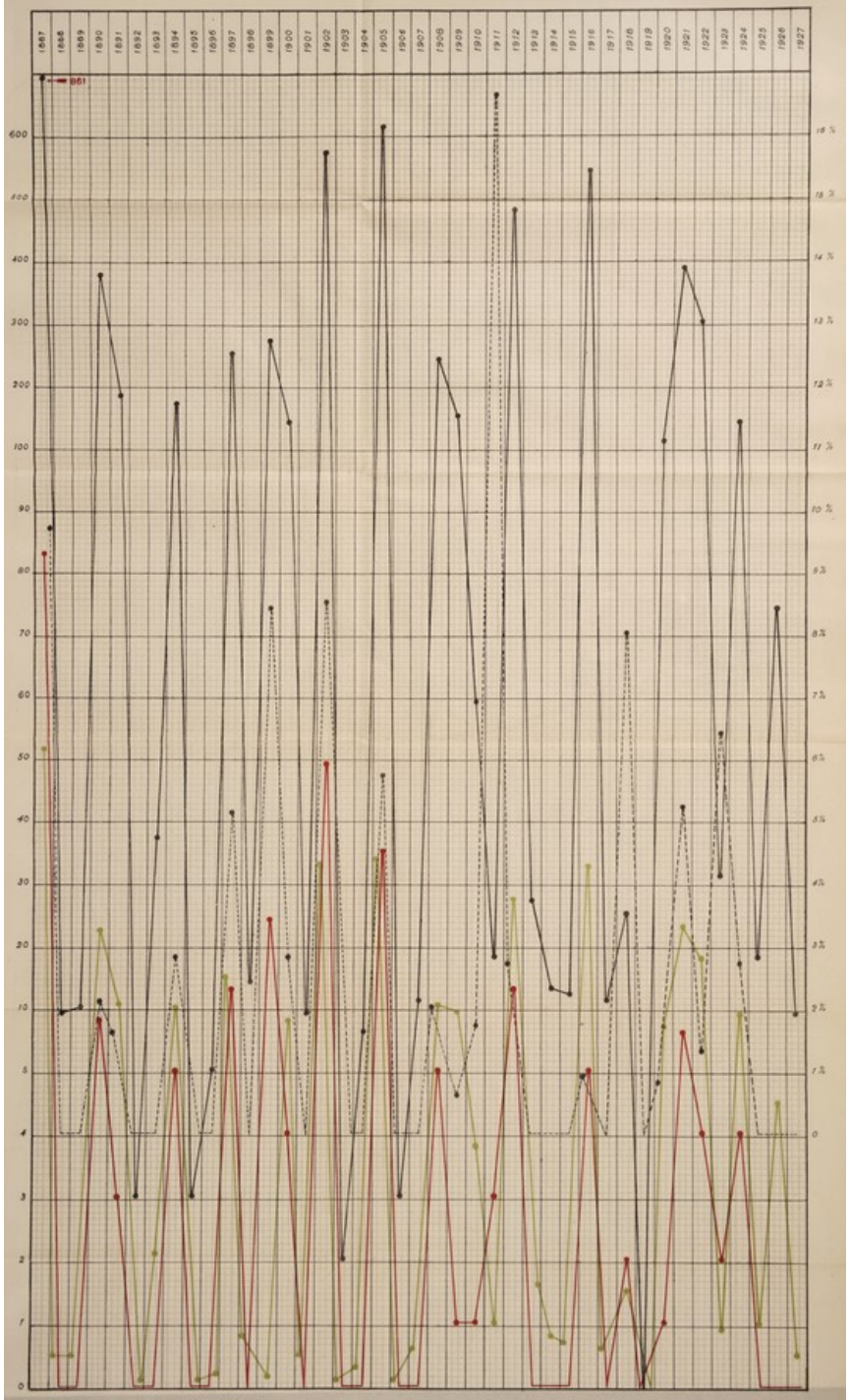
There were only nine cases of measles during the year.

The incidence of the disease as compared with previous years is shown below :—

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1917	11	—	—	·66
1918	25	2	·12	1·5
1919	73	—	—	4·5
1920	115	1	·06	7·1
1921	388	6	·35	23·1
1922	305	4	·24	18·8
1923	31	2	·12	1·9
1924	147	4	·24	9·0
1925	18	—	—	1·1
1926	74	—	—	4·5
1927	9	—	—	·55

MEASLES IN GIBRALTAR DURING 1887-1927

Notified cases. — Deaths. — Notified cases per 1.000 population. — Deaths per 100 cases.



TUBERCULOSIS DURING 1887-1897

Cases per 100,000 population. Deaths per 100 cases.

1861		
1862		
1863		
1864		
1865		
1866		
1867		
1868		
1869		
1870		
1871		
1872		
1873		
1874		
1875		
1876		
1877		
1878		
1879		
1880		
1881		
1882		
1883		
1884		
1885		
1886		
1887		

SEASONAL PREVALENCY OF MEASLES IN GIBRALTAR DURING 1927.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec	Total
Local Cases	1	1	—	—	1	—	—	3	2	—	1	—	9
Imported Cases ...	—	—	—	—	—	—	—	—	—	—	—	—	—

AGE AND SEX DISTRIBUTION.

Age	Under 1		1 to 2		2 to 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	5	2	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	6	3
Deaths	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—

The accompanying graph shows the notified cases, deaths, notified cases per 1,000 population, and deaths per 100 cases for 1927 and previous years.

PNEUMONIA.

There were 111 cases of this disease notified during the year, with 27 deaths.

A large proportion of the cases (80 out of the 111) occurred in persons in the age group below 15 years.

SEASONAL PREVALENCY OF PNEUMONIA IN GIBRALTAR DURING 1927.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug	Sept.	Oct	Nov.	Dec.	Total
Local cases ...	12	6	24	12	13	7	8	4	5	7	6	7	111
Imported cases	—	2	—	—	—	1	—	1	1	—	—	2	7

SCARLET FEVER.

The number of cases notified as suffering from scarlet fever during the year was 13, the same number as in the previous year.

There were no deaths.

The type was mild and complications rare.

Six cases were removed to hospital for treatment.

SEASONAL PREVALENCY OF SCARLET FEVER IN GIBRALTAR DURING 1927.

Month	Jan	Feb.	Mar	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Total
Local cases ...	—	—	—	—	2	3	4	—	—	3	—	1	13
Imported cases	—	—	—	—	—	—	—	—	—	—	—	—	—

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 & over		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	1	2	—	4	—	2	—	—	—	—	2	2	3	10
Deaths	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

UNDULANT FEVER.

There was one case of Undulant fever reported during the year. This disease is now very rare. It was formerly very prevalent and was made notifiable in 1905.

In 1907 the following measures were adopted for the prevention of the disease:—

(i) Regular and systematic examination of all goats in Gibraltar.

(ii) Quarantine of all goats brought into Gibraltar.

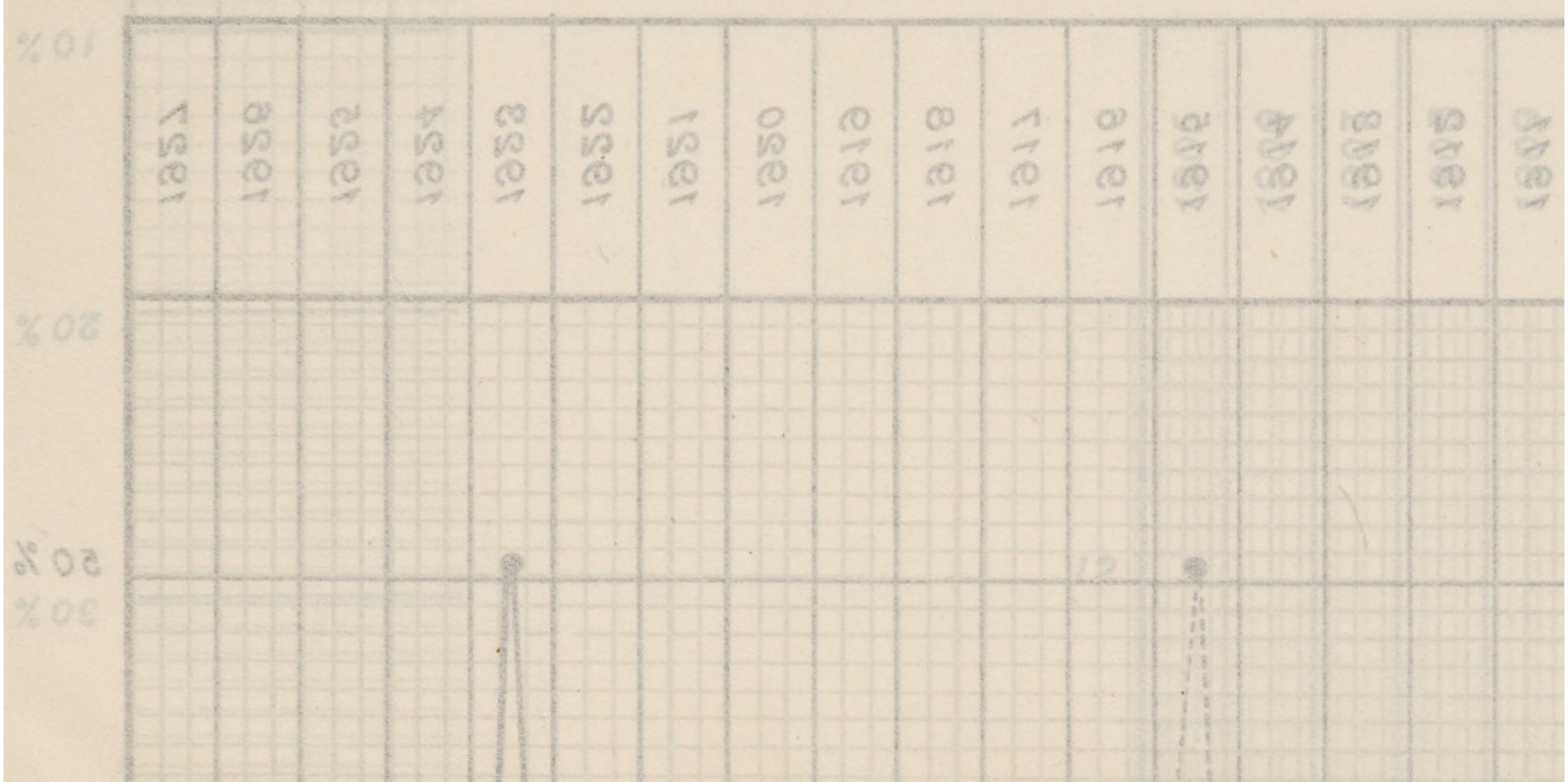
(iii) Boiling of all imported milk.

The accompanying graph shows the notified cases, deaths, notified cases per 1,000 of population, and deaths per 100 cases for 1927 and previous years.

SMALL POX.

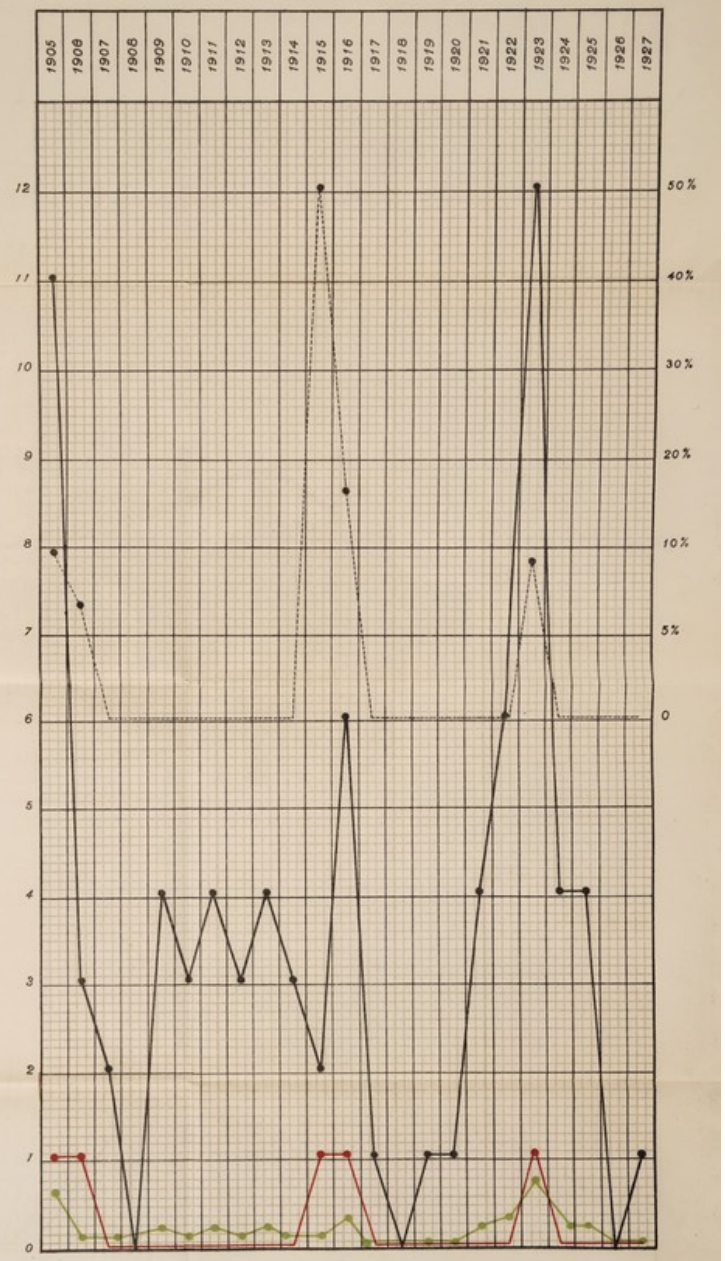
There was no local case of small pox during the year.

One case, which proved fatal, was landed from the Bay.


1927
1926
1925
1924
1923
1922
1921
1920
1919
1918
1917
1916
1915
1914
1913
1912
10%
20%
30%
40%

UNDULANT FEVER IN GIBRALTAR DURING 1905-1927

Notified cases. — Deaths. — Notified cases per 1.000 population. — Deaths per 100 cases.



NOTIFIED CASES.

DEATHS.

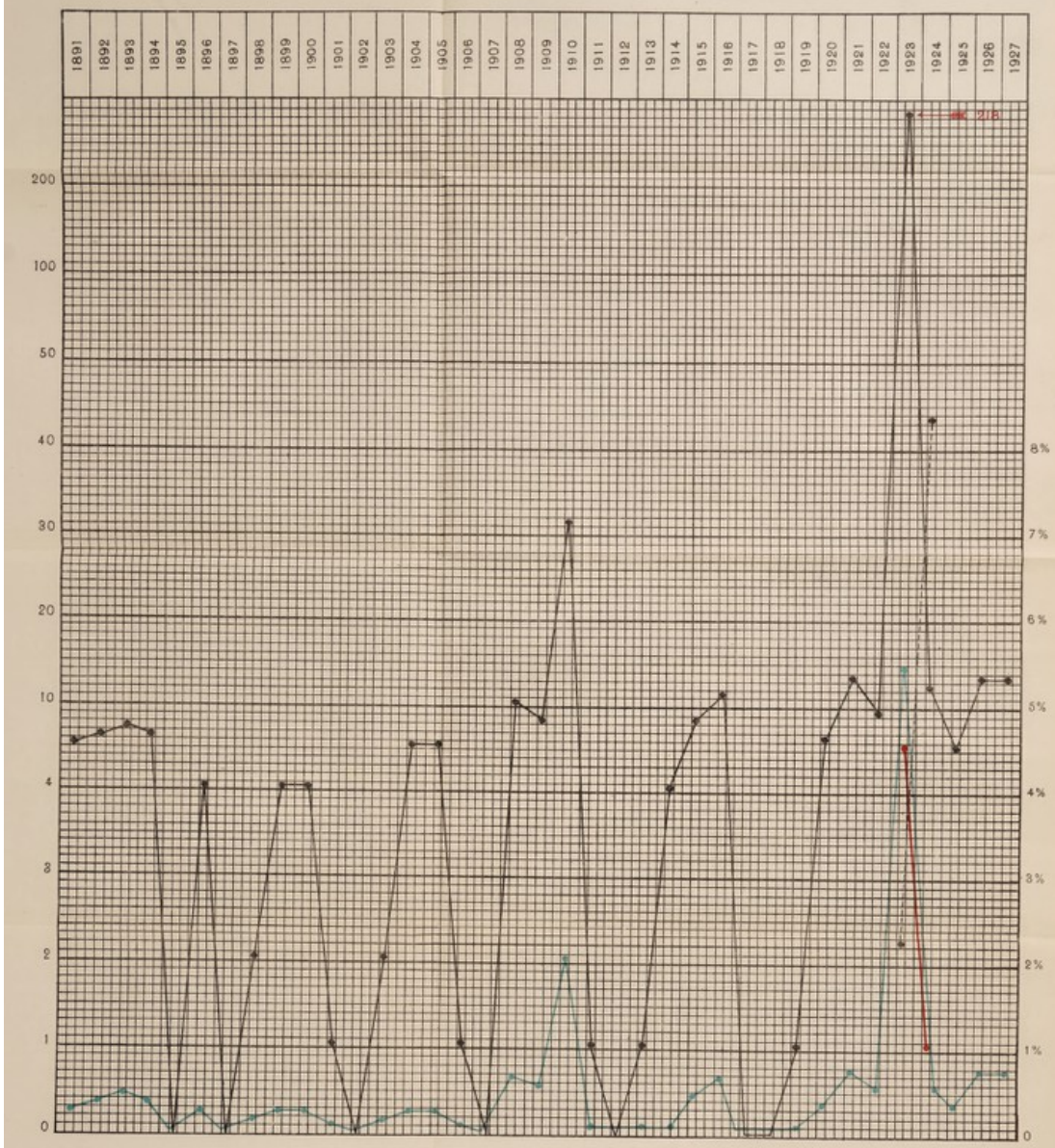
NOTIFIED CASES PER 1.000 POPULATION.

DEATHS PER 100 CASES.

NOTE.—Undulant Fever made notifiable 1905.

SCARLET FEVER IN GIBRALTAR DURING 1891-1927

NOTIFIED CASES - DEATHS - NOTIFIED CASES PER 1000 POPULATION - DEATHS PER 100 CASES



NOTIFIED CASES

DEATHS

NOTIFIED CASES PER 1000 POPULATION

DEATHS PER 100 CASES

NOTE.—An epidemic of Scarlet Fever in 1887 is recorded in Major Tulloch's Report.

DIAGRAM TRACING 1891-1927

DISEASES - PER 1000 POPULATION - DEATHS PER 100 CASES

1891	
1892	
1893	
1894	
1895	
1896	
1897	
1898	
1899	
1900	
1901	
1902	
1903	
1904	
1905	
1906	
1907	
1908	
1909	
1910	
1911	
1912	
1913	
1914	
1915	
1916	
1917	
1918	
1919	
1920	
1921	
1922	
1923	
1924	
1925	
1926	
1927	

Incidence of Small Pox in Gibraltar, 1888–1927, showing local cases, cases brought in for treatment and cases landed from the Bay.

Year.	Local Cases.	British Subjects residing at La Linea who came in for treatment.	Landed from Bay.	Total.	Deaths (local cases).	Deaths (Bay cases).
1888	2	1	5	8	—	1
1889	63	—	—	63	6	—
1890	34	2	6	42	3	1
1891	1	—	9	10	—	1
1892	5	—	6	11	1	1
1893	9	—	1	10	1	1
1894	83	2	9	94	8	—
1895	29	—	3	32	—	1
1896	60	1	14	75	3	1
1897	45	—	3	48	2	1
1898	4	—	2	6	—	1
1899	9	1	4	14	1	—
1900	94	—	8	102	5	1
1901	11	—	3	14	—	—
1902	11	—	6	17	—	—
1903	5	—	2	7	—	1
1904	—	—	1	1	—	—
1905	44	—	1	45	4	—
1906	94	—	22	116	14	—
1907	11	1	3	15	—	—
1908	—	—	2	2	—	—
1909	3	—	4	7	—	1
1910	11	3	—	14	3	—
1911	11	—	5	16	2	—
1912	10	3	—	13	4	—
1913	11	—	2	13	1	—
1914	4	—	1	5	1	—
1915	15	6	1	22	1	—
1916	6	1	3	10	—	1
1917	—	—	—	—	—	—
1918	—	—	1	1	—	—
1919	3	—	16	19	—	4
1920	—	—	2	2	—	1
1921	1	—	1	2	—	1
1922	3	—	—	3	—	—
1923	—	—	—	—	—	—
1924	6	14	3	23	—	1
1925	—	—	3	3	—	—
1926	—	—	—	—	—	—
1927	—	—	1	1	—	1

The accompanying graph shows the number of cases notified, deaths, notified cases per 1,000 population, and fatality rate per 100 cases for 1927 and previous years.

VACCINATION.

The Vaccination Ordinance (which makes vaccination compulsory within three months of birth) was passed in Gibraltar in 1887, and the Revaccination Ordinance, making the revaccination of children who had attained the age of 12 years compulsory, was passed in 1907.

These are now combined in "The Vaccination Ordinance, 1887."

It is of interest to note that the first record of vaccination in Gibraltar was in 1800 when Dr. Joseph H. Marshall and Dr. Walker vaccinated 40 men and 23 children of the garrison then in command of General O'Hara.

During the year, 656 vaccinations were performed, 362 of which were in accordance with the provisions of "The Vaccination Ordinance, 1887," on children who had attained the age of 12 years.

The Public Vaccinator has performed 202 vaccinations and 333 re-vaccinations.

The following statistics show the state of vaccination for births during the year 1927:—

Number of Infants registered in Gibraltar.	Died before vaccination.	Left Gibraltar.	Number requiring to be vaccinated.	Certified as successfully vaccinated.	Certified as insusceptible to vaccination.	Vaccination postponed.	Number remaining.	Vaccination certificates received for children not registered in Gibraltar.
363	15	15	333	294	—	12	27*	8

*Had not attained the age of three months.

OTHER NOTIFIABLE DISEASES.

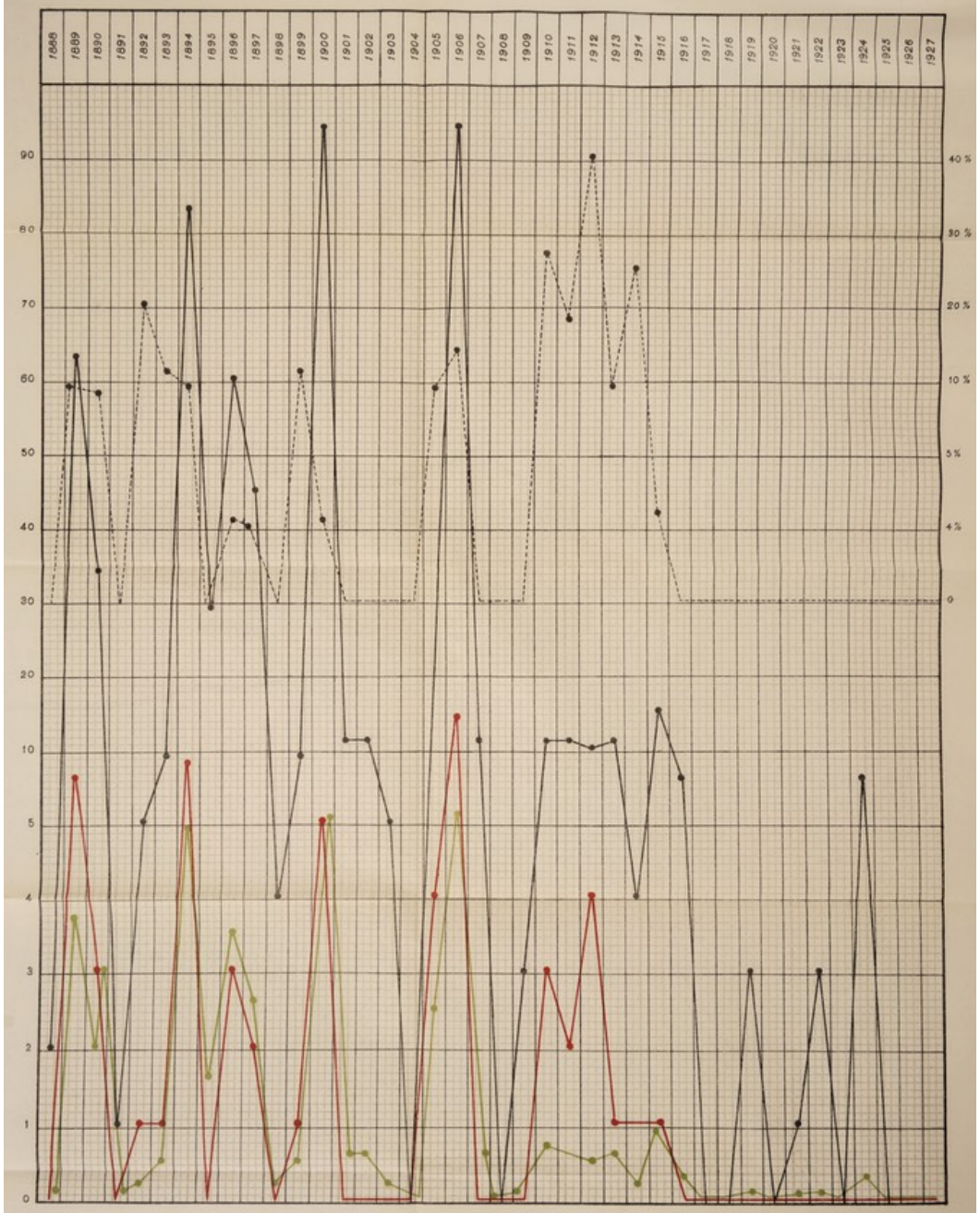
The following other notifiable diseases were notified during the year:—

Venereal Diseases	10 cases
Rubella	1 ,,
Dysentery	3 ,,
Erysipelas	30 ,,
Ophthalmia Neonatorum	1 ,,

1888-1927
Establishment of Rate per 100 cases.
1921
1922
1923
1924
1925
1926
1927
1909
1908
1907
1906
1905
1904
1903
1902
1901
1900
1899
1898
1897
1896
1895
1894
1893
1892
1891
1890
1889
1888
0 %
10 %
20 %
40 %

SMALL-POX IN GIBRALTAR DURING 1888-1927

Notified cases. — Deaths. — Notified cases per 1.000 population. — Fatality Rate per 100 cases.



NOTIFIED CASES.

DEATHS.

NOTIFIED CASES PER 1.000 POPULATION.

FATALITY RATE PER 100 CASES.

Gastro Enteritis	8 cases
Influenzal Pneumonia	14 „
Encephalitis Lethargica	1 „
Chicken Pox	25 „
Undulant Fever	1 „
Puerperal Fever	1 „

VENEREAL DISEASE.

Venereal work is done in the City Council's Public Health Laboratories free of charge for residents of Gibraltar and for Gibraltarians resident in the neighbourhood.

Every facility is provided at the Colonial Hospital for both out and in-patient treatment of venereal disease, male and female.

Although venereal disease is included in the list of notifiable infectious diseases, compulsory notification does not apply where a person suffering from this disease is under specific and adequate treatment and is unlikely to spread the disease.

*The number treated in the Male Venereal Ward was 78 of whom 20 were mercantile seamen. The numbers in 1926 were 68 and 24 respectively. The number of intravenous injections was 351.

HOSPITAL ACCOMMODATION FOR INFECTIOUS DISEASES.

SEGREGATION BLOCK—Colonial Hospital.

Ground Floor	—Lower Ward	5 beds.
	Single Room	2 „
	Single Room	1 „
First Floor	—Upper Ward	5 „
	Single Room	2 „
	Single Room	1 „
	Total	16 beds.

*In the Segregation Wards 78 cases were treated, as compared with 50 in 1926 and 38 in 1925. The increase has been mainly due to the prevalence of diphtheria, and the work has been a severe strain. One of the Assistant Surgeons caught Scarlatina, one of the staff nurses Enteric Fever, and two of them Diphtheria.

*Annual Medical Report, Colonial Hospital.

*ISOLATION HOSPITAL—North Front.

Male Block...	...No. 1 Ward... ...	8 beds.
	No. 2 Ward... ...	4 ,,
Female Block	...No. 1 Ward... ...	4 ,,
	No. 2 Ward... ...	2 ,,
Observation Ward		2 ,,
Reserve Block	...No. 1 Ward... ...	6 ,,
	No. 2 Ward... ...	2 ,,
Naval & Military Block...	No. 1 Ward... ...	6 ,,
	No. 2 Ward... ...	2 ,,
	Total	36 beds.

The buildings are one-storied. Quarters are provided for nurses and attendants. There is a discharge Block, a laundry and a steam disinfecting apparatus. Electric light is fitted throughout, and drinking and brackish water laid on from the Town mains.

The Isolation Hospital was open under the care of Dr. Durante for 3 days for the treatment of one case of small-pox.

One case of typhus fever, landed from a ship, developed while the patient was in a general ward of the Hospital, and proved fatal before it was possible to move him to the Isolation Hospital The strenuous measures that were adopted were successful in preventing any spread.

*Annual Medical Report, Colonial Hospital.

PULMONARY TUBERCULOSIS.

There is a slight decline in the incidence of Tuberculosis as compared with the previous year. The death rate for 1927 is 1·3 per 1,000 of the population or approximately double that of England and Wales, and it has only twice fallen below 1 per 1,000 in the 37 years for which records exist. The majority of the notified cases are advanced ones and are nearly always a source of infection to other persons in the same house or family.

The prolonged isolation of advanced cases of tubercle, in which the sputum is positive is a matter of great importance in controlling this disease in Gibraltar. Housing conditions are such that the effective isolation at home of these cases is a matter of impossibility. There is a limited amount of accommodation set apart for cases of Tuberculosis at the Gibraltar Home for Sick and Destitute, but patients are often unwilling to leave their homes, and do not appear to realize that they may be a source of infection to others.

NUMBER OF NOTIFICATIONS AND DEATHS.

During the year there were 32 notifications of Pulmonary Tuberculosis, a decrease of 8 on the number notified during the previous year.

During the year there has been an average of 9 cases of Pulmonary Tuberculosis in the "Home," where special arrangements are provided for them, but as a rule only cases in the late stages of the disease avail themselves of the facilities afforded.

The Pulmonary Tuberculosis death rate for Gibraltar is 1·3 per 1,000 living and that for England and Wales was 0·79.

The incidence of the disease, as compared with previous years, is shown in the following table.

Year.	Cases notified.	Deaths.	Death rate per 1,000 of Population.	Attack rate per 1,000 of Population.
1891	Not notifiable.	36	1·8	—
1892	do.	40	2·1	—
1893	do.	26	1·36	—
1894	do.	39	2·04	—
1895	do.	34	1·78	—
1896	do.	34	1·78	—
1897	do.	31	1·62	—
1898	do.	32	1·67	—
1899	do.	36	1·8	—
1900	do.	41	2·14	—
1901	do.	32	1·57	—
1902	do.	45	2·21	—
1903	do.	17	0·83	—
1904	do.	23	1·1	—
1905	do.	24	1·14	—
1906	26	22	1·04	1·4
1907	25	14	0·66	1·4
1908	32	26	1·42	2·05
1909	43	25	1·36	2·7
1910	53	27	1·48	3·4
1911	127	32	1·67	7·4
1912	99	27	1·41	5·8
1913	63	33	1·78	3·9
1914	43	36	1·99	2·6
1915	38	29	1·61	2·3
1916	28	29	1·56	1·6
1917	29	31	1·67	1·7
1918	30	37	2·05	2·4
1919	32	39	2·19	1·9
1920	31	32	1·80	1·9
1921	34	30	1·61	2·0
1922	29	26	1·50	1·7
1923	48	22	1·26	2·9
1924	27	26	1·5	1·6
1925	28	30	1·7	1·7
1926	40	28	1·6	2·4
1927	32	22	1·3	1·9

The total number of deaths from Pulmonary Tuberculosis was 22 as compared with 28 for the previous year.

SEASONAL PREVALENCY OF PULMONARY TUBERCULOSIS IN GIBRALTAR DURING 1927.

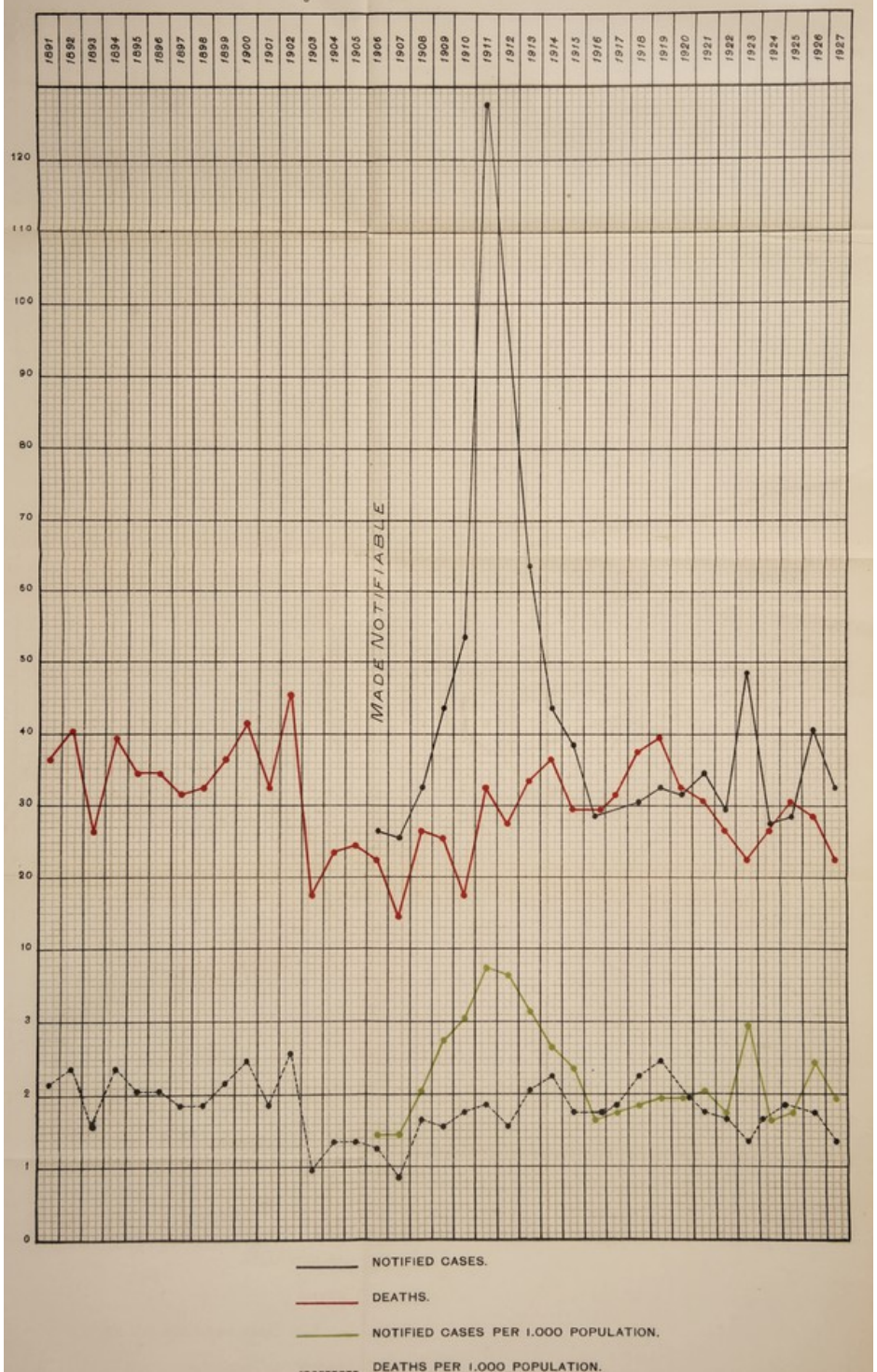
Month	Jan.	Feb	Mar	Apl.	May	June	July	Aug	Sept.	Oct	Nov.	Dec.	Total
Local Cases	4	5	1	6	1	3	1	2	1	6	2	—	32
Imported Cases ...	—	1	1	—	—	—	—	—	1	—	—	1	4

AGE AND SEX DISTRIBUTION.

Age	Under 15		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 to 44		45 to 49		50 to 55		56 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	1	1	5	2	1	—	1	3	2	1	—	—	2	—	4	—	8	1	24	8
Deaths	3	—	—	2	1	1	2	—	—	—	3	1	—	2	1	—	1	—	5	—	16	6

Pulmonary Tuberculosis in Gibraltar during 1891-1927

Notified cases. — Deaths. — Notified cases per 1.000 population. — Deaths per 1.000 population.



Mortalitätsstatistik Gibraltar während 1891-1897

Gesamtsterbeziffer 1.000 Bevölkerungsbewegung—Sterbefälle auf 1.000 Bevölkerung.

BACTERIOLOGICAL WORK.

The number of specimens of sputum examined for Tubercle bacilli during the year has been one hundred and ninety-two of which thirty-five were positive and one hundred and fifty-seven were negative.

REPORT OF THE DESTITUTE SICK AND TUBERCULOSIS SCHEME FOR 1927.

The Destitute Sick and Tuberculosis Scheme is administered by the Council. There is a Standing Poor Relief Committee which met 19 times during the year. The arrangements for its administration have previously been given in detail in the Annual Report of 1924, the principal features being close co-operation with other charitable organisations, and the investigation of each case individually.

The total expenditure during the past year has been £3,739 11 9.

OUTDOOR RELIEF.

The number of persons in receipt of outdoor relief during the year under review is as follows:—

Month.	*No. of Persons.*
January	70
February	72
March	68
April	65
May	65
June	63
July	63
August	64
September	68
October	69
November	67
December	67

The total amount of relief given during the year was:—

Meat	6,389 lbs.
Milk (Condensed)	3,841 tins
Milk (Fresh)	1,895 pints

in addition to small minor grants to families.

The total cost of outdoor relief during the year has been £718 1 6.

THE GIBRALTAR HOME FOR SICK AND AGED.

Considerable improvements have been carried out at the "Home" during the past year. A complete hot water system has been installed, the provision of which greatly facilitates the bathing of the inmates.

Radiators have also been provided in some of the rooms which add appreciably to the comfort of the aged inmates in the winter months.

Considerable improvements have been effected in the kitchen which is now an excellent one.

The piece of ground on the East side of the Home, taken over in 1925 has undergone continuous improvements and now forms an excellent garden for the inmates. The planting of trees has been a principal feature in the development of this terraced garden, so that in a few years excellent shade should be provided.

FEEDING.

The cost of feeding, though somewhat higher than the previous year, remains at the very moderate figure of 11½*d.* per head per day.

The inmates are well though economically fed and are very satisfied with the rations they receive.

Rations are frequently inspected and the dietary varied as much as possible.

EQUIPMENT.

The Home is now well equipped, a few necessary articles being added from time to time.

DESTITUTE SICK AND TUBERCULOSIS SCHEME.

SUMMARY OF INDOOR AND OUTDOOR EXPENDITURE FOR THE YEAR 1927.

Indoor Relief.

	£ s. d.	£ s. d.
Provisions	1145 13 5½	
*Miscellaneous	371 3 1½	
Maintenance of Buildings	250 16 4	
Rent	373 4 0	
Light	25 1 4	
Water	71 10 8	
Telephone	10 0 0	
Printing	6 15 4	
Insurance	1 10 6	
Funeral Expenses	2 5 0	
Heating Apparatus	146 10 6	
		£2404 10 3

Days of Subsistence	23,727
Average No. of inmates	65
Cost of feeding per head per day ...	11½*d.*
" " " year ...	£17 12 6
Total all-in cost per head per day ...	2/0¼
" " " year ...	£36 19 8¼
Calories per head per day	2,830

Outdoor Relief.

	£ s. d.	
Meat 6,389 lbs.	173 0 6	
Milk (Fresh) 1,895 pints	27 12 5	
Milk (Condensed) 3,841 tins	136 0 0	
Grants to Families	371 13 7	
Funeral Expenses	4 10 0	
Printing	5 5 0	
		£718 1 6
†Salaries		617 0 0
Total Expenditure on Indoor and Outdoor Relief for 1927		£3739 11 9

*Includes Washing and Cleansing, Coal and Charcoal, Boot repairs, Utensils, Brandy, Ice, Medicines, Tobacco, &c.

†Includes portion of salary of S. Inspector employed part time on this work.

LOCAL CHARITIES.

Gibraltar Charities consist of :—

The Destitute Sick and Tuberculosis Scheme (see detailed report).

Society of St. Vincent de Paul—

(*a*) St. Mary the Crowned.

(*b*) St. Bernard.

(*c*) St. Joseph.

Orphanage of St. John of God (Benso's Home).

Magistrates' Poor Fund.

Gibraltar Anglican Cathedral Poor Relief Fund.

Gavino's Asylum.

British Protestant Poor Fund.

Gibraltar Needlework Guild.

Hebrew Charities.

Coal Merchants' Charitable Fund.

Gibraltar Poor Day.

Gibraltar Soup Kitchen.

Little Sisters of the Poor.

A large amount of the charitable work in Gibraltar is organised and administered without any charge to the public by voluntary workers.

During the year nearly £15,000 has been expended on charitable work in Gibraltar, £3,500 being contributed by the Government (Destitute Sick and Tuberculosis Scheme), the remainder being derived from collections, subscriptions, donations, &c., and income from investments.

This charitable work has a marked influence on Public Health, and has generally improved the feeding of the children of the poor.

The charitable institutions which have accommodation for inmates are the following :—

Almshouses and Poorhouses	Number of Inmates	How supported.	Remarks.
Gavino's Asylum.	40	From funds bequeathed by the late J. Gavino, W. Eschauzier and others.	Men 10; Women 15; Girls 15 Number of beds—Men .. ...10 Women...30 Girls .....40 Asylum for the maintenance of aged paupers of both sexes and orphan girls. Also for incurables.
Asylum of "San Juan de Dios."	30	From funds bequeathed by the late Joseph Benso and voluntary contributions.	Number of beds—30. Asylum for the maintenance of orphan boys and the teaching of crafts.
Little Sisters of the Poor.	71	By voluntary contributions.	Men 30; Women 41. Number of beds—71 Asylum for the maintenance of aged paupers of both sexes.
Hebrew Asylum (Beriro's Home).	6	By grants from the Hebrew Poor Fund and by legacies, donations and subscriptions.	Men 3; Women 3. Number of Beds—Men..... 8 Women... 4
The Gibraltar Home for Sick and Aged.	68	Annual grant from the Colonial Government.	Men 48; Women 20. Number of beds—Men... .. 48 Women... 27 (Special beds reserved for cases of Tuberculosis).

STATE OF EMPLOYMENT.

There was a considerable amount of unemployment during the earlier part of 1927 and a variable amount during the year. A large number of men were working intermittently, many of them on short time.

RELIEF WORKS.

The relief works sanctioned in 1926 were continued for the first three months of the year, the work undertaken being the removal of Waterport arches, and the cleaning of Poca Roca ravine.

The Colonial Government grant for this purpose was £2,000 and the amount actually expended was £2,141 3 11.

EMPLOYMENT OF LOCAL LABOUR BY THE COUNCIL.

In July 1920 out of a total of 417 workmen employed, 317 were aliens, whereas in February, 1927, the aliens numbered only 79 out of 425 workmen, and the latest figures show an even smaller number of aliens in the employ of the Council.

SERA, VACCINES, &c., KEPT IN STOCK.

Anti-Meningococcus Serum.
Anti-Streptococcus Serum.
Anti-Anthrax Serum.
Anti-Dysentery Serum.
Anti-Plague Serum.
Plague Prophylactic.
Cholera Vaccine.
Diphtheria Antitoxin.
Tetanus Antitoxin.
Tuberculin.
Insulin.
Calf Lymph.
Influenza Vaccine.
Diphtheria Prophylactic.
Scarlet Fever Streptococcus Antitoxin.

INVESTIGATION AND PREVENTION OF OTHER DISEASES.

MOSQUITOES.

The campaign has been continued on the now well-established lines fully described in the Report of 1925.

Difficulties, though still encountered, are less, and the public are now taking a great interest in the work, and appreciating the results. Their co-operation, so essential to success, is being obtained more and more each year.

The most difficult period in mosquito control is the start of a campaign; when the staff have been trained, local conditions investigated, and the public educated, then it is a comparatively simple matter to continue. With domestic mosquitoes, however, the most thorough attention to detail is essential in order to achieve success.

DIVIDED CONTROL.—In spite of divided responsibility the closest co-operation has been continued throughout the year with the Colonial, Naval and Military Authorities, thus maintaining the efficiency of the campaign at a high level.

RESULTS OF THE CAMPAIGN.—The number of breeding places found during the year was considerably less than for the previous year and clearly indicates the results of propaganda work.

The inspection of water tanks in the Colony has been repeated, so that defects may be discovered and immediately remedied.

The number of tanks inspected during the season were :—

	Inspected.	Found defective.
Fresh water	370	56
Brackish water	298	50
Underground tanks ...	625	—
Wells	80	—

The number of brackish water tanks in Gibraltar have decreased enormously, in 1890 there were 1,383, at present only about 300 remain, and it is hoped that, before long, the remainder may be abolished and thus a large number of potential breeding places, most difficult to control, will have disappeared.

Weekly visits during the summer to all premises, and inspection of tanks and water vessels together with regular disinfection of gullies are found to be essential here, as in other places where successful Culicine Mosquito Control has been instituted, and conditions are such in Gibraltar that any relaxation of these measures will result in mosquitoes becoming as prevalent here as formerly, and the expenditure and effort of past years being nullified.

It is interesting to note that advccates of Mosquito Control in Gibraltar in the past have always drawn attention to the presence of *Stegomyia fasciata*, the yellow fever carrier and pointed out the danger from this mosquito if uncontrolled.

Yellow Fever is observed to be travelling up the West Coast of Africa and many cases have occurred recently in French Senegal. There is direct shipping between Dakar and Gibraltar.

It is interesting to note the remarks of Sir James K. Fowler, the Hon. Secretary of the Trustees of the Beit Memorial Fellowship for Medical Research, in their latest Annual Report, regarding the work of Dr. Hindle on yellow fever. The primary object of the Trust is "The advancement by research of medicine and of the sciences allied therewith":—

"The extreme subdivision of these sciences has now made it very difficult to present in a manner intelligible to those not engaged in such studies a summary of the advances in knowledge which during the past year have been made by the Fellows, owing to the wide field covered by their researches.

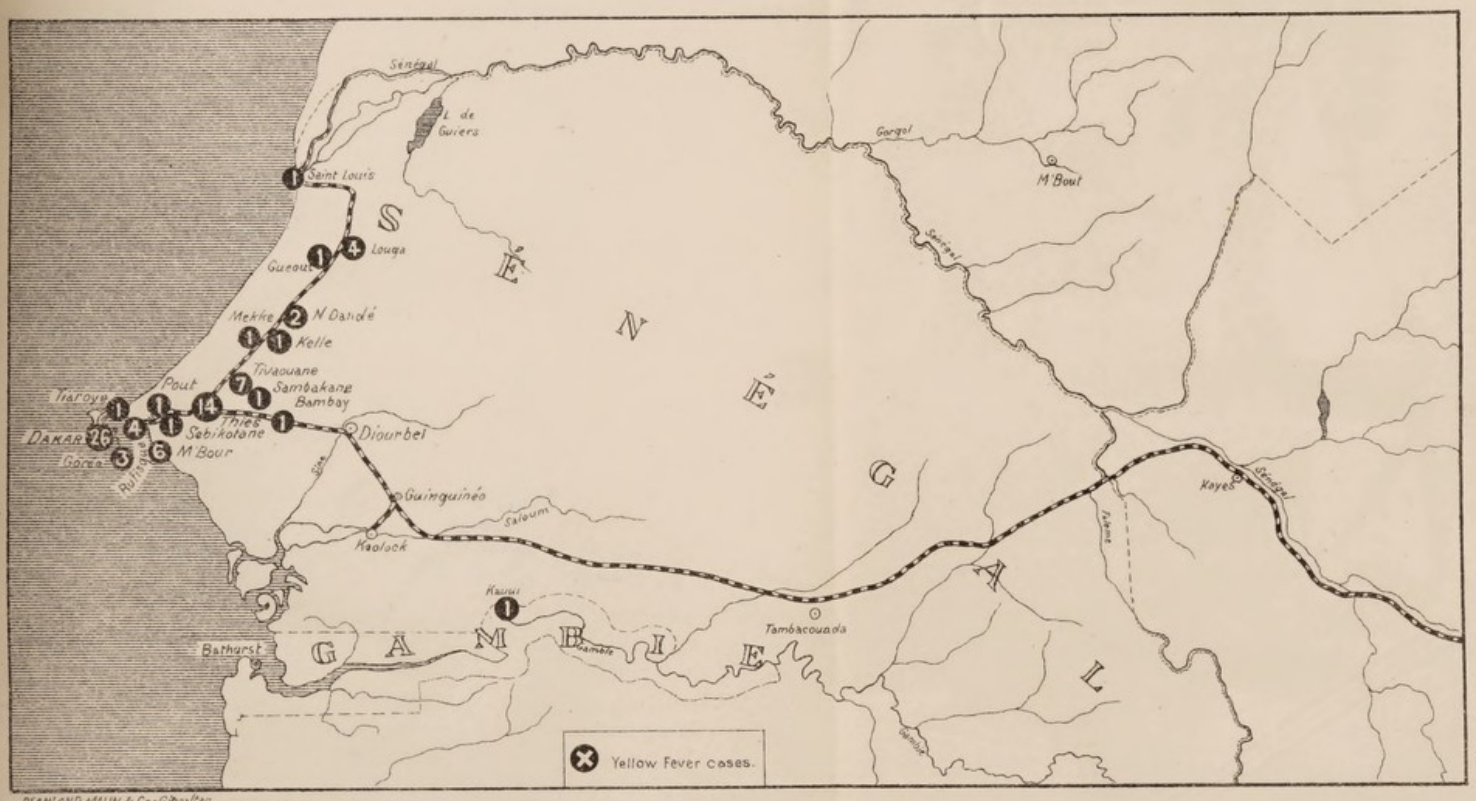
To this general statement, however, one exception may be made, that of Dr. Hindle on yellow fever. The deeply lamented deaths of Adrian Stokes, Hydeyo Noguchi, and William Alexander Young, all men of high scientific distinction, while engaged in the study of yellow fever on the West Coast of Africa, have lately drawn unusual attention to that disease.

In times long past yellow fever was nct limited to tropical and subtropical countries. Europe, and especially Spain, knew it, and this country, through its garrisons at Gibraltar and in Africa and the West Indies, knew it only too well. One can readily realize the concern with which, in 1804, the news must have been received at home that as the result of an epidemic of yellow fever in Gibraltar the deaths among the garrison and civil population in the short period of four months had been as follows:—

Officers	54
Soldiers	864
Wives and children of soldiers ...	164
Inhabitants	4,864
Total	5,946

The total civilian population was probably about 9,000. After the epidemic "only 28 adults could be discovered who had resided within the walls who had escaped the malady." Having regard to the health conditions prevailing in Gibraltar to-day, it would be difficult to find a better illustration of what research in tropical disease and advances in preventive medicine have done for mankind.

YELLOW FEVER CASES REPORTED IN SENEGAL DURING THE FIRST TEN MONTHS OF 1927



Reproduced from the Epidemiological Report of the health Section of the Secretariat, League of Nations.

Dr. Edward Hindle, M.A. (Cantab), who was appointed last year to the newly established Beit Fellowship in Tropical Medicine (£1,000 per annum), began work in January, and in the short period which has since elapsed has obtained results in the course of a research on yellow fever, which give good ground for the belief that a vaccine has been discovered which will afford protection against that disease.

It has been known for many years that the causative agent is carried from patient to patient by a particular mosquito named *Stegomyia fasciata*, but with many *aliases*. To Adrian Stokes and his fellow-workers at Lagos, Nigeria, the credit is due of having shown that by mosquito infection the disease could be transferred from man to an Asiatic monkey known as *Macacus Rhesus*. African monkeys were known to be immune. They and others have also shown that the virus is not a spirochaete (a flexible spiral organism), as has been of late believed by some authorities. Dr. Hindle and Dr. Sellards proved that the virus will bear carriage by sea in a refrigerator for 12 days or more and still retain its virulence. They also proved that it belongs to the group known as "filter passers," or filterable viruses.

Dr. Hindle, working independently, has since shown :—

(1) That the virus can be preserved when present in a portion of liver or of the blood of a monkey dead from the disease by drying it in a vacuum, and that as a dried paste or as a powder it retains its virulence apparently for an indefinite period.

(2) That if air be admitted to the containing vessel the virus is still active after a period of certainly three weeks or a month.

(3) That a very minute dose of the virus is invariably fatal in from four to seven days to monkeys of the species *Macacus Rhesus*.

(4) That a vaccine prepared from the livers of infected monkeys will protect a monkey from the effects of a dose of the virus ten thousand times as great as the fatal dose, and the monkey continues to be healthy and lively.

There are many points still to be decided during the further course of Dr. Hindle's research, such as :—

(*a*) The best methods of preparing and of administering the vaccine.
(*b*) The dose necessary to afford protection.
(*c*) How long does the protection last?
(*d*) Will the vaccine keep?
(*e*) The best form in which to transport it to the countries where it is wanted.
(*f*) Are the results obtained with monkeys also true of man?

Every stage in the process of manufacture and testing of such a vaccine will require the closest possible supervision by men skilled in laboratory technique. It may prove advisable that it should be made in a country free from yellow fever and from the presence of the mosquito (*Stegomyia fasciata*) certainly capable of acting as a carrier.

The benefit conferred by this discovery, assuming its value to be ultimately established, will not be limited to Europeans living in a country where the disease is endemic or in which it appears at intervals. It will be shared by the native population, who are not immune, as some, in spite of what should be convincing evidence to the contrary, still appear to believe. In a recent epidemic among natives in a single locality in West Africa the estimate which is probably the more nearly accurate is that the cases numbered 1,000 and the deaths 100.

One great benefit likely to accrue to the West African Colonies from this discovery is the removal of a fear of infection which is far greater than attaches to any other epidemic disease. Should the hopes now entertained be realized there can be little doubt that material benefits will follow."

MOSQUITO CAMPAIGN RETURN FOR 1927.

Week Ending	Premises Visited	Town—Lower				Town—Middle				Town—Upper				South				North-Front				Totals
		Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	
7/5/27	442	...	...	...	1	1	...	...	...	2	3	1	...	...	...	...	2	.	...	...	...	10
14/5/27	399	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	2	...	...	...	..	5
21/5/27	419	..	...	...	...	...	...	...	...	4	...	...	...	...	1	...	3	...	...	...	1	9
28/5/27	504	1	1	...	...	3	...	...	...	6	...	...	...	1	..	...	1	...	...	...	...	13
4/6/27	751	...	..	..	...	1	...	...	...	4	...	...	...	2	...	...	4	...	...	...	1	12
11/6/27	787	...	...	...	..	...	...	...	...	6	2	.	1	2	2	...	1	...	..	...	...	14
18/6/27	809	2	...	3	5	...	...	...	5	5	...	...	2	1	...	...	5	...	...	...	2	30
25/6/27	767	2	...	...	...	6	...	...	...	7	1	...	3	.	...	..	7	...	...	...	1	27
2/7/27	1074	3	...	1	1	6	...	...	1	12	...	...	2	5	...	1	2	...	...	...	1	35
9/7/27	1145	...	...	1	2	8	...	...	...	9	...	...	...	5	2	1	2	...	...	..	1	31
16/7/27	1146	1	...	..	2	2	...	...	...	4	...	1	...	3	1	...	3	...	..	..	1	18
23/7/27	1056	1	...	1	1	3	...	...	1	10	...	...	1	2	1	...	...	.	...	...	1	22
30/7/27	1143	1	...	5	3	5	...	..	...	5	1	...	...	4	3	..	1	...	...	..	.	28
6/8/27	1002	1	..	9	1	6	...	1	...	10	...	2		1	2	3	2	...	1	...	1	40
13/8/27	1012	4	..	6	...	5	..	...	2	8	...	2	1	3	...	12	2	...	...	...	..	45
20/8/27	973	3	...	6	1	1	...	..	1	5	1	...	..	3	...	...	3	...	...	...	...	24
27/8/27	989	...	...	6	2	2	...	1	...	9	.	...	...	...	...	1	...	...	1	...	..	22
3/9/27	1016	3	1	1	3	7	..	...	...	7	...	...		1	...	...	1	...	...	...	...	24
10/9/27	996	...	...	5	3	6	1	1	2	5	..	1	...	...	...	...	1	...	...	...	1	26
17/9/27	1018	3	...	3	1	4	...	...	...	8	...	...	...	...	.	1	1	...	...	...	...	21
24/9/27	979	...	...	3	...	...	...	...	...	5	...	...	..	...	...	1	2	...	1	...	...	12
1/10/27	1033	1	...	2	1	1	...	...	1	7	1	...	...	1	...	...	3	...	...	...	...	18
8/10/27	891	2	...	2	...	2	...	...	...	6	...	...	...	...	...	...	1	...	...	...	...	13
15/10/27	926	1	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	4
22/10/27	817	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
29/10/27	912	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	3
Totals...	23006	31	2	54	30	69	1	3	14	149	9	7	10	34	13	20	49	...	3	...	11	509

Others include:—Galvanized Iron Tanks, Galvanized Iron Baths, Brackish Water Tanks, Empty Tins, Sacred Fonts, Surface Gullies, Wells, Catch Pits, Drinking Troughs, Storm Water Drains, Buckets, Flower Vases, Concrete Tanks, Enamel Jugs, &c., &c.

SUMMARY.

Tubs...	283
Barrels	28
Earthenware Vessels	84
Others	114
Total...	509

FLIES.

A vigorous anti-fly campaign has been carried on during the year. Propaganda work was carried out, leaflets being distributed from door to door and large posters put up dealing with the fly menace.

Undoubtedly large numbers of flies are introduced daily from "La Linea."

The Medical Officer of Health in 1907 in a report states: "Large quantities of seaweed are thrown up on the North Western Beach of the North Front during Westerly gales which serve as a breeding ground for flies."

This accumulation of seaweed requires constant attention to ensure its removal or destruction after gales.

The regular disinfection of stables throughout the summer has had a most beneficial effect with regard to the prevalence of flies. In this connection 1,334 disinfections in stables have been carried out.

RAT REPRESSION.

Active measures have been taken throughout the year to ensure the destruction of as many rats as possible and also to bring to the notice of the public the necessity for reducing the rat population to the lowest possible dimensions. There are special reasons for a constant campaign against rats in Gibraltar. Plague is endemic in Morocco, and there is always the possibility that the disease may be brought into the port. In addition to this, the destruction and damage to property, foodstuffs, etc., by means of rats, further justifies the stringent measures which are taken against these vermin.

Two rat-catchers are constantly engaged in the extermination of rats and the assistance given by them is much appreciated by occupiers and owners of premises.

Rats are regularly submitted to the City Bacteriologist for examination.

Copies of the memorandum as to the destruction of rats have been widely circulated and an office record is kept of all premises visited, and the daily work of the rat-catchers.

A weekly detailed report is submitted to the Council.

Rats Destroyed during 1927, by Districts (not including H.M. Dockyard).

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
South District	183	193	232	262	281	301	319	358	433	416	425	441	3,844
Town ,, ...	207	272	272	340	349	323	334	411	497	466	433	468	4,372
North ,, ...	84	59	63	61	75	120	94	111	93	86	130	80	1,056
Sheds and Warehouses Waterport Wharf and Commercial Mole	1	1	2	29	17	5	6	12	10	11	14	5	113
Total.....	465	525	569	692	722	749	753	892	1033	979	1002	994	9,385

Rats examined during 1927.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Infected	—	—	—	—	—	—	—	—	—	—	—	—	—
Uninfected	8	11	3	9	12	6	12	6	12	9	15	9	112

Number of poisoned baits laid by Rat Catchers during 1927.

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
8,282	7,666	8,495	7,927	7,595	7,331	8,764	8,303	9,515	9,873	9,686	9,617	103,454

Rats destroyed during 1927.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Civil and Colonial Property	Trapped ...	474	525	569	677	710	738	740	882	1008	964	991	982	9,260
	Poisoned...	1	—	—	15	12	11	13	10	25	15	11	12	125
H.M. Dockyard	Trapped ...													2,172
	Poisoned...													698
Total.....		475	525	569	692	722	749	753	892	1033	979	1002	994	12,255

DISINFECTION.

The Disinfecting Station is situated at the North Front, near the Refuse Destructor from whence the steam is supplied.

The Disinfector is a Washington Lyons.

Bedding and clothing, etc., are disinfected by exposure to steam.

Books are disinfected by formalin vapour.

The method in use for the disinfection of rooms is that of the Formalin Spray or by vapourising Formalin.

Cleansing by soap and water and limewashing after disinfection are the method advocated.

Schools are disinfected by spraying during the holidays.

Stables are disinfected weekly during the summer months, this has been found to be an excellent anti-fly measure.

Month	Beds and Mattresses	Bolsters and Pillows	Blankets and Quilts.	Sheets.	Counterpanes.	Books.	Sundries.	Total.
January	41	54	54	61	4	—	180	401
February	28	56	62	58	6	—	168	378
March	31	50	44	58	4	—	170	357
April	33	64	61	67	—	—	120	345
May	51	99	87	84	12	6	228	567
June	36	67	69	84	16	1	255	578
July	51	80	93	102	12	—	311	649
August	122	125	159	215	4	—	664	1289
September	43	67	53	87	12	13	226	501
October	72	128	92	158	19	—	205	674
November	29	27	38	34	—	—	90	218
December	39	44	43	33	2	—	95	256
Total	576	861	855	1048	91	20	2712	6163

Premises disinfected for infectious disease... ... 171

Premises disinfected for vermin 9

AMBULANCE FACILITIES.

The ambulance service is under the control of the City Council and consists of one motor and two horse ambulances.

Provision has been made in the estimates for 1928 for the purchase of a modern Ambulance of British manufacture, and this will greatly improve the ambulance service and afford a much greater degree of comfort for patients.

It is proposed to use the present motor ambulance for conveying clothing for disinfection instead of a mule ambulance. This will result in the saving of much time and expense.

All the Sanitary Inspectors have now obtained the St. John's Ambulance First Aid Certificate and are also qualified motor drivers.

This adds greatly to the efficiency of the ambulance service.

Cases removed in ambulance during the year :—

Local	51
Bay	48

DETAILS OF CASES REMOVED TO HOSPITAL BY AMBULANCE.

	Local.	Bay.
Fractures	3	4
Tuberculosis	4	4
Other Causes	24	22
Whooping Cough	—	1
Influenza	—	2
Venereal Disease	—	1
Pneumonia	2	7
Diphtheria	7	—
Rheumatic Fever	—	1
Enteric Fever	4	2
Chicken Pox	1	1
Maternity	1	—
Appendicitis	2	1
Scarlet Fever	3	—
Typhus Fever	—	1
Dysentery	—	3
Total	51	48

REPORT OF THE CITY ANALYST AND BACTERIOLOGIST.

The total number of samples and specimens examined during the year 1927 was 4,579.

This number exceeds that of other years and is an increase of 578 over last year. During the last seven years the work of the Laboratories has nearly doubled—the number of samples rising from 2,399 to 4,579. The branch of the work comprising bacteriology and chemical pathology is chiefly responsible for this progress.

The report is divided into three parts as follows :—

Part I. Food and Drugs—Public Health Ordinance.
Part II. Miscellaneous analyses.
Part III. Bacteriology.

PART I—FOODS AND DRUGS.

The number of samples submitted under this heading was 168. These samples were purchased officially by Sanitary Inspectors with the necessary formality. The following table shows the nature of the samples received :—

Article.	*Number examined.*
Cow's Milk	6
Goat's Milk	56
Condensed Milk	1
Cheese	1
Butter and Margarine	15
Cereals...	10
Tea, Coffee, Cocoa	12
Sugar and Saccharine products ...	4
Spirits	29
Edible Fats and Oils...	18
Drugs	10
Miscellaneous	6
	168

The articles classified above were made up as follows :—

Butter and Margarine	Butter 6, Margarine 9.
Edible Fats	Lard 5, Olive Oil 11, Cream 2.
Cereals	Baking Powder 3, Custard Powder 1, Wheat Flour 2, Pea Flour 1, Quaker Oats 3.
Tea and Coffee	Tea 6, Coffee 6.
Sugar and Saccharine Products ...	Sugar 4.
Spirits...	Whisky 7, Brandy 8, Gin 8, Rum 6.
Drugs	Mercury Ointment 2, Tinct. Iodine 2, Tartaric Acid 2, Amm. Tinct. Quinine 2, Citric Acid 2.
Miscellaneous	Tinned Tomatoes 1, Tinned Fish 2, Preserved Peas 1, Sausage 2.

ADULTERATED SAMPLES.

The number of samples found to be below the standards set out in the Public Health Ordinance was 24 or 14·8 per cent.

For comparison the number below the standard for 1926 was 13·1 per cent. and for 1925 was 7·2 per cent.

In all cases where the City Council considered it advisable legal proceedings were instituted against the vendor.

The number of convictions obtained was nine which is the same as the previous year.

Total fines amounted to £43 10 0; also costs £7 1 0, total £50 11 0.

There was one "Appeal to Cow" sample and the licence of one vendor was cancelled for repeated adulteration.

PARTICULARS OF ADULTERATED SAMPLES.

GOAT'S MILK DEFICIENT IN MILK-FAT.

Lab. No.	Milk-fat per cent.	Deficiency in Fat per cent.	Remarks.
223	2·60	25	Declared skimmed.
224	2·65	24	"
228	2·60	25	"
457	2·25	35	"
507	3·25	7	"
2029	3·05	12	"
2108	3·30	5	"
2110	2·75	21	"
2388	3·06	12	Fined £1 and costs £1 3 0.
2109	3·00	14	Declared skimmed.

The statutory limit is 3·5 per cent. of fat for Goat's milk.

GOAT'S MILK CONTAINING ADDED WATER.

Lab. No.	Non fatty solids per cent.	Added water per cent.	Remarks.
308	6·34	20	Fined £10 and costs £1 3 0.
1340	7·61	4·9	Fined £1 and costs 10/-.
2025	4·62	40	Fined £7 and costs £1 3 0.
2491	5·78	25	Fined £10 and costs £1 3 0.

The statutory limit is 8·0 per cent. for non fatty solids in Goat's milk.

GOAT'S MILK SHOWING BOTH ADDED WATER AND FAT ABSTRACTION.

Lab. No.	Deficient in Fat per cent.	Added water per cent.	Remarks.
2389	9·6	23	Fined £10 and costs £1 3 0.

GOAT'S MILK CONTAINING UNBOILED MILK.

Lab. No.	Estimated amount of unboiled milk present per cent.	Remarks.
225	9	In other respects genuine.
226	12	In other respects genuine.
1340	5	Also 4·9% added water.
2028	12	In other respects genuine.

OTHER ARTICLES OF DIET.

Lab. No.	Article.	Adulteration.	Remarks.
524	Rolled Oats.	Acidity 1·29% weevils.	Condemned, poor quality.
1793	Cow's Milk.	Acidity high, sour.	Unofficial sample.
1933	Margarine.	No label or wrapper.	Fined £3 and costs 3/-.
1197	Olive Oil.	70 % Soya bean oil.	Fined £1 and costs 3/-.

" APPEAL TO COW " SAMPLE.

Lab. No.	Non Fatty Solids.	Remarks.
1809	8·09	Equivalent to added water—5%.
1848 (Sample from Cow).	7·49	" Appeal to Cow " successful.

THE AVERAGE COMPOSITION OF MILKS.

The average composition of Goats' milk was:—

Fat	3·87
Non-fatty solids	8·67

The average composition of Cows' milk was:—

Fat	4·56
Non-fatty solids	8·75

These figures are well above the statutory limits for Gibraltar.

No preservative or colouring matter was found in any sample of milk examined.

DRUGS.

All the samples of drugs received were found to be genuine.

GOATS' BOILED MILK.

Of the 56 samples of Goats' milk received 10 (*i.e.*, 18 per cent.) were found deficient in milk-fat. As pointed out in reports of previous years some milk vendors habitually take off the scum which rises on boiling, to improve the appearance of the vended article. The milk is thereby robbed of a proportion of its fat—a valuable article of diet especially in the feeding of children and invalids.

In view of the fact that vendors of boiled goats' milk declare the milk "skimmed," thus evading the law, amendments to the Public Health Ordinance are under consideration, and include the following:—"No sample of boiled *scummed* goats' milk shall contain less than 3·5 per cent. of milk-fat." It is expected that this will become operative in the near future.

GOATS' UNBOILED MILK.

While no sample of raw imported milk was discovered there were, however, four samples showing some contamination with unboiled milk.

By law no imported milk may be offered for sale to the public unless it has been boiled in Gibraltar. This is a wise and necessary precaution for the protection of the people against milk borne diseases, the Council having no control over the source of production.

OLIVE OILS.

I am pleased to state that an improvement has been noticed in the quality of Olive oil obtained in Gibraltar during 1927.

The high acid values found in some oils the previous year were not obtained, and of the eleven samples examined two only exceeded 7 per cent. of acidity. This is considered the extreme limit of acidity for salad and cooking oils.

The table below shows the acid content of the oils examined :—

Lab. No.	*Acidity per cent. (as oleic acid)*
1195	1·06
1196	1·71
1197	5·77
1198	5·85
1199	6·11
1200	4·85
1935	8·89
1938	8·68
2195	4·60
2429	1·15
2432	2·26

WHISKY, GIN, BRANDY, RUM.

All of the samples of spirit examined were found to have conformed with the statutory regulations, viz., that these spirits shall not be reduced with water below 25 degrees underproof.

This is a great improvement on other years and especially on last year's record of seven samples adulterated by the addition of water, involving four convictions.

CONDENSED AND DRIED MILK.

One sample of condensed milk was analysed and found to have been prepared from whole milk. An Ordinance for Gibraltar based on the standards required in England is being drafted and is expected to come into operation during the year. By the proposed new Ordinance condensed milks will then have to conform to the following :—

	Milk-fat per cent.	*All milk solids per cent.*
1. Full cream sweetened	9·0	31·0
2. Full cream unsweetened ...	9·0	31·0
3. Skimmed unsweetened	—	20·0
4. Skimmed sweetened	—	26·0

In the case of dried milk there will be 4 classes as follows:

	Fat per cent.
1. Dried full cream	26
2. Dried ¾ cream	20
3. Dried ½ cream	14
4. Dried ¼ cream	8

PART II—MISCELLANEOUS ANALYSES.

In all 105 samples under this heading were analysed. These were as follows:—

2 samples water—from La Linea Club for hardness.

8 samples of coal—from City Electrical Engineer for chemical analysis and calorific power.

5 samples of flour—for chemical analysis, received from Military Authorities.

17 samples of water—received from Superintending Civil Engineer, H.M. Dockyard, for bacteriological examination and report.

4 samples of water—received from Manager, Andalusia Water Co., Spain, for bacteriological report.

21 samples of water—received from Medical Officer of Health to determine if polluted by sea water.

1 sample of condenser water—from City Engineer, examination for impurities.

1 sample of "La Granja" water—a Spanish spring water to be brought to Gibraltar for table use—complete chemical and bacteriological analysis and report.

1 sample of water—from Spanish spring for investigation as to medicinal properties and report.

1 sample of granulated sugar—report as to purity—private.

1 sample of material from water tank wall—from City Engineer—nature of material.

2 samples of edible oil—composition of oil and report if suitable for domestic use—private.

1 tin of dried infants' food—bacteriological examination and report if fit for use—private sample.

1 sample of cows' milk—analysis for evidence of adulteration—private.

1 sample of cows' milk—complete chemical and bacteriological analysis and report for Military Hospital.

1 sample of chocolate—received from Medical Officer of Health—for evidence of deterioration.

2 samples of lubricating oil—received from Electrical Engineer—for investigation of cause of corrosion of bearings.

1 sample of medicine—to determine if accurately dispensed—private.

4 blood smears from 1 mule, 2 oxen, 1 goat—bacteriological examination—for Anthrax—from Veterinary Adviser to the City Council.

3 samples of:—1 cattle bean stalk, 1 crushed oats, 1 straw—for bacteriological examination for presence of Anthrax—received from Veterinary Adviser.

1 sample of white powder—received from Medical Officer of Health—for identification.

1 tin of corned beef—for bacteriological examination as to possible cause of food poisoning of workmen—received from Medical Officer of Health.

1 sample of stain and saliva—for detection of blood—private.

1 viscera—for Toxicological investigation—sent by H.M. Coroner.

1 cerebro-spinal-fluid—for urea estimation—sent by H.M Coroner.

1 sample of biscuit—examination as to possible cause of sickness—received from Medical Officer of Health.

1 sample of oil cake—for analysis—private.

1 sample tinned cream—for analysis—from Military Authorities.

2 samples of castor oil seed—to determine if damaged by water—private.

1 sample of cheese—from Medical Officer of Health—required to know if fit for consumption.

2 samples of condensed milk—for complete chemical analysis—private.

2 oil-carrying ships were examined for impure air by the Guineapig test.

1 saliva from horse—from Veterinary Surgeon—for detection of stimulant drugs, *i.e.*, Cocaine, &c.

1 blood smear of horse—from Veterinary Surgeon—examination for Piroplasmosis.

Liver of dog—from Veterinary Surgeon—Bacteriological investigation.

1 sample of tea—from Medical Officer of Health—for evidence of adulteration.

TOXICOLOGICAL EXAMINATIONS.

1. Human viscera, *i.e.*, stomach and contents, liver and intestines, were analysed, by Coroner's order, for prussic acid, and cyanides, chloroform, chloral hydrate, caustic alkalis, and acids, oxalic acid and oxalates and the alkaloids, phosphorus, lead, copper, arsenic, antimony, mercury and zinc and alcohol. No trace of these poisonous substances were detected.

   Material on handkerchief found close to the above body was found to be lettuce mixed with starchy matter, *i.e.*, vomit.

   Cerebral-Spinal Fluid of the above case analysed for amount of urea. Urea present was 41 milligrams in 100 c.c., *i.e.*, normal.

2. Stain on handkerchief of child. The stain was not blood as suspected but red dye from sweets.

3. Tin of Corned Beef—thought to have caused vomiting among workmen at the Wharves. The tin was not blown, the meat was sweet and healthy and no micro-organisms of a food poisoning nature could be isolated. The meat was considered wholesome.

4. White Powder, used for disinfecting—sent by Medical Officer of Health. The powder was Sod. Arsenite.

5. Biscuits suspected of causing sickness in child. The biscuits contained starch sugar and fat and aniline dye. No arsenic was detected. The biscuits were not considered to have contributed to the cause.

ANTHRAX.

At the request of the Veterinary Adviser to the City Council, blood smears of various animals found dead from time to time were examined for B. Anthracis, as follows:—

November 11th, 1927—Blood smear of dead mule—bacilli resembling Anthrax were found in large numbers.

November 24th, 1927—Blood smear of bullock found dead at Cattle Sheds—bacilli resembling Anthrax were found in large numbers.

November 28th, 1927—Blood smear of another bullock found dead at Cattle Sheds—bacilli resembling Anthrax were present in large numbers.

December 5th, 1927—Blood smear of goat which died suddenly—no Anthrax bacilli were found by bacteriological methods.

December 15th, 1927—Blood smears of dead pig—Anthrax bacilli not found.

The Anthrax bacillus obtained from one of the dead bullocks was subsequently confirmed by laboratory cultural methods and Guineapig inoculation.

In connection with the above cases of Anthrax bacteriological examinations were conducted with the view of isolating B. Anthracis from the cattle food, *i.e.*, (1) Bean stalks, (2) Crushed oats, (3) Straw and (4) Beans. The Anthrax bacillus was not found in either of these articles. Feeding tests were also carried out with these materials, with negative results.

TANK BOAT WATERS.

Water is brought over in Tank boats from a pure water supply at Algeciras and sold to shipping when Gibraltar's public supply is restricted.

A watch is kept by the Public Health Department lest sea water gain access to the tanks and cause pollution. Eleven samples were taken and examined for salinity with the following results:—

TANK BOAT SAMPLES.

Chlorine in parts per 100,000 of water.

Algeciras Water...	1	2	3	4	5	6	7	8	9	10	11
2·0 to 3·2 ...	2·8	2·7	4·0	2·6	2·3	7·0	26·0	2·4	3·1	2·4	2·8

Tank boats Nos. 3 and 6 somewhat exceed in chlorine content the highest figure (3·2) found for Algeciras water. It is suspected that splashings of sea water or deck washings gained access to the pure water in these tank boats.

Tank boat No. 7 was previously filled with Gibraltar pure drinking water but its high chlorine content shows it to be Watering Jetty water which is used only for boilers.

A boiler water (*i.e.*, Watering Jetty water in Tank boat No. 26) was also found to have been mixed with sea water. Its chlorine content was 50·8 parts per 100,000 as against 35 parts per 100,000 for boiler water.

PART III—BACTERIOLOGY AND PUBLIC HEALTH WORK.

4,188 samples and specimens were examined during the year on behalf of the City Council, Naval and Military Authorities, Colonial Hospital and the general practitioners of Gibraltar.

These are tabulated below:—

	Number of Specimens.
Drinking waters and others	287
Swabs for B. Diphtheriæ, Vincent's Organisms, &c.	1417
Sputum for Tubercle Bacillus, &c.	192
Blood for Enteric and Undulant Fever (Widal)	183
Blood counts—complete	26
Blood for Malaria parasites	21
Blood cultures	11
Blood Sugar Estimations	64
Blood urea estimations (including urea concentration factor)	14
Blood for Venereal disease (Wassermann) ...	387
Cerebro-Spinal fluids, Cytology, Globulin, Sugar, Micro-organisms, and Wassermann...	22
Urine, urea content (including urea concentration test)	38
Urine, chemical analysis, and bacteriological...	920
Pus for Gonococci and other organisms ...	77
Fæces for Typhoid and Dysentery	114
Human Milk...	31
Serum for T. Pallidum (dark ground)	10
Goats' blood for Undulant fever (Widal) ...	209
Rats for Plague	121
Histological (cutting, staining and mounting)...	12
Gastric contents	9
Pleural Fluids (Cytology, organisms)	3
Miscellaneous	20
	4,188

Miscellaneous specimens include—Fæces for occult blood, intestinal parasites, tubercle B. and bismuth; Urines for acidosis and acidity; Bile, toothscale, tape worms and calculus analyses, &c.

Four hundred and seventy-four gallons of distilled water were made and sold.

Thirty antityphoid inoculations were done in the Laboratory.

AUTOGENOUS VACCINES.

The number of autogenous vaccines prepared during the year was 55. These were in connection with cases of cystitis, boils, eczema, nasal catarrh and bronchial catarrh.

The causative organism after being obtained in pure culture was dispensed in ampoules in series of increasing doses.

STOCK VACCINES.

The number of stock vaccines dealt with was 36.

These stock vaccines are kept in the Laboratory and when requested are diluted down and dispensed in ampoules in series of increasing doses. The vaccines used were pure acne, gonococcal, and coryza.

ANIMAL INOCULATIONS.

B. Diphtheriæ :—In long standing diphtheria cases when this organism was persistently found in the throat it was considered desirable to test its virulence by guineapig inoculation. Twenty-two of these inoculation tests were undertaken and of these twelve proved to be fully virulent to the animal and ten were non-virulent.

B. Anthracis :—A minute amount of blood taken from a bullock dead of Anthrax was subcutaneously injected into a guineapig. The animal died in thirty hours and B. Anthracis were found in large numbers in the blood. This with the Laboratory identification by cultural methods fully proved that the organism was B. Anthracis.

B. Ambiguus :—This organism was isolated from fæces on two occasions. It proved by inoculation and feeding methods to have no effect on guineapigs. This bacillus was therefore considered to be non-pathogenic. The patients' blood serum also did not agglutinate it.

Urine for Tubercle B. :—On two occasions it was requested that the urine sample should be subjected to guineapig inoculation for evidence of the tubercle B. On both occasions the animal remained unaffected.

GOATS.

The serological agglutination test was carried out on the 209 goats living on "The Rock." All were found free from Undulant Fever.

RATS.

One hundred and twenty-one rats which were caught in Gibraltar or on the quays were examined for the bacillus of Plague. All were free.

DRINKING WATERS AND OTHERS.

These include samples taken from Moorish Castle and Willis's Road, 63; Governor's Parade, 11; Brackish water, 11; Sea water, 11; Underground tanks and wells, 146; North Front wells, 12; Watering Jetty, 11; Catalan Bay wells, 22.

THE EXAMINATION FOR DIPHTHERIA.

In the examination of throat swabs for B. Diphtheriæ Klebs-Loffler bacillus only was considered, Hoffmann bacillus being disregarded.

There were 1,417 swabs submitted to the Laboratories and from these 75 of undoubted diphtheria cases (affected throats with presence of K.L.B.) were diagnosed in the City Laboratories by bacteriological methods.

Contact swabs:—The number of contact swabs taken and examined in connection with these cases of diphtheria numbered 646 of which 34 showed the presence of B. Diphtheriæ.

CLASSIFICATION OF CONTACT SWABS.

	Number of Contact swabs examined.	Number showing B. Diphtheriæ.	Positive Contact swabs per cent.
Contact swabs from Private houses.	353	16	4·5
Contact swabs from School 1.	265	18	6·8
Contact swabs from School 2.	28	None	None

TUBERCLE BACILLUS.

Sputum:—In 29 (15·1 per cent.) of the 192 specimens examined the diagnosis of tuberculosis was confirmed by finding the organisms in the sputum.

Urine:—Tubercle Bacillus was found in one suspected instance.

Cerebro-Spinal Fluid:—The diagnosis of tubercular-meningitis was confirmed by finding the organism in two specimens.

VINCENT'S ANGINA.

The organisms of Vincent's angina were found in the direct smear examination of five swabs. They were found in seven swabs the previous year.

BLOOD SUGAR DETERMINATIONS.

During the year 55 estimations of sugar in blood were done. Complete sugar tolerance tests were conducted on four patients for the diagnosis of diabetes. The rest were individual tests made for the control of insulin treatment. Maclean's method was used.

The results of the four patients who underwent the Sugar tolerance test for the diagnosis of diabetes are of interest —Nos. 2, 3 and 4 showing the poor tolerance for sugar of diabetes, while No. 1 is doubtful of true diabetes.

Patient.	Blood sugar before giving 50 gms. of sugar per cent.	Blood sugar after giving sugar per cent.				
		½ hr.	1 hr.	1½ hrs.	2 hrs.	2½ hrs.
No. 1	0·240	0·336	0·328	0·283	0·237	0·212
No. 2	0·089	0·153	0·221	0·166	0·125	0·100
No. 3	0·328	0·462	0·516	0·486	0·452	—
No. 4	0·278	0·386	0·392	0·392	0·316	0·308

RENAL EFFICIENCY TESTS.

Urea concentration factor :—In connection with renal disease the estimation of blood urea in relation to the urine urea content was conducted on sixteen patients. Maclean's modification of Marshall and Van Slyke's method was used.

Urea concentration test :—The estimation of urea in urine, one hour and two hours after giving fifteen grams of urea was conducted on fifteen patients. The sodium hypobromite method with Dupré's ureometer was used.

CEREBRO-SPINAL FLUIDS.

Cytology, Globulin test and bacteriological examinations are systematically carried out on all specimens received. When especially indicated the amounts of sugar, urea, sodium chloride and the Wassermann test are done.

Of the 23 specimens received four were found to be normal, and of the three examined by the Wassermann test for Sy. Meningitis all were negative. The Laboratory findings of the remainder, not including repetitions and unsatisfactory specimens, are given in the following table.

CEREBRO-SPINAL FLUIDS.

No.	White cells per c.m.m.	Nature of cells.	Sugar mgms. in 100 c c.	Globulin	Na. Cl mgms. 100 c.c	Urea mgms. 100 c c.	Organisms found	Laboratory findings.
1	3125	Poly 60 o/o Lymphs 40 o/o	traces	large excess	—	—	Meningococci	Meningococcal Meningitis
2	—	Much blood present		—	—	—	Pneumococci	Pneumococcal Meningitis
3	5	Lymphs	0·06	slight excess	—	—	none	—
4	368	Lymphs 50 o/o Polys 50 o/o	normal (less)	excess	0·62	—	Tubercle B.	Tubercular Meningitis
5	156	Lymphs	—	excess	—	—	none	Probably Tubercular Meningitis
6	559	Lymphs	traces	excess	—	—	Tubercle B.	Tubercular Meningitis
7	19	Lymphs	0·065	slight excess	—	—	none	—
8	3	Lymphs	0·07	normal	—	23·3	none	Enceph. Lethargica, died in Coma
9	66	Lymphs 95 o/o	traces	excess	—	—	none	Probably Tubercular Meningitis, died
10	603	Lymphs 60 o/o Polys 50 o/o	normal	slight excess	—	—	none	Clinically, Extradural Abscess, died
11	5	Lymphs	normal	slight excess	—	—	none	Indefinite (red cells, 168 per c.m m.)
12	634	Lymphs 50 o/o Polys 40 o/o	none	excess	—	—	none	Points to Tubercular Meningitis
13	156	Lymphs 95 o/o	—	excess	—	—	none	Specimen 1 c.c., probably Tubercular

PLEURAL FLUIDS.

Cytology and Bacteriological examinations were carried out on each specimen. Three only were received with the following Laboratory findings :—

No.	Nature of Cells.	Organisms.
1	Small Lymphs only ; many.	No micro-organisms found. Tubercular lesions suspected.
2	—	Not found. Specimen chiefly blood.
3	Small Lymphs, 25 per c.m.m.	Not found, no cancer cells seen, red blood cells present.

NOTIFIABLE DISEASES.

The table given below shows the number and nature of specimens examined and the results obtained in connection with notifiable diseases, and Venereal diseases :—

	Total.	Positive.	Negative.
Blood for Venereal Disease (Wassermann)	387	132	255
Cerebro-Spinal Fluid (Wassermann)	23	—	21
Cerebro-Spinal Fluid for T.B.		2	
Pus for Gonococci	77	14	63
Serum for Tr. Pallidum	10	5	5
Sputum for Tubercle B.	192	35	157
Swabs for B. Diphtheriæ	1417	266	1151
Blood culture :—			
Enteric Fever	11	—	10
Mic. Melitensis		1	
Widal reaction :—			
B. Typhosus	183	16	147
B. Paratyphosus A.		1	
B. Paratyphosus B.		16	
Mic. Melitensis		3	
Fæces :—			
B. Typhosus	114	3	93
B. Paratyphosus A.		—	
B. Paratyphosus B.		2	
B. Dysenteriæ Flexner		12	
B. Dysenteriæ Shiga		2	
Morgan's Bacillus		1	
Tubercle B.		1	
Blood smears for Malaria	19	2	17
Blood smears for Anthrax B.	5	3	2

Swabs for B. Diphtheriæ include convalescents and contacts.

Fæces for Enteric group include convalescents.

A. GEO. HOLBOROW, F.I.C.,
City Analyst and Bacteriologist,
Gibraltar.

MONTHLY ANALYSES OF GIBRALTAR DRINKING WATER DURING 1927.

Date.	Parts per 100,000.				B. Coli.
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
28/ 1/27	—	5·0	—	—	Not found in 25 c c.
28/ 2/27	—	5·2	—	—	do.
31/ 3/27	12 5	4 2	5 0	none	do.
25/ 4/27	13·5	3·6	6 0	none	do.
30/ 5/27	12 0	3·9	5 5	none	do
30/ 6/27	12·0	4·0	5·5	none	do.
30/ 7/27	10·5	2·8	5·0	none	do.
31/ 8/27	13·5	4·0	4·5	none	do
26/ 9/27	13 0	3·1	4·0	none	Present in 25 c.c.
30/11/27	—	2·8	—	—	* ,, ,, 10 c.c.
30/12/27	8·0	2·0	3·5	none	,, ,, 25 c.c
Average	11·8	3·6	4·6	—	—

*Local pollution.

RESULT OF MONTHLY ANALYSES OF WELL WATER.

SAMPLES TAKEN AT NO 5 WELL, NORTH FRONT.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
28/ 1/27	—	14·4	—	—	not found in 25 c.c.
28/ 2/27	—	13·0	—	—	present in 1 c.c
31/ 3/27	71·0	19·0	24·0	10·0	,, ,, 10 c.c.
25/ 4/27	—	14 0	—	—	not found in 25 c c.
30/ 5/27	—	20·0	—	—	do
30/ 6/27	91·0	22·5	24·0	15·0	present in 10 c.c.
8/ 7/27	—	11·0	—	—	,, ,, 2 c c.
30/ 7/27	69·0	10·5	21·0	14·0	,, ,, 10 c c.
31/ 8/27	56·0	9·0	20·0	12 5	,, ,, 10 c.c.
26/ 9/27	56·0	5·0	—	—	,, ,, 2 c.c.
30/11/27	—	4 3	—	—	,, ,, 5 c.c.
30/12/27	56·0	9·2	20·0	12 0	,, ,, 2 c.c.
Average	66·5	12·6	21·8	12·7	—

RESULT OF MONTHLY ANALYSES OF BRACKISH WATER SUPPLY IN 1927.

SAMPLES OBTAINED FROM MAIN IN GOVERNOR'S STREET.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
28/ 1/27	—	615·0	—	—	present in 1 c.c.
28/ 2/27	—	630·0	—	—	,, 1 c.c.
31/ 3/27	1,170·0	640·0	23·0	170·0	,, 5 c.c.
25/ 4/27	1,290·0	590·0	21·0	160·0	,, 2 c.c.
30/ 5/27	1.210·0	620·0	20·0	155·0	,, 2 c.c.
30/ 6/27	1,150·0	730·0	21·0	240·0	,, 1 c c.
30/ 7/27	1 510·0	720·0	20·0	235·0	,, 1 c c.
31/ 8/27	1.540·0	730·0	20·0	230 0	,, 1 c c.
26/ 9/27	1,520·0	670·0	20·0	220·0	,, 1 c c.
30/11/27	—	650·0	—	—	,, 0·1 c c.
30/12/27	790·0	360·0	16·0	210·0	,, 1 c.c.
Average	1,273·1	632·2	20·1	202·5	—

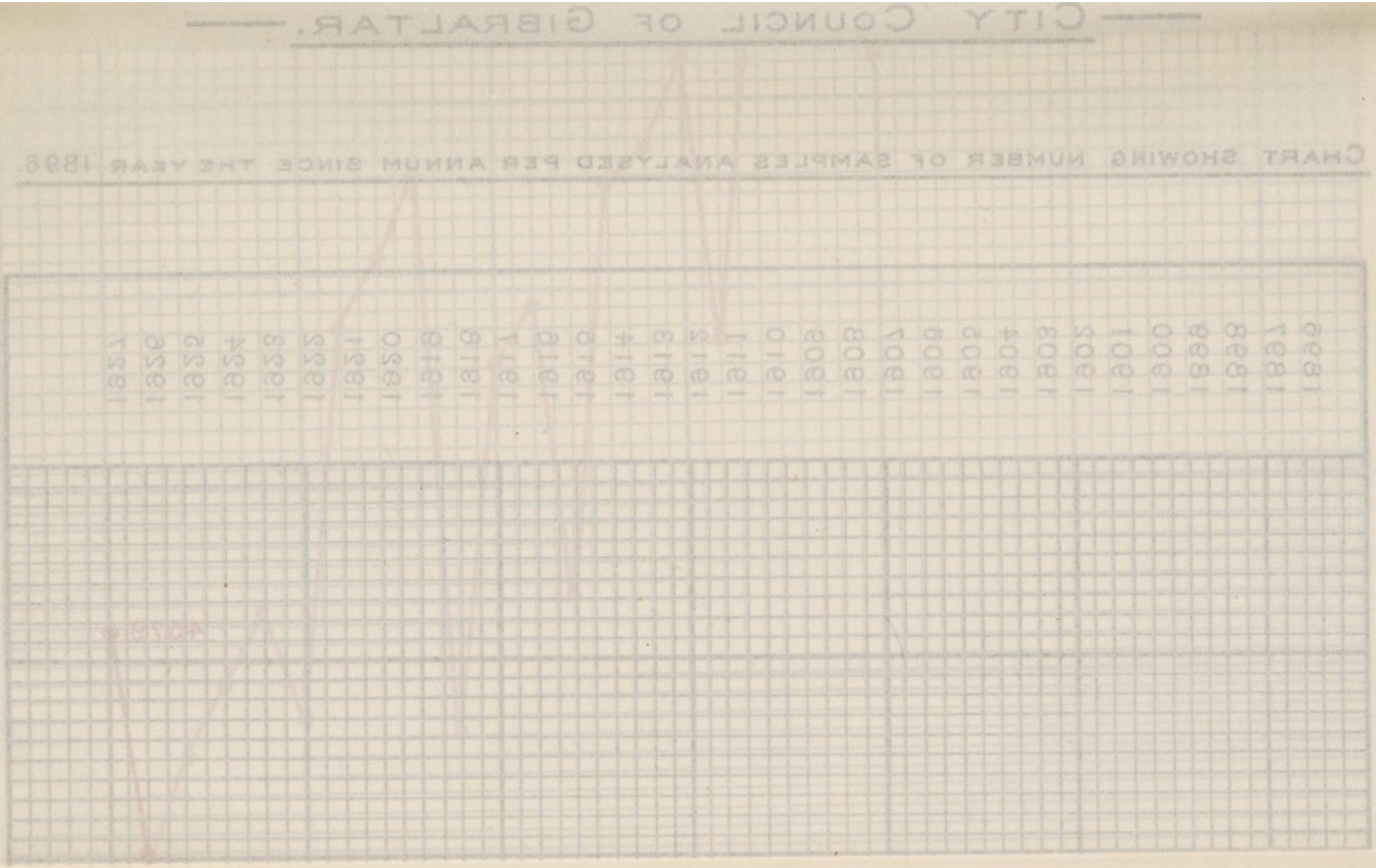
RESULT OF ANALYSES OF BOILER WATER IN 1927.

SAMPLES TAKEN AT WATERING JETTY.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
28/ 1/27	—	27·6	—	—	present in 5 c c.
28/ 2/27	—	33·0	—	—	,, 1 c.c.
31/ 3/27	129·0	34·0	47·0	10·0	,, 2 c.c.
25/ 4/27	128·0	23·5	43·0	10·0	,, 2 c c.
30/ 5/27	124·0	20·0	41·0	10·0	,, 2 c.c.
30/ 6/27	139·0	35·0	44·0	10·0	,, 1 c c.
30/ 7/27	98·0	24·0	35·0	10·5	,, 2 c.c.
31/ 8/27	—	21·5	34 0	10·0	,, 2 c c.
26/ 9/27	83·0	16·0	34·0	—	,, 5 c.c.
30/11/27	—	17·0	—	—	,, 5 c c.
30/12/27	124·0	29·2	40·0	10·0	,, 2 c.c.
Average	117·8	26·4	39·7	10·0	—

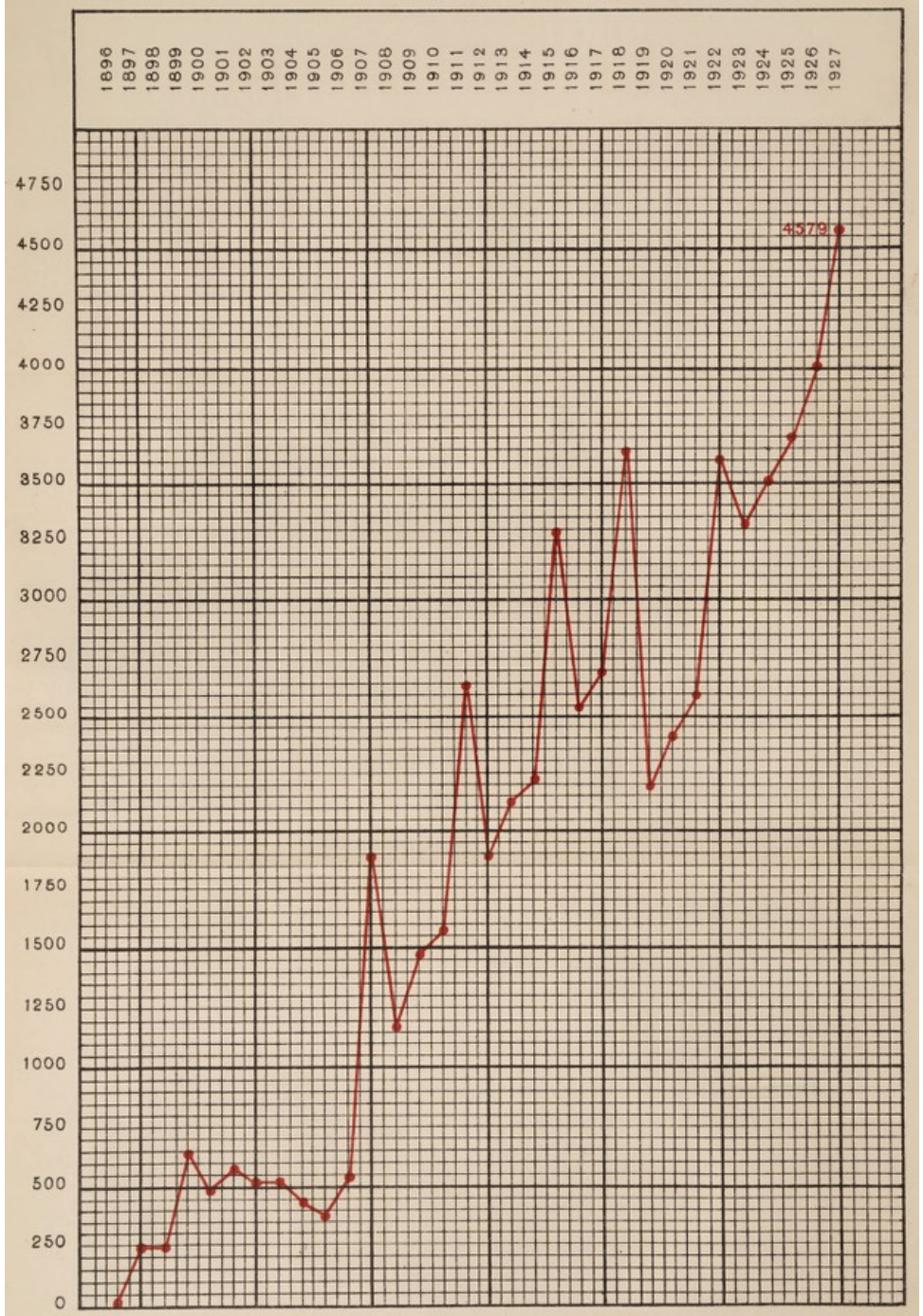
DISTRIBUTION OF SPECIMENS.

Nature of Specimen.	Civil.	Military.	Received from Military Hospital.	Navy.	Spain.	Colonial Hospital.	Total.
Blood, Wassermann	144	5	6	75	37	120	387
Blood Count	12	...	...	7	2	5	26
Blood Culture	2	1	4	...	...	4	11
Blood Sugar	45	...	...	...	7	12	64
Blood Urea	7	...	...	1	...	6	14
Blood, Widal	128	13	4	...	6	32	183
Blood, Malaria	13	3	...	2	...	3	21
Goats' blood for Mic. Melitensis	209	...	...	...	...	...	209
Swabs for K.L.B., &c. ...	862	185	12	28	...	330	1,417
Sputum	96	9	...	2	10	75	192
Urine	779	9	12	17	54	49	920
Fæces	16	60	6	1	...	31	114
Cerebro-Spinal Fluid	6	1	2	...	2	12	23
Pus (gonococci)	57	1	...	1	1	17	77
Serum for T. Pallidum ...	8	...	...	...	2	...	10
Human Milk	31	...	...	...	...	...	31
Histological	6	3	...	...	...	3	12
Gastric contents	3	2	2	...	...	2	9
Rats for Plague	121	...	...	...	...	...	121
Food and Drugs Act	168	...	...	...	...	...	168
Other Food & Drinks, &c. ...	28	14	...	...	...	...	42
Waters	212	102	...	17	3	...	334
Pleural fluids	2	...	...	...	...	1	3
Auto-Vaccine	23	20	1	1	4	6	55
Stock Vaccine	23	1	...	...	7	5	36
Guineapig Innoculation ...	15	8	1	...	...	3	27
Urine for Urea concentration	14	8	6	4	...	6	38
Coal	8	...	...	...	...	...	8
Swabs for Meningococci ...	...	5	...	...	...	...	5
Miscellaneous	19	1	...	...	...	2	22
Total	3,057	451	56	156	135	724	4,579


CITY COUNCIL OF GIBRALTAR.
CHART SHOWING NUMBER OF SAMPLES ANALYSED PER ANNUM SINCE THE YEAR 1896.
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
4000
4250
4500
4750
3000
3250
3500
3750

CITY COUNCIL OF GIBRALTAR.

CHART SHOWING NUMBER OF SAMPLES ANALYSED PER ANNUM SINCE THE YEAR 1896.



SANITARY CIRCUMSTANCES OF THE DISTRICT.

Much of the information given in this section of the Report has been kindly supplied by the City Engineer (Mr. W. H. Pearce, M.C., A.M.I.C.E., F.S.I.).

WATER SUPPLY.

Details of the water supply including methods of collecting and storing were given in detail in the Annual Report of 1926.

The quantity of rain water collected from the Council's areas during the year 1927 was 12,632,605 gallons, exclusive of an estimated quantity of 4,620,000 gallons which was run into the Brackish Water Reservoirs and to waste owing to lack of storage capacity during heavy downpours of rain.

The quantity of rain water disposed of from the Council's Reservoirs during the same period amounted to 11,501,751 gallons—made up as follows :—

(*a*) To the Public	10,230,471 gallons
(*b*) To the Shipping	1,271,280 „

During the year the amount of brackish water pumped and distributed for all purposes was 212,474,000 gallons.

The Council's potable water is subjected to full analysis at frequent intervals, and it is endeavoured to store all water for at least a fortnight, before distribution to the public. All distribution vehicles, butts, barrels, &c., are periodically disinfected by steam at the Council's Disinfecting Station.

Many houses are provided with underground storage tanks. The number of these being between 600 and 700 with a total capacity of nearly 8,000,000 gallons.

The potable water from private fresh water tanks is subjected to analysis (i) when samples are taken on the occurrence of a case of infectious disease, (ii) when complaints are received from occupants regarding their fresh water supply, (iii) when collecting areas are found to be fouled or dirty.

When fresh water tanks of private houses are found to be empty during the summer months, the attention of the owner of the premises is always called to the advisability of cleansing them.

If a sample is on analysis found to be polluted, the case is dealt with under Section 167 (10) of "The Public Health Ordinance, 1907." A notice is served on the owner or agent

of the premises requiring him to have the tank emptied and cleansed. He is also required to inform the Council when the cleaning is completed, so that the tank may be inspected. When water is again run into the tank a further analysis is made.

The procedure followed by the Military Authorities in Gibraltar as regards fresh water cisterns and tanks in Military premises is given below and should be followed whenever possible.

"All cisterns and tanks up to a 10,000 gallons capacity will be cleaned out annually during the dry season when they are nearly empty. Tanks of over 10,000 gallons capacity will be cleaned out every three years, or oftener if the water is condemned on analysis.

The annual cleansing will take place between 15th August and 15th September in each year, special attention being given to the cleansing of eaves-gutters and downpipes, and at other times of the year the cleansing will only be repeated when necessary for the removal of debris, such as leaves, bird droppings, &c., or for choked eaves-gutters or downpipes.

No inflowing pipe from catchment areas will be connected with a cistern or tank until the annual cleansing has taken place.

Before connection is made the first rain should run to waste until the water comes away clean, which may be ascertained by using a glass vessel."

Thus rain water is not collected from Garrison roofs at the end of the dry season until the roofs have been well washed by the Autumnal rains.

Water collected from roofs and led direct to tanks is liable to be more or less polluted by droppings of birds and cats and by the dust blown up from the surrounding areas and deposited on the roofs.

The following extract from a report in 1907 by the Medical Officer of Health, is of interest in this connection :—

"The drinking water which is mainly derived from rain water collected on roofs, and specially prepared areas, is inevitably open to contamination. The result of bacteriological examinations shows that B. Coli, the typical organism of sewage contamination, can be isolated in 10 c.c. of practically every sample of water collected on the Rock, and many specimens contain it in even 1 c.c."

It is doubtful in how far one can apply, to a water collected as that in Gibraltar is, the same bacteriological standard which we apply in the case of well or spring water, and this appears to be the view held locally. The typical B. Coli having been found in 10 c.c. of most waters collected from

roofs which have been consumed for years without apparent detriment to health, it has been the custom to pass such waters as "fit" for drinking purposes. Waters containing B. Coli in 0·1 c.c. have been condemned, as an inspection of the source of supply has usually shown distinct evidence of contamination by sewage in these cases.

An open mind has been kept as to the presence of B. Coli in 1 c.c. of water, the opinion formed being commonly based on the combined results of the chemical and bacteriological examination, and on the results of the inspection of the source of supply. Under ordinary circumstances, as in the case of a water supply from a well or spring, the presence of B. Coli in 10 c.c. of water would be considered a sign of definite and serious contamination. The Sanitary Officer comes to the conclusion that "it is evident that in spite of all precautions contaminated dust gains access to most of the tanks, and this is not surprising when one considers the physical conditions which obtain in Gibraltar."

The analyses of 676 samples of water from underground tanks in Gibraltar carried out in recent years in the City Council Laboratory show the following results:—

B. Coli not found in 25 c.c.	327
B. Coli present in 20 c.c.	10
" " 10 c.c.	40
" " 5 c.c.	49
" " 2 c.c.	68
" " 1 c.c.	82
" " 0.1 c.c.	100
Total	676

It will be seen that B. Coli have been found to be present in 10 c.c. of half the waters examined. The water of all tanks containing B. Coli in 0·1 c.c. have been condemned, and run to waste and the tanks cleaned.

There has been no water borne disease here for many years and water from underground tanks has been consumed without any apparent detriment to health thus showing that the opinion expressed in 1907 on the local water supply is a sound one.

Forty-nine underground fresh water tanks have been emptied and cleaned during 1927.

SEWERAGE.

The sewage from the greater part of Gibraltar gravitates to Europa Point and is there discharged into the sea.

The sewage from the Northern part of the district has however to be pumped and lifted, before it can gravitate as above.

Owing to the small fall available, and other reasons, the main sewer lines are very apt to silt up and the accumulation of silt of many years has been removed during 1927. Great efforts are now being made to prevent silting to anything like the same extent as formerly. Undoubtedly the efficiency of the gravitating system has suffered from too great an original desire to avoid pumping.

The quantity of sewage pumped was 56,279,924 gallons.

REFUSE COLLECTION AND DISPOSAL.

The daily collection is now principally done by Freighter Cars. Some few mule-drawn carts still remain, and a new pattern low loading improved type of vehicle is shortly to be tried. The refuse is incinerated at the City Council's Destructor, which now forms an efficient modern installation.

CLEANSING OF ROADS, MAINTENANCE OF HIGHWAYS, &C.

The road surfaces are now hygienic and sanitary. Every year sees the extension of waterproof surfaces. Formerly all the roads were muddy in winter and very dusty in summer, now, there is almost complete absence of these conditions. The road surfaces and general conditions of the streets are favourably commented on by many road engineers visiting Gibraltar. Too much refuse is cast into the highways, thus necessitating a large amount of street cleaning.

SEA BATHING.

The Council has had under consideration schemes for providing additional and improved public sea bathing facilities. It is proposed eventually to provide a complete sea bathing establishment on a site at Chatham Counter Guard, adjoining the existing men's bathing place. The provision of adequate bathing facilities for the public is of great importance from a public health point of view, and it is hoped that before long adequate provision will be made.

HOUSING.

Housing conditions in Gibraltar have ever been one of the most difficult of sanitary questions. Unlike the United Kingdom this is not a post-war problem, but one which, according to records, dates back many years, and which has been the subject of investigations on several occasions, notably in :—

1898—Fleetwood-Wilson Committee.

1900—Mr. Flynn's Report to the War Office.

1906—Commission of Enquiry appointed by the Secretary of State for the Colonies.

1910—Representations by the Sanitary Commissioners of Gibraltar.

1910—Report by the Government Engineer.

1920—Conference at Government House.

1920—Report of Committee appointed by H. E. the Governor.

1924—Report of Committee appointed by the City Council of Gibraltar.

The outcome of these investigations has been little more than to consider the question as serious and to demolish houses in congested areas of the City. The natural consequences are that, although more air space has been provided between buildings in certain localities of the town this sanitary improvement has been effected at the expense of the number of habitable dwellings. No real amelioration in housing conditions in Gibraltar has resulted, and no scheme for providing additional accommodation has matured.

The population, as will be seen from Appendix I, has remained more or less stationary for many years ; the natural increase of births over deaths is accounted for by emigration. In this connection it is interesting to quote from the Report of the 1920 Committee :—

" OVERCROWDING.

The primary difficulty is that the habitable area of Gibraltar is too limited in extent to admit of any considerable expansion of accommodation to meet an increase of population.

After allowing for the accommodation necessary to maintain the life of the fortress and port, and the domestic needs of the garrison and the civil population, there is but little margin available for private industrial or commercial expansion, without producing overcrowding in the habitable areas.

For the last century and more it has been an established principle in the administration of Gibraltar that, in the interests of the public health, nothing should be allowed which would tend to increase the numbers of the resident civil population, exclusive of Government employees, and accordingly no building of additional accommodation has been permitted without the personal sanction of the Governor.

In addition, rigid restrictions on the admission of Aliens into the fortress, and military restrictions in the interests of the defence, have been continuously enforced, with the object of preventing overcrowding which might prove to be dangerous to the health of the place.

The great necessity of the most extreme supervision to prevent an increase in the population has always been the most important feature in civil and military administration."

It appears, therefore, that the conditions of overcrowding (which were mentioned in Major Tulloch's report as far back as 1890—Appendix II) have been aggravated, viz., the same number of persons are now accommodated in a reduced number of houses.

A further reduction in the number of houses available for local families has been entailed by the demolition of a number of tenement buildings and the erection on the sites of flats, quarters, &c.

This was brought out in the Report of the Committee in 1920, which stated :—

"We find that, during the past 25 years or so, the available accommodation has been substantially lessened by the taking over of existing buildings and their adaptation for the accommodation of Government officials and employees, both natives and statutory aliens, with the result, on a balance being struck, of a reduction in accommodation for 101 native families, irrespective of those of the better class dislodged from houses taken up for officials of the Eastern Telegraph Company."

The consequence on the whole appears to be that there has been much sub-letting by private owners of rooms originally intended to form part of separate tenements, this accounting for the large proportion of single room tenements, and for the absence in many instances of kitchen accommodation. In many cases arrangements for cooking are provided by converting into a kitchen, space, taken from an already crowded living or sleeping room.

It may be stated here that there is no definite legislation in Gibraltar requiring the provision of kitchen accommodation, and where this is not provided, cooking is done in any available recess in the living room or patio.

The method of meeting the demand for house accommodation by sub-letting a room has been found to be prevalent in many places during the post war housing shortage. It has also been influenced by high rentals prevailing. This is a somewhat unobstrusive form of overcrowding confined chiefly, though not altogether, to the poorer classes of population.

One room tenements are in great demand here in consequence of the shortage of houses and the high rents prevailing, and they are taken up at once as soon as they become vacant. One room tenements rarely provide adequate accommodation.

A description of life in one room given by the late Dr. J. D. Russel, Medical Officer of Health, Glasgow, shows that conditions arise which seriously and adversely affect both mother and child, and conditions of privacy, which naturally are desired for such an occurrence as childbirth are impossible, and that one room tenements should be provided only in exceptional circumstances.

DENSITY.

The area of the City is approximately 104 acres.

The estimated civil population of the City is 14,604 (1920).

The density of population in the City is, therefore, 140 persons per acre, as compared with Manchester (1925) 35, and Glasgow (Old City, 1926) 57.

Crowding of several hundred persons to the acre may, however, be due to housing in perfectly sound tenements, five or more floors high. It is not a measure of urgency or of insanitary housing as commonly understood. But it has a definite bearing on other problems such as traffic and street congestion, and the spread of infectious diseases.

HOUSES.

Interesting information is given in the Report of the Government Engineer (1910), which shows the average number of inhabitants per acre, and the average number of houses per acre in four crowded areas in the upper part of the town. (Appendix III).

Under the Housing Act of 1924, houses in urban localities which are to qualify for subsidy must not, except with the consent of the Ministry of Health, be built at a greater den-

sity than 12 to the acre. In the Town Planning Scheme at Oxford the average number of dwelling houses which it is proposed to allow to the acre is from 12 to 14. It will be seen that the number of houses in the areas under consideration considerably exceed this, and the number of persons per acre is very large although in slum areas there are sometimes as many as 180 houses and over 900 persons per acre.

Congestion of houses usually means blocking out light and air, but, the crowding of houses on limited areas in the upper parts of the town does not generally interfere with the free circulation of air and the admission of sunlight as the houses rise in tiers one behind and above the other.

Newsholme states that an essential element in testing the true density of population is a statement of the number of persons living in each occupied room.

It is probable that this test, combined with a determination of the population on a given area, would give the most trustworthy available estimate of density, and that the two together would give a fair guide to the probability of the incidence of the diseases connected with overcrowding, especially those, the infection of which is received by the respiratory tract.

STANDARDS.

Before going into the actual housing conditions prevailing in Gibraltar, it is necessary to consider what are the generally accepted standards on which overcrowding may be estimated, and the evidence which is available on which an opinion may be based.

Overcrowding may be estimated according to the following standards:—

(i.) The Registrar General's Standard—houses with more than 2 persons per room.

(ii.) Manchester Standard—houses with more than 2½ persons per bedroom.

It is impossible to strictly apply this standard as in many cases every room is used for sleeping purposes.

(iii.) Social Standard (Dr. Veitch Clarke)—conditions in houses which prevent the proper separation of sexes for sleeping purposes.

(iv.) Cubic Space—

Gibraltar (Bye Laws made under the Public Health Ordinance)—300 cubic feet for an adult.

150 cubic feet for a child (under 10 years).

This standard is considered an exceedingly low one.

Edinburgh Glasgow	400 cubic feet (considered a very low standard— Annual Report, Public Health Department, Edinburgh, 1922).
L.C.C.	500 cubic feet.
Army	600 cubic feet.

AVAILABLE INFORMATION.

It is possible to estimate according to any of these standards the conditions prevailing in Gibraltar, and the following data are available:—

(*a*) The result of a Card Enquiry made in 1924, embracing all Crown property and Freehold houses in Gibraltar and including particulars of Military lettings in Civil occupation. (Table I).

This enquiry gives details of the occupancy of over 8,900 rooms and covers upwards of 15,700 persons, or over 90 per cent. of the total population. (Tables II, III and IV).

These cards were summarised in 1924, and details were published in the Annual Report of that year, they are, however, being constantly brought up-to-date by information derived from systematic house-to-house inspection reports, infectious disease investigation cards, and from other sources. It is now possible to extract additional information concerning housing conditions in Gibraltar from these revised sources.

(*b*) Systematic house-to-house inspection.—In 1925, the Council resolved to institute a systematic inspection of all premises in Gibraltar, and the Medical Officer of Health received instructions to carry this out. Elaborate details of the sanitary particulars of each building are recorded, and include the measurement of every room.

The records of these inspections are entered up in special books from which every detail is available regarding the sanitary conditions of the houses inspected (over 400 separate buildings). Table VI.

(*c*) In every case of infectious disease a careful enquiry is made regarding the sanitary conditions prevailing.

The result is recorded on a card, and this has furnished much useful information as to accommodation, overcrowding, &c.

The cards for 1924, 1925, 1926 and 1927, which contain details of 654 tenements, have been summarised.

RESULTS.

Information obtained from :—

(*a*) Card Enquiry—

From these cards have been compiled Tables II, III and IV, showing the details of occupation of 3358 tenements (over 8400 rooms), covering all Freehold and Crown properties in Gibraltar, and the following results have been obtained :—

(i) Registrar General's Standard (houses with more than 2 persons per room)—

An analysis of the Card Enquiry shows that according to the Registrar General's Standard of 2 persons per room, of the 1222 single room tenements, 833 or 68 per cent. are overcrowded by 1719 persons.

Of the 833 two roomed tenements, 322 or 38 per cent. are overcrowded by 710 persons.

Of the 489 three roomed tenements, 96 or 19 per cent. are overcrowded by 191 persons.

The total number of individuals in excess of the available accommodation according to this standard is 2646 persons.

The number of families living in overcrowded conditions according to this standard is 1267, or approximately one-third of the civil population.

The number of persons living more than two per room in London was in 1911, 17·8 per cent. of the total private family population, and in 1921, 16·1 per cent.

The corresponding figures for the whole country were 9·1 (1911) and 9·6 (1921).

In Gibraltar 33 per cent. of the population are living more than 2 persons per room.

(ii) Manchester Standard—

This is a standard of 2½ persons per bedroom.

For the purpose of this enquiry all rooms have been regarded as sleeping rooms.

Of the 1222 single room tenements, 696 or 56 per cent. are overcrowded by 1303 persons.

Of the 833 two roomed tenements, 225 or 27 per cent. are overcrowded by 406 persons.

Of the 489 three roomed tenements, 55 or 8 per cent. are overcrowded by 65 persons.

The total excess of individuals to accommodation under this standard is 1778.

(iii) Social Standard—(this enquiry includes Military lettings occupied by civilians in addition to Crown and Freehold properties).

In most of the single room tenements, and many of the two roomed tenements it is difficult to see how the proper separation of sexes for sleeping purposes can be arranged. (Table IV).

(iv) Measurement Standard (Cubic Space)—

In instances where overcrowding appeared to be most marked, measurements of rooms were taken, nearly 2000 rooms being measured. The overcrowding at the various standards is shown in Table V.

It must be remembered in the consideration of standards of accommodation, that the size of rooms vary very much, some of the larger rooms in Gibraltar can accommodate from 6 to 12 persons under the 300 cubic feet basis, but in such circumstances overcrowding would obviously result, and the proper separation of sexes for sleeping purposes would be impossible.

The evidence derived from an examination of the infectious disease cards and the systematic house-to-house inspection books has enabled the results of 1924 to be revised up to date.

After a survey of the available data, the conclusion arrived at are much in accordance with my report of 1924.

It is interesting to note the high percentage of families occupying single room tenements in Gibraltar (Table III), there being 1222 out of a total of 3358 included in the card enquiry, or over 36 per cent. The number of families occupying two roomed tenements is 833 or 24 per cent. of the total.

It therefore appears that, over 60 per cent. of the families in Gibraltar live in one or two roomed tenements.

It is also noteworthy that out of 1222 single room tenements 459 have no kitchen accommodation provided.

There are 833 families living in two roomed tenements, of which 91 are without kitchen accommodation.

The principal factor in the housing situation in Gibraltar is the degree of overcrowding in small tenements (one and two rooms). From observations carried out in various localities in England it has been observed that overcrowding generally ceases where the number of bedrooms exceeds two.

SYSTEMATIC HOUSE-TO-HOUSE INSPECTION (Table VI).

The first buildings were inspected in November 1925, and since that date over 400 systematic inspections have been made.

These systematic house-to-house inspections are additional to the various casual inspections and visits to houses which are being continuously carried out by Sanitary Inspectors in the course of their duties.

The 400 houses inspected included 1427 tenements and 1274 stores, offices, shops, garages, &c.

General repairs have been carried out since these inspections were started in 74 instances, and repairs of a minor nature in 56 instances.

Twenty-two houses were found to be in a dilapidated condition.

The conditions of the houses inspected as regards cleanliness were of a good standard, and the majority of the tenements were clean and well kept.

NEW CONSTRUCTIONS, RECONSTRUCTIONS, ADDITIONS, &C. (carried out in Gibraltar since 1919) Table VII.

Although few houses have been built in Gibraltar since the war, it is satisfactory to note that a considerable amount of re-construction, renovation, &c., has been carried out, resulting in much improvement of sanitary conditions and providing an increase of 232 living rooms. These however have been provided principally in better class houses and have had little effect in relieving overcrowding in tenement buildings.

RECENT SANITARY LEGISLATION.

Consequent on the recommendations of the Housing Committee appointed in 1920, para. 3 of which reads as follows :—

> "That pari passu with the removal of families from overcrowded premises, the accommodation vacated by them be ear-marked by the Medical Officer of Health as fit only for a certain number of persons, and that the owners of such premises be notified to the effect; such Bye Laws under Section 166 of the Public Health Ordinance be made by the Sanitary Commissioners as are necessary for the enforcement of such limitations."

The following Bye Law was passed in 1921 :—

> "The owner, landlord and agent of any premises, house, part of a house or room shall not knowingly cause or suffer a greater number of persons than will admit of the provision of 300 cubic feet of free air space for each person of an age exceeding 10 years, and 150 cubic feet of free air space for each person of an age not exceeding 10 years to occupy, at any one time, a room used as a sleeping apartment.

The tenant or occupier of any premises, house or part of a house, or room shall not knowingly cause or suffer a greater number of persons than will admit of the provision of 300 cubic feet of free air space for each person of an age exceeding 10 years and of 150 cubic feet of free air space for each person of an age not exceeding 10 years to occupy at any one time, a room used as a sleeping apartment and which has been let to such tenant or occupier."

The primary object of this Bye Law is to assist in any future process of decongesting crowded areas, and to prevent new tenements becoming overcrowded.

Legislation of this sort has everywhere been found exceedingly difficult to enforce, but it is essential as a sanitary measure, to lay down the accommodation permissible in new dwellings.

Forty-two houses in Gibraltar now come under this Bye Law.

RENTS (averages taken from Card Enquiry)—

The average rental for various sized tenements has been obtained and is given in Table VIII The number of tenements under review was approximately 2956.

The average rentals from the records contained in the systematic house-to-house inspection books shows little difference when compared to the above, but perhaps, there is a slight upwards tendency, and rents appear to be, in many instances, out of all proportion to the accommodation provided.

Many of the poorer families in Gibraltar have much difficulty in meeting their rents, and as housing schemes often involve large capital expenditure, it is well to consider what rents families can pay for suitable accommodation.

It is often found that the total income of families is such that any increased rents cannot be met, or could only be met with the utmost difficulty, and it does not appear, therefore, that they would be able to afford any increase on the present averages.

HOUSING REQUIREMENTS.

Housing requirements are generally considered as :—

1. To meet normal growth of population.
2. To abate overcrowding.
3. To replace houses unfit for habitation.

It is No. 2 which is the problem in Gibraltar.

RE-HOUSING.

General Considerations—The housing problem in Gibraltar appears to be how to house in a satisfactory manner, a definite number of people in a limited area. The population has remained constant for many years, and about 80 per cent. live in the City area. The density of houses or of persons in this limited area does not appear to be, under present conditions, a serious health problem. There are, of course, many instances where the demolition of a building would improve light and ventilation of neighbouring houses. The houses rising one above the other, the access of sunlight is not generally affected and free ventilation is easily secured.

It is the overcrowding in houses which is the real problem and this can only be dealt with by some housing scheme, "the construction of new tenement buildings, reconstruction of existing buildings or blocks of buildings, or both."

Another defect is the limited space available in and around dwelling houses as a playground for the younger children.

There are many houses where accommodation could be increased by re-modelling, or by an additional storey; there are many houses in Gibraltar which with an additional storey would be well within the limit of 50 feet in height allowed by law.

There are also many blocks of buildings which could be advantageously demolished and replaced by modern tenement buildings, thus increasing accommodation and providing adequate facilities such as kitchens, larders, sculleries, water closets, wash-houses, &c.

In order that this policy could be carried out it would appear necessary that a housing survey should be made, and a scheme prepared, and its accomplishment spread over a number of years. Such a proposal is, I believe, at present under consideration.

One of the great difficulties in the carrying out of a scheme of this sort is the number of authorities and owners of property concerned.

For re-housing in tenement buildings on the same site one block of houses must be cleared before the first tenement can be built, and in order to clear them some other vacant site is necessary on which to decant the inmates.

Re-housing displaced population on a site, if a suitable one can be found, outside the area of the City has the great advantages of reducing the density of persons in that limited area, and of providing more healthy and suitable surroundings for children.

The proposal is often made, and is finding some measure of favour in English cities, that to meet difficulties re-housing should take the form of high tenement buildings. This, of course, has been done to an enormous extent in America. The height of buildings, as has been previously mentioned, is limited in Gibraltar by law to 50 feet, but military considerations may impose a lesser height than this. Anything in excess of 50 feet in height has many disadvantages and is not recommended.

STABLES.

There are many stables in the densely populated parts of the town. This is a most unsuitable locality from a sanitary point of view for the stabling of horses and mules.

As these stables are mostly under dwelling houses, the space now occupied by them could, with advantage, be used for other purposes such as adding to the accommodation of the house, provision of wash-house, &c.

In dealing with the housing question in Gibraltar, it should be borne in mind that there are at present approximately 3000 (figure obtained from British Vice-Consul, La Linea) Gibraltarians residing in La Linea, many of whom are anxious to return to Gibraltar.

BUILDING SITES—RESTRICTIONS AS TO BUILDING SITES—

Any scheme must commence with the selection of areas suitable for housing purposes.

Demolition of insanitary houses or blocks of houses should be associated with the re-housing of the displaced tenants.

In considering the question of available sites it must be borne in mind that Gibraltar is a fortress, and that sites, however ideal they may appear for the purpose of housing, cannot be taken without in the first place due regard being paid to military requirements.

A number of sites have been considered from time to time, including the following:—

Devil's Tower Road.
Governor's Meadow.
Flat Bastion Road.
Scud Hill Battery.
Empire Theatre site.
Devil's Gap Road.
Calpe Road.

The most suitable of these sites appear to be:—

(1) Devil's Gap Road—This is an excellent site, easily approached by an extension of Devil's Gap Road, or the steps at Lopez's Ramp.

This site is large, and a building constructed there would have plenty of sunlight and ventilation.

There is also space in that locality for children to play.

The disadvantage is that it maintains the density of population in an already crowded area.

(2) Devil's Tower Road—Many suitable sites could be obtained in this locality for tenement buildings with the advantage of reducing density in the City area and providing a much more suitable condition for children.

VITAL STATISTICS IN RELATION TO OVERCROWDING AND DENSITY.

The vital statistics of areas where density is high show a high proportion of deaths in childhood, and of deaths from respiratory diseases and infectious diseases.

	Gibraltar.	England and Wales.
Death rate per 1,000 of population ...	17·29 ...	12·3
Respiratory Diseases death rate... ...	2·6	
Phthisis death rate	1·3 ...	·771 (1926)
Infantile Mortality...	99·1 ...	69
Zymotic death rate...	·8	

It will be seen that the death rate from phthisis in Gibraltar is approximately double that of England and Wales.

There is obviously greater opportunity for the spread of infectious disease in densely populated areas with overcrowded and badly arranged houses where segregation is impossible.

It is interesting to note that there is no rickets in Gibraltar; this is an indication that the houses do not lack sunlight.

SOCIAL CONDITIONS.

Social conditions were fully discussed in my report of 1924 which says:—

"It is, however, obvious from the facts disclosed from this enquiry that many families in Gibraltar are living under conditions which although in many cases are not illegal must, in the nature of things, be immoral owing to the highly undesirable overcrowding together of persons of different sexes, ages and families. This is especially undesirable in those cases where people about the

age of adolescence are forced to share a room with older people. Such a state of things, and the inevitable congestion and overcrowding which result from it are most deplorable from the points of view of public health and welfare.

Again, where the density of population in tenement houses is unduly increased, the difficulty of providing water closet accommodation, water supply and food storage accommodation and cooking facilities for each house become almost insuperable."

Suitable arrangements for confinements are impossible under such conditions.

GENERAL CONCLUSIONS.

A considerable amount of overcrowding does exist in Gibraltar.

This overcrowding is practically confined to one and two roomed tenements.

A standard of 500 cubic feet per adult and 250 per child under 10 years of age should be adopted.

According to this standard and the standard of 2½ persons per room, the number of persons for whom accommodation is required in order to abate the present overcrowded conditions is approximately 2000.

It is considered that two rooms and a kitchen should be the smallest tenement provided in any housing scheme, and the letting of single rooms from these should be prohibited. It should be ensured that any additional accommodation provided is utilized for the relief of existing overcrowding, and not for any increase of the population by immigration.

When premises have become de-congested, steps should be taken to prevent them again becoming overcrowded. This perhaps can best be effected by some system of ticketing of houses.

APPENDIX I.

POPULATION, BIRTHS AND DEATHS—GIBRALTAR—1881-1927.

Year.	*Population.*	*Births.*	*Deaths.*
1881	16,186	493	373
1882	16,258	444	522
1883	16,330	485	443
1884	16,402	488	342
1885	16,474	497	488
1886	16,546	470	383
1887	16,618	487	506
1888	16,690	516	380
1889	16,762	483	410
1890	16,834	493	416
1891	16,906	486	350
1892	16,906	545	411
1893	16,906	504	335
1894	16,906	477	402
1895	16,906	521	363
1896	16,906	540	345
1897	16,906	530	430
1898	16,906	493	317
1899	16,906	530	412
1900	16,906	507	438
1901	17,373	544	371
1902	17,373	505	461
1903	17,488	512	353
1904	17,530	455	326
1905	17,596	538	375
1906	17,975	458	334
1907	17,373	431	300
1908	15,542	439	299
1909	15,614	436	268
1910	15,451	390	320
1911	17,135	418	301
1912	17,135	398	283
1913	16,147	386	247
1914	16,086	387	270
1915	16,163	366	271
1916	16,499	340	276
1917	16,549	370	272
1918	16,096	394	386
1919	16,040	399	308
1920	16,181	375	297
1921	16,753	429	282
1922	16,182	366	298
1923	16,165	365	285
1924	16,177	360	250
1925	16,127	372	249
1926	16,150	427	271
* 1927	16,120	297	363

Total Births—1881-1927	21,222
Deaths—1881-1927	16,316
Excess of Births over Deaths ...	4,906

* In addition to the above figures which show the fixed population, on which the birth rate is calculated, there is a floating population which in 1927 was 1,076, giving a total population of 17,196.

APPENDIX II.

Extract from Report

"WATER SUPPLY AND SEWAGE OF GIBRALTAR,"

BY

Major H. TULLOCH, Royal Engineers,

1890.

SANITARY DEFECTS.

The excessive overcrowding is an evil which, if not grappled with soon, may lead to the most serious consequences. Although this great density of the population is universally admitted, it is difficult to compare it with that of English towns. In the first place, a "House" in Gibraltar is not what we should understand by a "House" in England, *i.e.*, an entirely separate holding belonging to, and usually occupied by, one family, and completely cut off from the adjacent dwellings. The houses are, as already explained, groups of tenements enclosing a courtyard or patio, which is common to all, and to which there is usually only one access from the street through a narrow passage. The houses, in fact, are not entered from the streets, but from the patios, the rooms on the upper floors being usually provided with balconies, and being accessible by staircases for the common use of all the tenants. A "house" may mean two rooms only, or it may mean 20. Under this circumstances, it is difficult to specify what the term should exactly be restricted to, and it will now be seen that it would be quite misleading to compare the average number of tenants in a house in Gibraltar with that in a house in England. The force of this will be admitted at once from the following extract from a report made by Mr. E. Roberts, Civil Engineer, in 1870, on a "Proposed Scheme for a Supply of Fresh Water to the Town and Garrison of Gibraltar." By his long residence in the Colony, and from having to prepare so many sanitary schemes for the welfare of the population, he was most intimately acquainted with the life and habits of the people, and we may, therefore accept the correctness of his statements as applicable not only to the state of things 20 years ago, but as fairly applicable still, for the simple reason that, although the house accommodation has been somewhat improved, the population is believed to be the same, while the number of aliens entering the town has greatly increased.

> "The average number of occupants in each house is 22, but in very many instances the actual number is much higher. In 74 houses, for instance, there is an average number of 56, and in some individual cases the numbers are 67, 87, 94, 120, 170, and 220."

It would thus be ridiculous to compare this average density of the population, considered with reference to the term "house," with the average density in England. The latter is about 5, and seldom exceeds or falls short of this in any ordinary town. A safer method to establish a comparison will be by ascertaining the numbers of people occupying given definite areas. On this interesting subject Dr. Collins has given me the following facts. The area on which the town proper stands has been computed to be a quarter of a square mile, and the civil population located there number 15,542, the military 2,341, or a total of 17,883. This is at the rate of 71,532 people to the square mile. Even this is, I believe, understated, for I have myself several times calculated the occupied area of the town, and I cannot bring it to even one-sixth of a mile, in which case the density would be 107,298 per square mile, or 167 an acre. This does not allow quite 30 square yards of superficial space to each human being.

This density being calculated with reference to the population on the occupied area of the town, it cannot without great labour be compared with that of seaside towns in England, because every such town, of course, includes within its boundaries large areas of unoccupied spaces, but the best plan to convey an adequate idea of the density of the town proper of Gibraltar will be to compare it with that of the most dense districts in London, the areas of which are nearly altogether covered with houses in which, in fact, there are hardly any open spaces. If this be done, it will be found that there are only seven districts in all London which are more crowded than Gibraltar. These are the following:—

Westminster	216 per acre.
Shoreditch...	195 „ „
St. George-in-the-East	193 „ „
Holborn	186 „ „
St. Giles	185 „ „
Whitechapel	176 „ „
Bethnal Green	168 „ „

This question of overcrowding cannot be ignored by the Sanitary Commissioners. If an epidemic once gets a real hold of the town before the authorities become aware of its existence, the mortality will be terrible. The remedy should be the making of a stringent bye-law limiting the number of occupants for each dwelling, and visiting with severe punishment the owner or tenant, who should permit more than the prescribed number to dwell there; of course, another bye-law, supposing there is not one already to this effect, making it compulsory, under a severe penalty, on the occupier or owner to give notice at once to the Officer of Health of every case of infectious disease in his house.

APPENDIX III.

(Taken from Report of Government Engineer, 1910).

Locality.	Average number of Inhabitants per acre.	Average number of Houses per acre.
Between Willis's Road and Castle Road	450	17
Between Castle Road and Castle Ramp	388	17
Between Castle Road and Chicardo's Passage	411	19
Between Lime Kiln Gully, Lopez's Ramp and Upper Lime Kiln Road.	309	15

TABLE I.

Details from Card Enquiry embracing all Freehold and Crown Property Houses in Gibraltar, and including particulars of Military Lettings in Civil occupation.

District.	Houses.	
	Crown Properties.	Freehold Properties.
North Front.....	1	—
Town	209	499
South	83	39
Totals.....	293	538
	831	

For the purpose of this enquiry a house has been regarded as a building structurally severed from adjoining property and includes tenement buildings. A tenement has been regarded as a room or set of rooms designed for one family, family unit or home.

POPULATION.

	Males.	Females.	Children.	Total.
Crown Properties	2,413	2,668	1,365	6,446
Freehold Properties..	3,197	3,846	1,354	8,397
Totals	5,610	6,514	2,719	14,843
*Military Lettings in Civil occupation	363	352	198	913
Totals.....	5,973	6,866	2,917	15,756

*Occupied principally by Civilians in Military employment.

TABLE II.

PARTICULARS OF PREMISES INSPECTED FOR CARD ENQUIRY.

Number of Buildings of	Freehold Property.	Crown Property.	Total Number of Buildings.	Total Number of Tenements.
1 Tenement	167	70	237	237
2 ,,	90	34	124	248
3 ,,	61	27	88	264
4 ,,	35	25	60	240
5 ,,	29	20	49	245
6 ,,	23	13	36	216
7 ,,	16	19	35	245
8 ,,	10	14	24	192
9 ,,	10	8	18	162
10 ,,	11	5	16	160
11 ,,	5	5	10	110
12 ,,	7	8	15	180
13 ,,	5	1	6	78
14 ,,	3	1	4	56
15 ,,	1	2	3	45
16 ,,	1	—	1	16
17 ,,	4	2	6	102
18 ,,	1	1	2	36
19 ,,	—	3	3	57
20 ,,	—	1	1	20
21 ,,	1	1	2	42
22 ,,	1	—	1	22
24 ,,	1	—	1	24
25 ,,	1	1	2	50
28 ,,	1	—	1	28
32 ,,	1	—	1	32
34 ,,	—	1	1	34
35 ,,	—	1	1	35
37 ,,	—	1	1	37
41 ,,	1	—	1	41
50 ,,	1	—	1	50
54 ,,	—	1	1	54
Totals	487	265	752	3358

	Garages.	Stables.	Offices.	Shops.	Stores.	Miscellaneous.
Freehold Property ...	17	32	112	345	229	102
Crown Property ...	8	45	2	53	35	34
Totals ...	25	77	114	398	264	136

The differences between the totals in this Table and those shown in Table I are accounted for by hotels, institutions, schools, clubs, &c.

TABLE III.

ACCOMMODATION AND ROOMS (Freehold and Crown Properties).

Families of	1 room	1 room and kitchen	2 rooms	2 rooms and kitchen	3 rooms	3 rooms and kitchen	4 rooms and kitchen	5 rooms and kitchen	6 rooms and over	TOTAL
1 Member	128	38	9	21	2	19	16	7	12	252
1½ ,,	2	4	—	2	—	—	—	—	—	8
2 ,,	75	142	15	115	2	59	47	28	47	530
2½ ,,	33	84	3	59	—	20	18	11	19	247
3 ,,	67	142	14	117	3	63	37	27	59	529
3½ ,,	23	60	5	44	—	13	13	12	11	181
4 ,,	38	97	10	97	4	73	29	31	34	413
4½ ,,	25	29	4	32	—	22	5	6	14	137
5 ,,	20	61	8	53	2	44	34	24	43	289
5½ ,,	12	18	5	30	1	20	9	8	10	113
6 ,,	17	34	8	50	—	46	21	20	12	208
6½ ,,	10	20	4	29	—	7	7	3	9	89
7 ,,	8	17	3	37	—	21	21	13	14	134
7½ ,,	—	8	1	14	1	12	4	3	3	46
8 ,,	1	4	2	17	1	23	3	6	10	67
8½ ,,	—	1	—	6	—	11	1	3	3	28
9 ,,	—	2	—	10	—	7	3	7	7	36
9½ ,,	—	—	—	3	—	6	2	1	4	16
10 ,,	—	2	—	4	—	5	4	3	2	20
10½ ,,	—	—	—	—	—	—	1	—	1	2
11 ,,	—	—	—	2	—	2	—	—	4	8
11½ ,,	—	—	—	—	—	—	1	—	—	1
12 and over	—	—	—	—	—	—	1	—	3	4
Totals..	459	763	91	742	16	473	280	213	321	3358
	1222		833		489					

SUMMARY (Crown Properties and Freehold Properties).

Excess persons at Registrar General's Standard :—

Total 1 room tenements..... 1222
Tenements Overcrowded ..... 833 or 68 per cent.
Overcrowded by ..... 1719 persons

Total 2 room tenements..... 833
Tenements overcrowded ..... 322 or 38 per cent.
Overcrowded by ..... 710 ,,

Total 3 room tenements..... 489
Tenements overcrowded ..... 96 or 19 per cent.
Overcrowded by ..... 191 ,,

Others..... 26 ,,

Total overcrowding..... 2646 ,,

TABLE III "A."

ACCOMMODATION AND ROOMS (Crown Properties).

Families of	1 room	1 room and kitchen	2 rooms	2 rooms and kitchen	3 rooms	3 rooms and kitchen	4 rooms and kitchen	5 rooms and kitchen	6 rooms and over	TOTAL
1 Member	28	20	2	6	—	2	4	1	2	65
1½ ,,	—	4	—	2	—	—	—	—	—	6
2 ,,	38	91	2	47	—	11	6	6	9	210
2½ ,,	12	66	1	40	—	10	6	4	5	144
3 ,,	21	88	3	57	1	19	5	9	18	221
3½ ,,	8	43	2	29	—	3	4	4	5	98
4 ,,	16	62	3	42	1	24	4	7	2	161
4½ ,,	8	19	2	17	—	9	1	1	5	62
5 ,,	8	42	1	23	2	13	8	7	10	114
5½ ,,	2	14	3	16	—	6	2	1	—	44
6 ,,	3	24	1	30	—	14	6	6	4	88
6½ ,,	4	14	—	19	—	2	—	2	—	41
7 ,,	3	15	1	21	—	7	6	3	1	57
7½ ,,	—	7	—	6	1	3	2	1	1	21
8 ,,	—	3	1	10	—	10	—	1	3	28
8½ ,,	—	1	—	2	—	7	2	1	—	13
9 ,,	—	1	—	8	—	4	—	1	2	16
9½ ,,	—	—	—	2	—	4	—	—	1	7
10 ,,	—	1	—	2	—	1	—	1	—	5
10½ ,,	—	—	—	—	—	—	—	—	1	1
11 ,,	—	—	—	1	—	2	—	—	—	3
11½ ,,	—	—	—	—	—	—	—	—	—	—
12 and over	—	—	—	—	—	—	—	—	2	2
Totals ...	151	515	22	380	5	151	56	56	71	1407
	666		500		156					

SUMMARY (Crown Properties).

Excess persons at Registrar General's Standard:—

Total 1 room tenements..... 666
Tenements overcrowded ..... 485 or 72 per cent.
Overcrowded by ..... 1011 persons

Total 2 room tenements 402
Tenements overcrowded ..... 166 or 41 per cent.
Overcrowded by..... 387 ,,

Total 3 room tenements 156
Tenements overcrowded ..... 41 or 26 per cent.
Overcrowded by..... 91 ,,

Others ..... 2 ,,

Total overcrowding ..... 1485 ,,

TABLE III "B."

ACCOMMODATION AND ROOMS (Freehold Properties).

Families of	1 room	1 room and kitchen	2 rooms	2 rooms and kitchen	3 rooms	3 rooms and kitchen	4 rooms and kitchen	5 rooms and kitchen	6 rooms and over	TOTAL
1 Member	100	18	7	15	2	17	12	6	10	187
1½ ,,	2	—	—	—	—	—	—	—	—	2
2 ,,	37	51	13	68	2	48	41	22	38	320
2½ ,,	21	18	2	19	—	10	12	7	14	103
3 ,,	46	51	11	60	2	44	32	18	41	308
3½ ,,	15	17	3	15	—	10	9	8	6	83
4 ,,	22	35	7	55	3	49	25	24	32	252
4½ ,,	17	10	2	15	—	13	4	5	9	75
5 ,,	12	19	7	30	—	31	26	17	33	175
5½ ,,	10	4	2	14	1	14	7	7	10	69
6 ,,	14	10	7	20	—	32	15	14	8	120
6½ ,,	6	6	4	10	—	5	7	1	9	48
7 ,,	5	2	2	16	—	14	15	10	13	77
7½ ,,	—	1	1	8	—	9	2	2	2	25
8 ,,	1	1	1	7	1	13	3	5	7	39
8½ ,,	—	—	—	4	—	4	2	2	3	15
9 ,,	—	1	—	2	—	3	3	6	5	20
9½ ,,	—	—	—	1	—	2	2	1	3	9
10 ,,	—	1	—	2	—	4	4	2	2	15
10½ ,,	—	—	—	—	—	—	1	—	—	1
11 ,,	—	—	—	1	—	—	—	—	4	5
11½ ,,	—	—	—	—	—	—	1	—	—	1
12 and over	—	—	—	—	—	—	1	—	1	2
Totals...	308	248	69	362	11	322	224	157	250	1951
	556		431		333					

SUMMARY (Freehold Properties).

Excess persons at Registrar General's Standard :—

Total 1 room tenements 556
Tenements overcrowded ..... 348 or 60 per cent.
Overcrowded by ..... 708 persons

Total 2 room tenements 431
Tenements overcrowded ..... 156 or 36 per cent.
Overcrowded by ..... 328 ,,

Total 3 room tenements 333
Tenements overcrowded ..... 55 or 16 per cent.
Overcrowded by ..... 100 ,,

Others ..... 25 ,,

Total overcrowding ..... 1161 ,,

TABLE IV.

OCCUPANTS.				TENEMENTS OF									
Males.	Females.	Children.	Total Number of Occupants.	1 Room.	1 Room and Kitchen.	2 Rooms.	2 Rooms and Kitchen.	3 Rooms.	3 Rooms and Kitchen.	4 Rooms and Kitchen.	5 Rooms and Kitchen.	6 Rooms and Over.	Totals.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Totals				548	791	136	795	53	656	279	209	313	[illegible]

This Table also includes particulars of Civil families occupying Military Lettings.

TABLE V.

OVERCROWDING AT VARIOUS STANDARDS.

Measurements taken of approximately 2000 rooms where overcrowding appeared to be most marked.

Tenements.	No.	@ 300 c. ft. per adult—overcrowded by												@ 400 c. ft. per adult—overcrowded by													@ 500 c. ft. per adult—overcrowded by													
		½	1	1½	2	2½	3	3½	4	4½	5	6	7	½	1	1½	2	2½	3	3½	4	4½	5	5½	6	8	½	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	8½
1 Room Tenements...	798	29	81	14	22	6	19	4	3	1	2	1	1	113	96	72	48	28	19	9	12	8	2	2	3	1	149	142	98	72	59	38	25	13	11	13	4	2	2	—	1
2 „ „	429	2	9	1	7	1	3	—	2	2	—	—	—	28	27	12	12	6	10	7	2	1	1	1	1	—	30	33	31	26	18	12	12	5	5	3	3	1	—	1	—
3 „ „	100	1	1	—	—	—	—	—	—	—	—	—	—	5	2	2	1	3	2	—	—	—	—	—	—	—	10	12	4	6	4	3	3	3	1	—	—	—	—	—	—

SUMMARY OF OVERCROWDING.

Tenements.				Tenements.				Tenements.			
1 Room	—183	overcrowded by	286 persons	1 Room	—413	overcrowded by	645 persons	1 Room	—629	overcrowded by	1078½ persons
2 „	27	„	54 „	2 „	108	„	181½ „	2 „	180	„	346½ „
3 „	2	„	1½ „	3 „	15	„	23 „	3 „	46	„	81 „
Totals	...212	„	341½		536	„	849½ „		855	„	1506 „

TABLE VI.

Particulars of Houses inspected (Crown and Freehold Properties) and defects found, from systematic House-to-House Inspection Records.

Number of Buildings of	Freehold Property.	Crown Property.	Total Number of Buildings.	Total Number of Tenements.
1 Tenement	110	45	155	155
2 ,,	54	14	68	136
3 ,,	34	9	43	129
4 ,,	20	11	31	124
5 ,,	15	3	18	90
6 ,,	9	9	18	108
7 ,,	4	7	11	77
8 ,,	5	6	11	88
9 ,,	6	4	10	90
10 ,,	6	3	9	90
11 ,,	2	3	5	55
12 ,,	3	3	6	72
13 ,,	2	—	2	26
14 ,,	—	1	1	14
16 ,,	—	3	3	48
18 ,,	—	1	1	18
19 ,,	—	1	1	19
21 ,,	—	1	1	21
24 ,,	1	—	1	24
26 ,,	1	—	1	26
28 ,,	1	—	1	28
36 ,,	—	1	1	36
Stores, &c.	2	—	2	—
Totals	275	125	400	1474

DEFECTS FOUND.

Insufficient light and ventilation	54
Defective water fittings	10
Defective roofs	95
Defective eavesgutters and downpipes...	100
Defective drainage	67
Defects in water closets, water closet fittings, soil pipes, &c.	51
Defective paving	72
Defective wallplaster and woodwork	139
Dampness (due to defective roofs)	52
(other causes)	10
Refuse receptacles not provided or of inadequate size	15
Premises dilapidated	22

TABLE VII.

New constructions—reconstructions and additions, &c., carried out in Gibraltar since 1919.

	Freehold Property.	Crown Property.	War Department (in civil occupation).	Totals.
NEW CONSTRUCTIONS—				
Living rooms...	81	147	14	242
Kitchens	24	22	2	48
Water closets	49	49	4	102
Bathrooms	34	39	2	75
Stores	4	1	1	6
Workshops	3	—	4	7
Garages	—	5	76	81
Offices	5	—	1	6
Urinals	5	2	—	7
Stables	—	2	—	2
CONVERSION OF—				
1 room into 3	3	1	—	4
3 rooms into 1	5	—	—	5
2 rooms into 1	10	2	—	12
1 room into 2	4	1	—	6
3 rooms into 2	1	—	—	1
6 rooms into 1	1	—	—	1
Stables into Garage...	3	—	—	3
Attics into living rooms	1	—	—	1
Living room into bathroom	3	1	—	4
Living room into kitchen	3	1	—	4
Kitchen into living room	5	—	—	5
Kitchen into bathroom	4	—	—	4
Kitchen into washhouse	2	—	—	2
Kitchen into water closet	1	—	—	1
Shop into living room	3	—	1	3
Living room into washhouse	1	—	—	1
Rooms into stores	2	—	—	2
Store into garage	10	—	—	10
Store into factory	—	1	—	1
Stables into schoolroom	—	1	—	1
Offices into rooms	—	25	—	25
Window into door	7	4	—	11
Pitched roof into flat roof	9	—	1	10
Door into window	2	—	1	3
			—	
Provision of new windows	6	—		6
Provision of washhouse	12	4	—	16
Provision of open area	1	—	—	1
Provision of skylight over open area	6	—	—	6
Provision of terrace	1	2	—	3
Enlargement of windows	14	2	5	21
Erection of petrol pump	—	5	2	7
Minor alterations	23	19	15	57

	Increase.	Decrease.
Living rooms	232	—
Stables	—	2
Garages	94	—
Bathrooms	83	—
Kitchens	32	—
Washhouses	3	—
Water closets	103	—
Shops	—	3
Rooms	23	—
Stores	—	9
Factories	1	—
Schoolrooms	1	—
Offices	—	25

TABLE VIII.

Particulars of Average Rents paid in Gibraltar obtained from Card Enquiry.

Tenements of	Number on which estimate is based.	Average Rental. (Per Month)				
		£	s.	d.	Ptas.	Cts.
1 Room	492	1	1	2	24	30
1 Room and Kitchen	776	1	3	9	30	45
2 Rooms	87	1	13	9	33	55
2 Rooms and Kitchen	637	1	15	10	49	85
3 Rooms	19	2	15	0	67	05
3 Rooms and Kitchen	397	3	7	6	70	15
4 Rooms and Kitchen	230	3	14	0	115	20
5 Rooms and Kitchen	152	5	14	0	147	80
6 Rooms and over	166	7	5	0	199	20

SUMMARY OF WORK DONE BY SANITARY INSPECTORS DURING THE YEAR 1927.

COMPLAINTS RECEIVED:	
Written	17
Verbal	119
PREMISES INSPECTED:	
General inspection (systematic house-to-house)	183
Casual inspection	2
NUISANCES FOUND:	
Defective drains	104
Obstructed drains	232
Defective W.Cs.	109
Defective W.C. fittings	215
Defective water fittings	221
Defective rainwater pipes	67
Defective eavesgutters	116
Defective roofs	77
Defective yard paving	37
Dampness	33
Premises dirty	39
Defective or no dustbin	93
Suspected pollution of water in underground tank	38
Underground tank not insect proof	38
Brackish water tank not insect proof or no cover	219
Brackish water running to waste	268
Samples of Food and Drugs taken for analysis	178
Premises disinfected for infectious disease	171
Premises disinfected for vermin, &c.	9
Stables disinfected	1334
Articles disinfected at N.F. Disinfecting Station	6163
Visits of enquiry re Infectious Diseases	202
Cases removed in Ambulance:	
Local	51
Bay	48
Visits to Milk-Shops	263
Visits to Eating Houses	174
Visits to Mineral Water Factories	148
Visits to Common Lodging Houses	116
Visits to premises on which notice for abatement of nuisances have been served and are revisited for the purpose of ascertaining if requirements are being complied with	2018
Notices served in accordance with Vaccination Ordinance, 1887	300
Legal Proceedings instituted	34
Foodstuffs, &c., condemned as unsound and further action taken	1
Street water fittings found defective	170
Defects found	2076
Defects remedied	2060
Pending on 31/12/27	16

REPORT OF THE VETERINARY ADVISER.

The general health of the animals of the Colony remains good and no serious outbreak of infectious or contagious disease occurred during the year.

In March a number of cases of Foot and Mouth disease occurred amongst the cattle imported from Morocco for slaughter. The disease is endemic in the French and Spanish Zones and appears to have been more virulent in the area extending from Casablanca North to the Tangier Zone. Every endeavour was made to ensure that only healthy cattle were shipped from the Moroccan ports but cases of the disease continued to arrive and a head to head inspection of all animals had to be carried out on the wharf as each consignment arrived in Gibraltar.

During the period March to November, 10,784 cattle, 2,248 sheep and 26 pigs were examined. Of these 784 cattle were found to be suffering from the disease. These were marked and slaughtered as soon as possible after arrival in order to prevent as far as possible the spread of this disease. No case of Foot and Mouth disease was seen in the sheep or pigs landed.

By restricting the movement of the cattle on landing to certain roads and buildings and by prohibiting the movement of the cows and goats in the Colony no case of the disease occurred amongst the milch cows or goats in Gibraltar.

During the year much was done to improve the buildings in which milk cows and goats are housed, thus ensuring healthier conditions for the animals and a more hygienic milk supply to the public.

Three cases of Anthrax occurred, one Government mule and two cattle imported from Morocco for slaughter. In the case of the former the source of infection is obscure but it is more than likely the disease was introduced through the agency of the carrots imported from Spain. In the case of the cattle it is pretty certain that they were infected prior to shipment from Casablanca. Thorough disinfection of the premises where the cases occurred and the restrictions imposed on movement of animals prevented any spread of the disease.

No case of Rabies was brought to notice during the year under review. The strict enforcement of the Muzzling Order combined with the order prohibiting the entry of dogs into the Colony, and the close supervision of the Police Force in collecting stray dogs have proved the efficacy of the existing administrative measures. The question of inoculating all the dogs of the Colony against Rabies received the attention of the Authorities and it is only a matter of time before this procedure is carried out. Until then the Muzzling Order must of necessity remain in force.

When the question of inoculating dogs against Rabies was under consideration, the City Council obtained the following opinions:—

Ministry of Health and Ministry of Agriculture and Fisheries	Immunisation of dogs against Rabies is not at present a reliable procedure.
Irak—Chief Pathologist, Baghdad...	The whole question of the general prophylactic inoculation of dogs is viewed as being in the experimental stage.
Spain	The procedure is considered of only relative value, and in some instances dangerous. An Order has been published prohibiting Civil Governors of Provinces from imposing it.
America	The procedure is considered to be still in an experimental stage, the experiments carried out having proved in general unfavourable.

MEAT SUPPLY.

The quality of the meat supplied to the Gibraltar public is, on the whole, poor. The average consumption of meat in Gibraltar is about seventy cattle per week. The large majority of the cattle imported into Gibraltar are slaughtered in the Colonial Abbatoir and the meat exported all over Southern Spain. The best of the meat entering the Colony in this way reaches the Spanish consumer while the Gibraltar public, under existing conditions, have to be content with what is left. It does not make matters any better to learn that this meat costs the Spanish consumer less than the poorer quality foisted on to the Gibraltar public.

C. A. MURRAY,

Major, R.A.V.C.,

Veterinary Adviser.

EXAMINATION OF CATTLE ARRIVING FROM MOROCCO, BY THE VETERINARY ADVISER TO THE CITY COUNCIL OF GIBRALTAR (FOOT AND MOUTH DISEASE).

Date.	Number examined.		Number found affected.		How disposed of.	Port of Origin.	Remarks.
	Cattle.	Sheep.	Cattle.	Sheep.			
21/ 3/27	167	56	4	—	Marked for immediate slaughter.	Casablanca.	
do.	84	—	—	—	—	do.	This consignment was intended for Melilla but was not landed there owing to bad weather prevailing.
25/ 3/27	152	6 pigs	64	—	Marked for immediate slaughter.	do.	
28/ 3/27	15	—	4	—	do.	Tangier.	
29/ 3/27	107	—	32	—	do.	Casablanca.	
1/ 4/27	235	80	94	—	do.	do.	
4/ 4/27	24	—	4	—	do.	Tangier.	
8/ 4/27	229	50	57	—	do.	Casablanca.	
9/ 4/27	63	—	12	—	do.	Larache.	
14/ 4/27	244	30	24	—	do.	Casablanca.	
23/ 4/27	342	145	109	—	do.	do.	
29/ 4/27	315	85	80	—	do.	do.	
3/ 5/27	18	—	3	—	do.	Tangier.	
6/ 5/27	222	115	47	—	do.	Casablanca.	
7/ 5/27	108	15	30	—	do.	do.	
12/ 5/27	33	—	—	—	do.	Tangier.	
13/ 5/27	259	82	5	—	do.	Casablanca	
20/ 5/27	186	54	7	—	do.	do.	
22/ 5/27	109	—	2	—	Prohibited from landing.	do.	
23/ 5/27	50	—	—	—	—	Tangier.	
27/ 5/27	322	65	1	—	Marked for immediate slaughter.	Casablanca.	
30/ 5/27	60	—	1	—	do.	Tangier.	
3/ 6/27	255	50	1	—	do.	Casablanca.	
5/ 6/27	110	—	2	—	Prohibited from landing.	do.	
10/ 6/27	244	75	19	—	11 were marked for immediate slaughter and 8 were prohibited from landing.	do.	
13/ 6/27	42	—	—	—	—	Tangier.	
17/ 6/27	33	—	—	—	—	do.	
do.	256	—	6	—	Marked for immediate slaughter.	Casablanca.	
20/ 6/27	25	—	—	—	—	Tangier.	
22/ 6/27	80	—	1	—	Marked for immediate slaughter.	Casablanca.	
24/ 6/27	229	95	1	—	do.	do.	
28/ 6/27	107	—	1	—	do.	Tangier.	
30/ 6/27	115	—	115	—	113 were marked for immediate slaughter and 2 prohibited from landing.	do.	
1/ 7/27	113	—	—	—	—	Casablanca.	
5/ 7/27	112	—	1	—	Marked for immediate slaughter.	do.	
8/ 7/27	235	75	1	—	do.	do.	
10/ 7/27	6	—	—	—	—	Tangier.	
14/ 7/27	110	—	—	—	—	Casablanca.	
15/ 7/27	305	87	3	—	Marked for immediate slaughter.	do.	
18/ 7/27	107	20	—	—	—	do.	
22/ 7/27	265	53	1	—	Marked for immediate slaughter.	do.	
29/ 7/27	109	—	3	—	do.	do.	
5/ 8/27	331	40	3	—	do.	do.	
11/ 8/27	110	—	10	—	Not permitted to land.	do.	
12/ 8/27	269	84	4	—	Marked for immediate slaughter.	do.	
18/ 8/27	100	25	—	—	—	do.	
19/ 8/27	268	65	5	—	Marked for immediate slaughter.	do.	
26/ 8/27	331	87	4	—	do.	do.	
2/ 9/27	362	85	2	—	do.	do.	
7/ 9/27	110	—	1	—	do.	do.	
16/ 9/27	297	70	1	—	do.	do.	
17/ 9/27	110	—	7	—	Prohibited from landing.	do.	
9/ 9/27	224	—	—	—	—	do.	
16/ 9/27	297	70	1	—	Marked for immediate slaughter.	do.	
7/ 9/27	110	—	7	—	Not permitted to land.	do.	
23/ 9/27	160	87	—	—	—	do.	
26/ 9/27	103	—	1	—	Marked for immediate slaughter.	do.	
30/ 9/27	276	157	2	—	do.	do.	
30/ 9/27	110	—	—	—	—	do.	
8/10/27	279	84	—	—	—	do.	
21/10/27	276	50	1	—	Marked for immediate slaughter.	do.	
28/10/27	110	—	—	—	—	Tangier.	
29/10/27	242	112 20 pigs	—	—	—	Casablanca.	
2/11/27	47	—	—	—	—	do.	
	10,874	2,248 26 pigs	784	—			

SUMMARY.

Number examined (21/3/27) to 2/11/27) ... ... 10,784 cattle—2,248 sheep—26 pigs.
Number found affected ... ... 784 cattle.
Number marked for immediate slaughter ... ... 746 cattle.
Number prohibited from landing ... ... 38 cattle.

COMMON LODGING HOUSES.

There are four Common Lodging Houses in Gibraltar.

They have been maintained in good sanitary condition during the year.

No case of infectious disease occurring in them has been brought to notice; there has been no overcrowding, and the Bye-Laws have been strictly observed in all cases.

LIST OF ORDINANCES, BYE-LAWS AND REGULATIONS RELATING TO PUBLIC HEALTH IN FORCE IN GIBRALTAR.

ORDINANCES—

"The Public Health Ordinance, 1907," embodying the following sanitary provisions:—

Sewerage and Drainage.
Sanitary Conveniences.
Scavenging and Cleansing.
Water Supply.
Provisions for the protection of Water.
Regulation of Cellar Dwellings.
Common Lodging Houses.
Nuisances.
Houses let in Lodgings and in separate Tenements.
Offensive Trades.
Unsound Meat, &c., Food and Drugs.
Infectious Diseases—Provisions against Infection.
Prevention of Epidemic Diseases.
Mortuaries.

"The Vaccination Ordinance, 1887," providing for the compulsory vaccination of all children born in Gibraltar within three months after birth, and re-vaccination on attaining the age of 12 years.

"The Tobacco (Chopping) Ordinance, 1922," prohibiting the chopping of tobacco otherwise than by machinery.

"The Midwives' Ordinance, 1907."

"The Quarantine Ordinance, 1895."

"The Diseases of Animals Ordinance, 1925."

BYE-LAWS—

Bye-Laws with respect to Nuisances, 1893.

Bye-Laws with respect to Buildings, 1893.

Bye-Laws for regulating the supply of Brackish Water for Flushing and Cleansing Purposes, 1905.

Bye-Laws for the Control of the Milk Supply, 1913.

Bye-Laws made for the purpose of prescribing and regulating the seizure, detention, &c., of diseased cattle or animals, 1914.

Bye-Laws with respect to Nuisances, 1915.

Bye-Laws made for the prevention of danger arising to public health from the importation, &c., of ice cream, 1915.

Bye-Laws made for regulating the supply of water to water vendors and other persons, 1918,

Bye-Laws made for the prevention of danger arising to public health from the importation, preparation, &c., of food and drink intended for human consumption, 1918.

FOOD.

SUPERVISION OF FOOD SUPPLIES.

MILK SUPPLY.

Details of the milk supply of Gibraltar were given in the Annual Report for 1926 and very little change has since taken place.

Only a very small part (15%) of the milk consumed in Gibraltar is produced in the Colony. The bulk of the supply is derived from outside from sources over which the Council have no control.

This imported supply must be boiled in Gibraltar before retail (1907).

FOOD INSPECTION.

The general duties of food inspection are carried out by the Sanitary Inspectors, who also make inspections of premises where food is sold, stored or prepared, and also act as Inspectors, Sale of Food and Drugs, "Public Health Ordinance, 1907."

Bakehouses all conform to the bye-laws, but in addition to bread baked locally, about 750 lbs. of Spanish bread is imported daily. This is a custom of many years and the bread has been found to be quite wholesome.

The manufacture or sale of ice cream is carried on in three premises. Regular inspections of these premises are carried out.

Premises where foodstuffs of various kinds were sold, also received routine inspections.

Hotel and Cafe kitchens and restaurants have a good deal of attention and it is found suggestions for improvement are favourably received and adopted.

In carrying out these inspections of food premises the co-operation of the various traders has been of great assistance.

HAWKERS.

The number of hawkers in Gibraltar has increased enormously in recent years, and are now estimated at between 400 and 500, of whom only about half a dozen are Gibraltarians, a dozen Moors and the remainder Spaniards.

The number varies considerably with the state of employment and where there is much unemployment there is a consequent large increase in the number of hawkers.

Their control is difficult, but they are kept under surveillance by the Sanitary Inspectors as far as possible.

The hawking of meat in the streets is, i consider, not without danger to public health and should be prohibited. I have made recommendations regarding this.

MARKETS AND SLAUGHTER HOUSES.

The Markets and Slaughter Houses are under the Colonial Government and are in charge of the Supervisor of Markets.

It was pointed out in the Report of 1926 that the markets buildings were somewhat dilapidated and some provision has now been made in estimates for their re-construction and renovation.

The Slaughter Houses are also under control of the Supervisor of Markets.

A considerable amount of slaughtering is carried on for Spain.

The Slaughter Houses and surroundings when visited during the year were found to be clean and in a satisfactory sanitary condition.

The number of animals slaughtered during the year was as follows:—

Cattle	14,931
Sheep	4,518
Pigs	1,349

During the year the opinion of the Inspector of Food was requisitioned on one hundred and fourteen occasions.

The following table shows the causes for which carcases or portion of carcases were condemned as unfit for human consumption, and ordered to be destroyed :—

Disease.	*In whole.*	*In part.*
	CATTLE.	
Tapeworm	42	 106
Tuberculosis ...	1	... ... —
Cowpox	4	... ... —
Fever	1	 2
	SHEEP.	
Emaciation	2	... ... —
	PIGS.	
Tapeworm	2	... ... —
Emaciation	1	... ... —

FOOT AND MOUTH DISEASE.

The following is a list of the parts of carcases destroyed :—

Heads (complete)	320
Gums and Muzzles	1,593
Tongues	1,586
Feet	7,640
Paunches	903

WORK IN CONNECTION WITH THE PORT MEDICAL DEPARTMENT.

The port of Gibraltar being in direct communication with ports all over the world runs considerable danger of the importation of infectious disease, and vessels arrive occasionally from infected ports.

Vessels arrived from and departed to the following countries during the year:—

United Kingdom, Australia, Barbadoes, Canada, Cyprus, Egypt, India, Jamaica, Malta, British West Africa, West Indies, Newfoundland, British South Africa, British Straits Settlements, Algeria, Argentine, Azores, Belgium, Brazil, Canary Islands, Cuba, Chili, China, Denmark, Finland, France, French West Africa, Germany, Greece, Holland, Dutch East Indies, Dutch West Indies, Iceland, Italy, Japan, Mexico, Monaco, Morocco, Norway, Palestine, Persia, Philippine Islands, Portugal, Portuguese East Africa, Rumania, Russia, Spain, Sweden, Straits Settlements, Tunis, Turkey, United States of America.

The Regular Steamship Services calling at Gibraltar are:—

REGULAR STEAMSHIP SERVICES CALLING AT GIBRALTAR.

Line.	*Destinations.*	*Passenger or cargo.*	*Frequency of calls.*
Peninsular and Oriental Steam Navigation Coy., Ltd.	1. London, India	Both	Weekly.
	2. Australia	do.	Fortnightly.
Orient Line	London, Australia	do,	do.
Nippon Yusen Kaisha	London, Japan	do.	do.
Westcott and Laurance Line	London, Algiers, Malta	do.	do.
Moss Line...	Algiers, Malta...	Cargo	do.
Ellerman Line	Malta, Alexandria	Both	do.
Mac Andrews'-Hall Lines	London, Lisbon, Cadiz, Seville, Huelva	Cargo	do.
Union Castle Mail Steamship Coy. ...	Mediterranean and East Africa	Both	Occasional.
Power Steamship Coy.	Morocco	do.	Fortnightly.
Anchor Line	Liverpool, Port Said, Bombay	do.	do.
Cunard Line	Malta, Greece, Turkey, Black Sea	Cargo	Monthly.
France-Amerique	Rio de Janeiro, Santos, Montevideo, Buenos Ayres	Both	do.
Royal Netherlands Steamship Coy. ...	Canary Islands, South America, Malta, Algiers, Greece	do.	Fortnightly.
Lloyd Sabaudo	New York, Mediterranean	do.	do.
Oldenburg-Portugiesische	Hamburg, Antwerp, Morocco	do.	do.
The Algeciras Ferry Boat Coy. ...	Algeciras, Gibraltar	do.	Several times daily.
Bland Line	Morocco, Algiers and Spanish Ports	do.	Very frequent.
Societa Anonima di Navigazione Neptunia.	Genoa, Marseilles, Barcelona, Malaga, Gibraltar, Lisbon	Cargo	Monthly.
Hijos de Ramon A. Ramos	Spanish Levant Ports...	Both	Very frequent.
American-Levant Line	New York, Egypt, Levant	Cargo	By-monthly.

CHARACTER OF TRADE.—Gibraltar is a port of call for a large number of passenger service steamships, and at certain seasons of the year tourist steamships call almost daily. There is also a large coastal trade with Morocco.

Gibraltar is a free port; there being no manufactories or local industries there are no exports.

Imports consist of foodstuffs and manufactured articles.

There is a large amount of merchandise transhipped at this port for Morocco and other places.

PRECAUTIONS ADOPTED TO PREVENT THE IMPORTATION OF INFECTIOUS DISEASES.—Frequent consultations were held during the year between the Captain of the Port, the Port Surgeon and the Medical Officer of Health in connection with measures to be adopted regarding the arrival of shipping from infected ports.

The general outline of the procedure adopted in carrying out the medical inspection of ships is as follows:—

A ship on entering the bay is met by the Boarding Officer. If it is found that it has come from an infected port and is still within the quarantine period, or has a suspected case of infectious disease on board, or not carrying a ship's surgeon, has any illness amongst the crew, it is placed in strict quarantine pending the visit of the Port Surgeon. Depending on his recommendation the ship either remains in quarantine or is admitted to pratique. Should a ship arrive in the Bay having a case of Plague, Typhus, Cholera or Yellow Fever on board, she is placed in strict quarantine, all communication with the shore or other ships being prevented by a patrol of Health Guards and Marine Police, the instructions issued by the Board of Health being carried out as far as applicable in each individual case. Other cases of infectious disease may be landed on the recommendation of the Port Surgeon, the cabins and bedding being disinfected after their removal.

Disinfection of the holds of ships is not undertaken. There is, however, a "Clayton" machine in Gibraltar which is available in cases of emergency.

All cases from the Bay requiring treatment in hospital are removed in the Ambulance Barge, and on being landed, conveyed to hospital in the City Council's Motor Ambulance.

INFECTIOUS CASES.—All cases of infectious disease landed from ships in the Bay are removed in the 'special' ambulance

to the Isolation Block of the Colonial Hospital, small pox cases being taken in a special ambulance to the Isolation Hospital, North Front.

When landing cases every care is taken to prevent them coming into contact with the public.

Forty-eight cases were removed in the ambulance during the year.

Wireless information from ships coming into Gibraltar and having cases of infectious disease on board is of great value in facilitating the making of adequate arrangements.

DISINFECTING AND CLEANSING.—Articles requiring disinfection are removed by special conveyance to the City Council's Disinfecting Station, North Front, where a steam disinfector is provided for carrying out this work.

AMBULANCE BARGE.—An Ambulance Barge is provided for removing cases from ships in the Bay.

It is interesting to note that the International Sanitary Convention has recently been revised, and in dealing with major infectious diseases on board ship the tendency, in the light of modern experience, is towards minimum restriction of shipping movements as is compatible with effective control. The wisdom of enforcing long periods of quarantine is deprecated.

The aim of the Convention is, so far as local conditions permit, International uniformity in port health work.

Gibraltar has not hitherto been a signatory to the Convention, but the matter is now under consideration.

The regulations dealing with quarantine for Gibraltar, which were revised in 1926, are as follows:—

Rule 1.—Vessels arriving in Gibraltar in which there is or has been a case on board of plague, cholera or yellow fever within six days immediately preceding the date of arrival shall be kept in quarantine and subjected to the following measures until six days shall have elapsed since the death or removal of the last case of plague, cholera or yellow fever, after which the vessel shall be subjected to the measures provided in Rule 2 hereunder:—

1. Medical inspection on arrival.
2. No traffic of any kind shall be allowed with such vessel other than that sanctioned for the supply of

water, coal and provisions, and no barge or craft to be alongside for one hour before sunset to one hour after sunrise, and all gangways to be up for the same period.

3. All barges taken alongside for any purpose to be disinfected in situ under the supervision of the Port Surgeon who shall consult with the Medical Officer of Health as to measures to be adopted.

4. In the case of yellow fever and plague, the ship to be moored at least 200 metres from the shore and the nearest hulk or ship.

Rule 2.—Vessels arriving at Gibraltar in which there has been a case of plague, cholera or yellow fever at the time of departure or during the voyage, but no fresh case within six days, shall be kept in quarantine and subjected to the following measures for a period of six days after arrival, after which, if no fresh case of plague, cholera or yellow fever shall have occurred on board, she shall be admitted to free pratique :—

1. Medical inspection on arrival.

2. The crew not to be allowed to land.

3. The question of loading and discharging cargo or taking coal with shore labour shall be decided by the Captain of the Port acting in concert with the Colonial Secretary, Port Surgeon and Medical Officer of Health.

4. Passengers on a recognised passenger ship whose port of disembarkation is Gibraltar shall be allowed to land and proceed on their journey immediately, but those remaining in Gibraltar must be placed under strict surveillance and medical inspection for six days from the date of arrival of the ship, and such persons shall be liable to be placed in isolation.

Rule 3.—Vessels arriving from an infected place within six days notwithstanding there shall have been no death from or case of plague, cholera or yellow fever on board either before departure or during the voyage or on arrival, shall be placed in quarantine on arrival, and subjected to such measures as shall be decided upon by the Colonial Secretary, Port Authorities and Medical Officer of Health acting in concert.

Rule 4.—In the above Rules, letters and correspondence, printed matter, books, newspapers, business documents, &c. (not including parcels conveyed by post), shall not be subject

to restrictions. Parcels conveyed by post will be treated as cargo and subjected to the restrictions regarding cargo provided in these Rules.

Rule 5.—The supply of water, coal and provisions in Rule 1 (2), and the loading and discharging of cargo in Rule 2 (3) shall be carried out under the control of the Port Authorities who shall take all measures necessary to prevent the staff on this duty from becoming infected. They may be subjected to observation or surveillance for a period not exceeding six days from the time they have ceased to perform the work.

Rule 6.—The total destruction of rats on board a ship placed in quarantine on account of plague may be required before a ship is allowed to effect direct communication with the shore after expiry of quarantine period.

Deratisation must in all cases be carried out under the supervision of the Port Authorities.

Rule 7.—In all cases in these Rules where medical surveillance and inspection are mentioned, such surveillance and inspection shall be carried out by a Medical Officer appointed by His Excellency the Governor.

Rule 8.—Vessels arriving in Gibraltar in which there have been cases of a disease other than those mentioned in these Rules shall be dealt with as in Rule 3.

NOTES ON MAJOR INFECTIOUS DISEASES—

Cholera is now practically confined to the East, and there has been no case in Gibraltar since 1865.

The chief ports in the world reported as infected with Cholera during the year are shown on the accompanying table.

Yellow Fever is endemic on the West Coast of Africa and is tending to spread northwards. It is of frequent occurrence in Dakar which is in direct shipping communication with Gibraltar.

The last Yellow Fever epidemic occurred in Gibraltar in 1828.

The chief ports, nearly all on the West African Coast, reported as infected with Yellow Fever during the year are shown on the accompanying table.

Plague is endemic in Morocco and the Canary Islands, and outbreaks of pneumonic plague have occurred recently at Oran, Isletta and other places.

In order to prevent the introduction of Plague into Gibraltar constant vigilance is required.

The chief ports infected with plague during 1927 are given in the accompanying table.

Small Pox is endemic in the neighbouring countries, but Gibraltar is so well protected by vaccination that there is little or no danger from this disease.

Typhus is endemic in Morocco and the possibility of its introduction is sometimes a source of danger to the port.

RAT DESTRUCTION.—A constant campaign against rats in the Port has been carried out throughout the year. In order to realise the importance of this it must be borne in mind that imported rats are potential carriers of plague.

The provision of rat guards on vessels is rigidly enforced.

VENEREAL DISEASE.—Gratuitous treatment of merchant seamen of all nationalities is provided at the Colonial Hospital. Leaflets setting forth these facilities are given as necessary to vessels entering the port.

Laboratory work in such cases is performed in the City Council's laboratories free of cost.

SHOWING INFECTED PORTS AND THEIR TIME-RELATION TO GIBRALTAR.

PLAGUE—(incubation period 2-8 days).

PORTS.	Duration in days of journey by steamship. Calculated on a speed of 10 knots per hour, plus 24 hrs. for transit of Suez or Panama Canals.
Europe :—	
Lisbon	2
Athens	6
Patras	6
Mityleni	7
Piræus	6
Galata	7
Constantinople	8
Laguna	3
Ponta (Azores)	4
Asia :—	
Beyrout	9
Bombay	18 22
Rangoon	29
Colombo	20 24
Singapore	26 30
Bangkok	34
Saigon	33
Africa :—	
Phillippeville	3
Oran	1
Algiers	2
Suez	10
Lagos	13
Dakar	7
Port Louis	25
Alexandria	8
Port Said (via Marseilles)	9 8
Mombasa	21
Port Alexander	17
Bona	3
Las Palmas...	3
America :—	
Guayaquil	23
Callao	25
Lima...	25
Rio de Janeiro	18

The number of days in red is that occupied by mail steamers which run to schedule time.

NOTE.—The distance by sea from Marseilles to Gibraltar is approximately 700 miles and the time taken by mail steamers is 2 days and by ordinary steamers 3 days.

SHOWING INFECTED PORTS AND THEIR TIME-RELATION TO GIBRALTAR.

CHOLERA—(incubation period 1-6 days).

PORTS.	Duration in days of journey by steamship. Calculated on a speed of 10 knots per hour, plus 24 hrs. for transit of Suez or Panama Canals.	
Asia :—		
Amarah		24
Basra		24
Abadan		24
Mohammerah		24
Ahwaz		24
Bombay	18	22
Madras		26
Calcutta		29
Rangoon		29
Tuticorin		23
Singapore		30
Batavia		31
Bangkok		34
Saigon		33
Amoy		37
Canton		36
Shangai	35	39
Nanking		40
Karachi		21
Hong Kong...	31	36
Manilla		36
Pondicherry		26
Jaffa		9
Osaka		47

The number of days in red is that occupied by mail steamers which run to schedule time.

SHOWING INFECTED PORTS AND THEIR TIME-RELATION TO GIBRALTAR.

YELLOW FEVER—(incubation period 3-6 days).

PORTS.	Duration in days of journey by steamship. Calculated on a speed of 10 knots per hour, plus 24 hours for transit of Suez or Panama Canals.
Africa :—	
Lagos	13
Dakar	7
Accra	12
Cape Coast	12
America :—	
Tampa	17

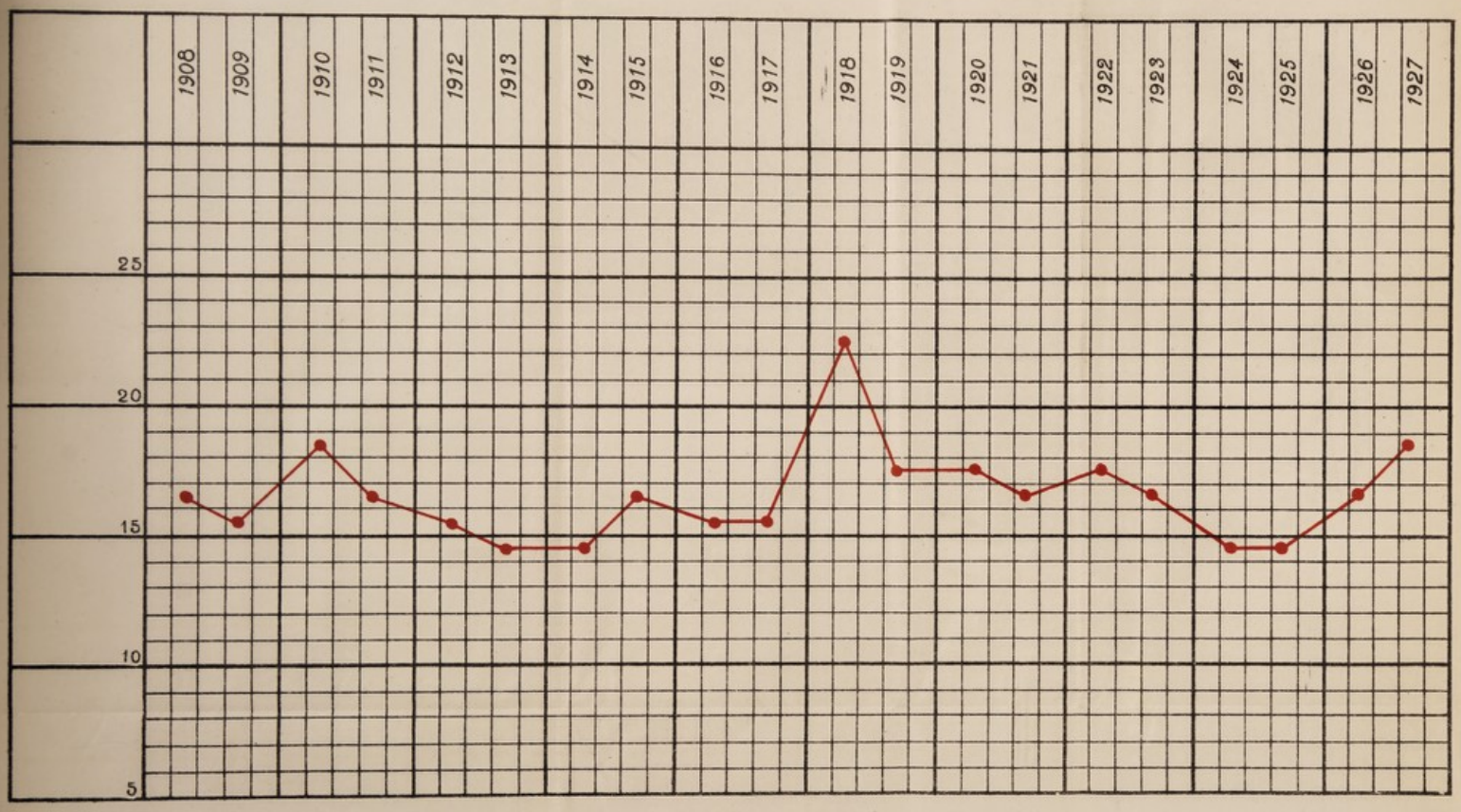
*AMOUNT OF SHIPPING ENTERING THE PORT OF GIBRALTAR DURING THE YEAR 1927.

		Number.	Net Tonnage.	Number inspected.	Number left in quarantine.	Number admitted to Pratique.
British	Steam	1,423	3,847,756	17	2	15
	Sailing	28	4,096	—	—	—
	Total British	1,451	3,851,852	17	2	15
Foreign	Steam	2,321	2,754,345	30	6	24
	Sailing	657	18,007	1	—	1
	Total Foreign	2,978	2,772,352	31	6	25
	Total British and Foreign...	4,429	6,624,204	48	8	40

*Information kindly supplied by the Captain of the Port.

GENERAL DEATH RATE PER 1,000 OF TOTAL CIVIL POPULATION, GIBRALTAR, FOR THE DECENNIAL PERIODS

1908-1917 and 1918-1927

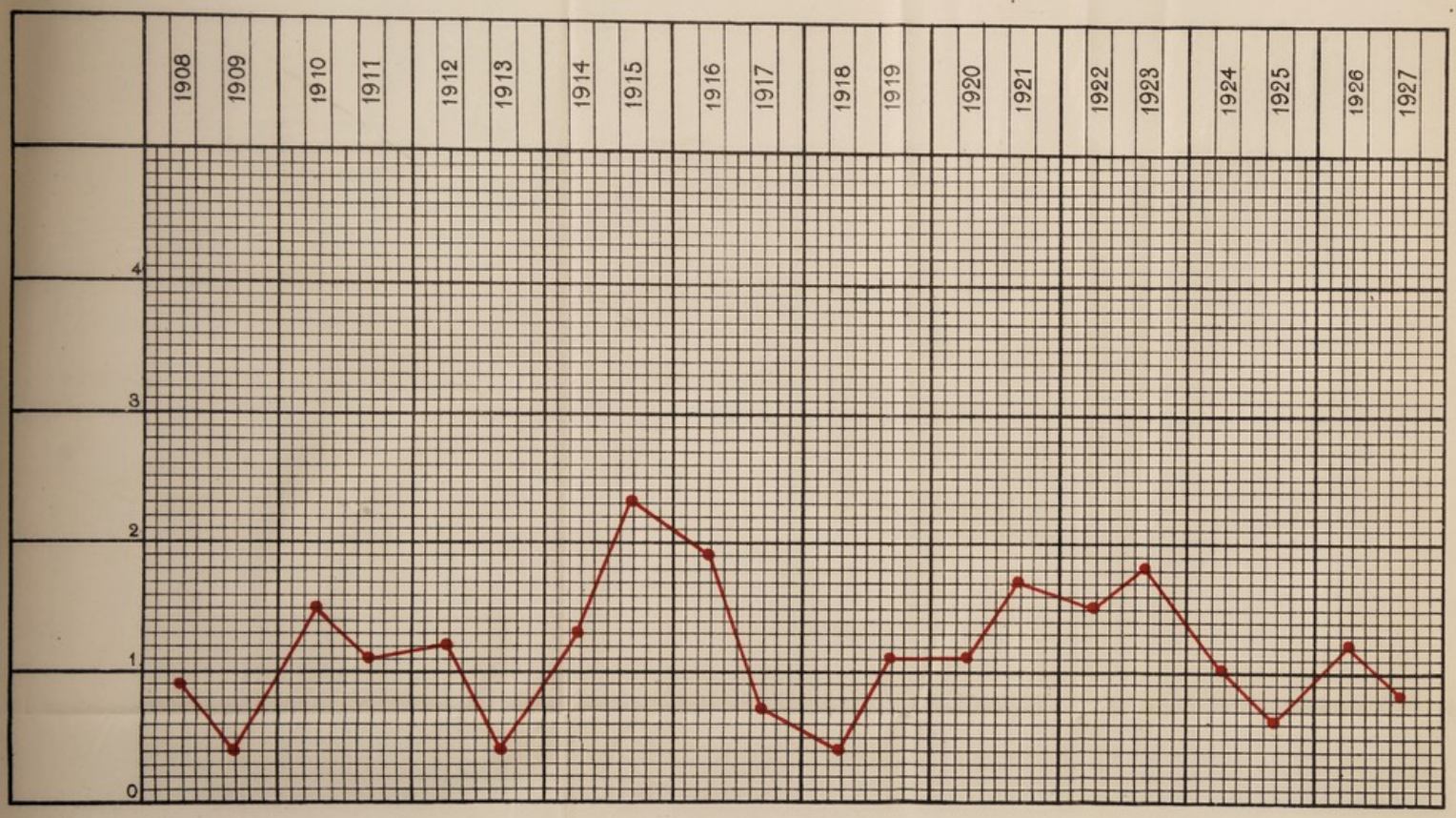


Average	1908-1912	16.28	1918-1922	18.39
	1913-1917	15.47	1923-1927	16.37
	1908-1917	15.88	1918-1927	17.38

1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1921
1921
4
3
2
1

ZYMOTIC MORTALITY PER 1,000 OF TOTAL CIVIL POPULATION, GIBRALTAR, FOR THE DECENNIAL PERIODS

1908-1917 and 1918-1927

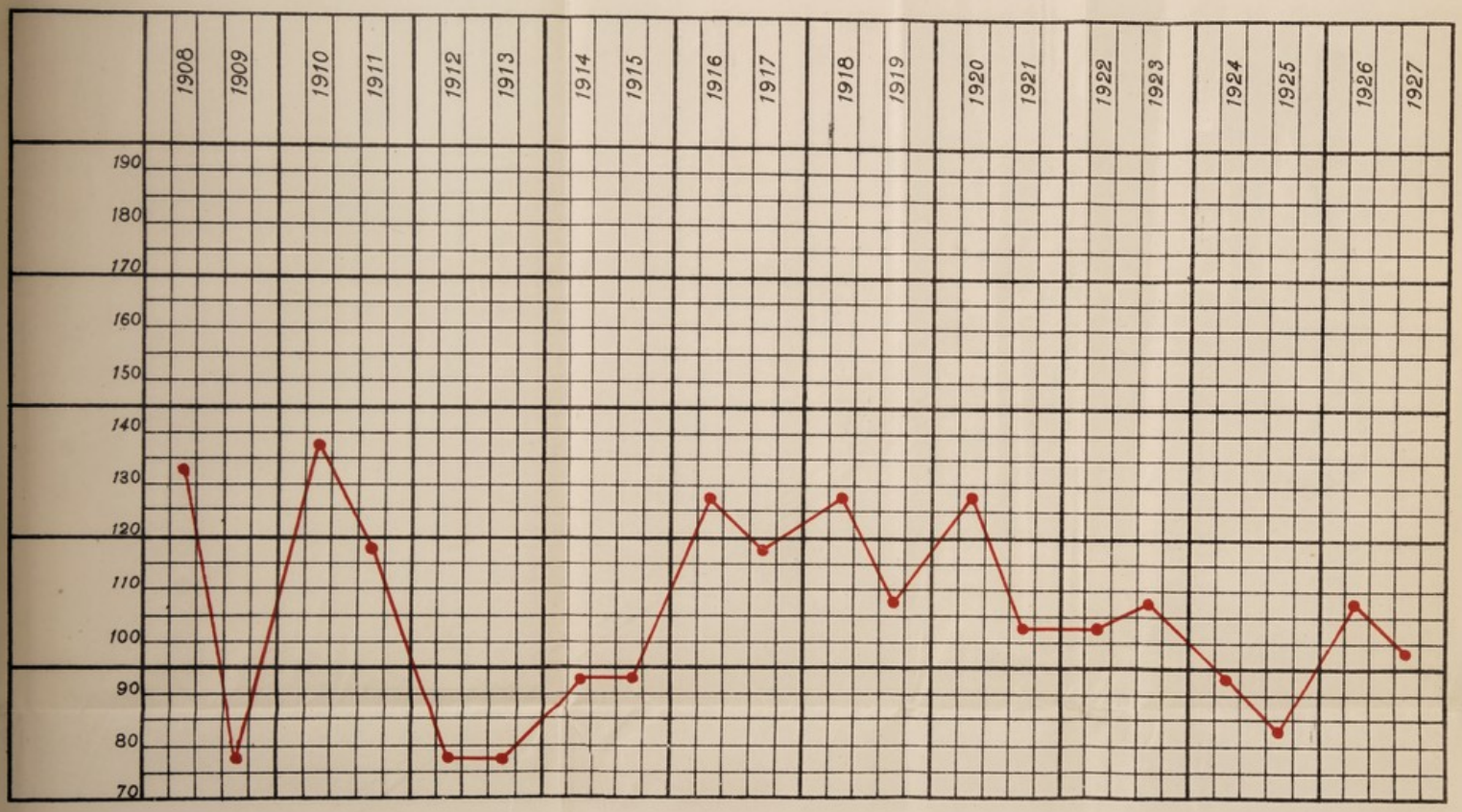


Average	1908-1912	1.05	1918-1922	1.2
	1913-1917	1.27	1923-1927	1.1
	1908-1917	1.16	1918-1927	1.1

1913
1915
1916
1917
1910
1909
1908
1921
4
3
2
1

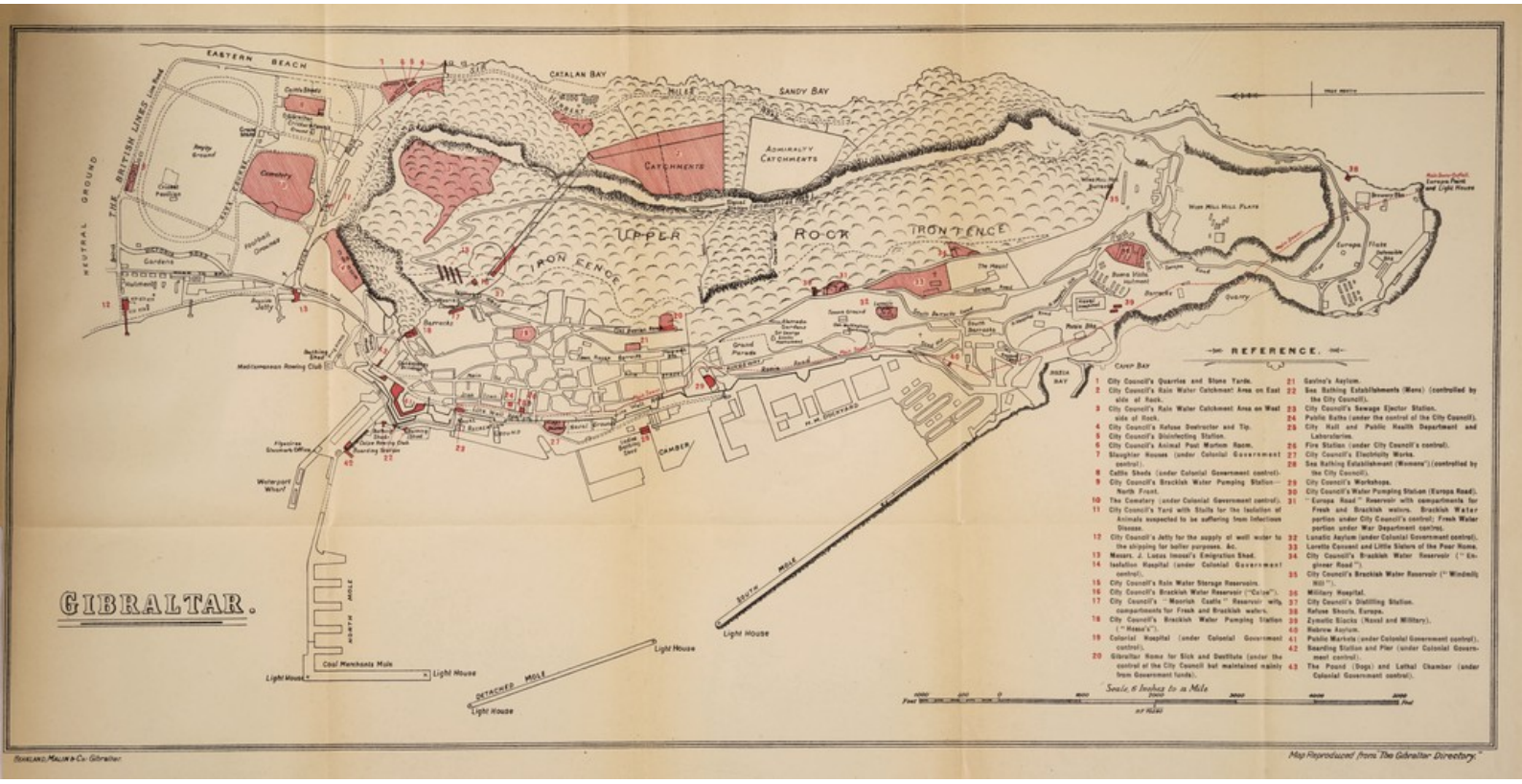
INFANTILE MORTALITY PER 1,000 BIRTHS FOR THE DECENNIAL PERIODS

1908-1917 and 1918-1927



Average	1908-1912	107.5	1918-1922	113.2
	1913-1917	99.2	1923-1927	98.1
	1908-1917	103.3	1918-1927	105.7

190
180
170
160
150
140
130
120
110
100
90
1908
1909
1910
1911
1912
1913
1927



Rowland Malin & Co. Gibraltar

Map Reproduced from "The Gibraltar Directory."