

Report on the sanitary administration of the Punjab and proceedings of the Sanitary Board for the year ... and the report on sanitary works for.

Contributors

Punjab (India). Sanitary Board.

Publication/Creation

Lahore : Government Printing, [1902]

Persistent URL

<https://wellcomecollection.org/works/ewud3s3m>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



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

REPORT
ON THE
SANITARY ADMINISTRATION
OF THE PUNJAB

AND
PROCEEDINGS OF THE SANITARY BOARD
FOR THE YEAR 1902,

BY
LIEUT.-COLONEL C. J. BAMBER, I.M.S., D.P.H., CAMB.,
Sanitary Commissioner, Punjab.

AND
THE REPORT ON SANITARY WORKS
FOR 1902.

BY
C. E. V. GOUMENT, ESQUIRE, A.M.I.C.E.,
Offg. Sanitary Engineer, Punjab.

Price Re. 1-0-0 or 1s. 6d.



Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Sole Contractors for Printing to the Punjab Government.

1903.



22501423304

PUNJAB SANITARY REPORT FOR 1902.

Agents for the sale of Punjab Government Publications.

IN LONDON.

E. A. ARNOLD, 37, Bedford Street, Strand,
W. C.
CONSTABLE & Co., 2, Whitehall Gardens,
S. W.
SAMPSON LOW, MARSTON & Co., St. Dunston's
House, Fetter Lane, E. C.
P. S. KING & SON, 9, Bridge Street,
Westminster, S. W.
LUZAC & Co., 46, Great Russel Street,
W. C.
KEGAN PAUL, TRENCH, TRÜBNER & Co.,
Charing Cross Road, W. C.
B. QUARITCH, 15, Piccadilly, W.

ON THE CONTINENT.

FRIEDLANDER & SOHN, 11, Carlstrasse,
Berlin.
OTTO HARRASSOWITZ, Leipzig.
KARL W. HIERSEMANN, Leipzig.
ERNEST LEROUX, 28, Rue Bonaparte, Paris.
MARTINUS NIJHOFF, The Hague.

IN INDIA.

THACKER, SPINK & Co., Calcutta & Simla.
NEWMAN & Co., Calcutta.
THACKER & Co., Bombay.
HIGGINBOTHAM & Co., Madras.
V. KALYANARAM IYER & Co., 189,
Esplanade Row, Madras.
SUPERINTENDENT, AMERICAN BAPTIST MISSION
PRESS, Rangoon.
A. CHAND & Co., Imperial Book Depot
Office, Delhi.
GULAB SINGH & SONS, Mufid-i-'Am Press,
Lahore.
S. MUMTAZ ALI & SON, Rafah-i-'Am Press,
Lahore [for Vernacular publications
only].

REPORT
ON THE
SANITARY ADMINISTRATION
OF THE PUNJAB

AND
PROCEEDINGS OF THE SANITARY BOARD
FOR THE YEAR 1902,

BY
LIEUT.-COLONEL C. J. BAMBER, I.M.S., D.P.H., CAMB.,
Sanitary Commissioner, Punjab.

AND
THE REPORT ON SANITARY WORKS
FOR 1902.

BY
C. E. V. GOUMENT, ESQUIRE, A.M.I.C.E.,
Offg. Sanitary Engineer, Punjab.



Printed by:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Sole Contractors for Printing to the Punjab Government.

1903.

-42982021

WELLCOME

LIBRARY

WELLCOME LIBRARY

WELLCOME LIBRARY

WELL

WELLCOME LIBRARY

WELLCOME
LIBRARY

+

Ann Rep

WA28

.J14

198

1902

Section I.—Meteorology.

See Remarks in paragraph 13.

Section II.—European Army.

No Remarks.

Section III.—Native Army.

No Remarks.

Section IV.—Jails.

No Remarks.

Please substitute the following in the Annual Report of the Sanitary Engineer to Government, Punjab, for the year 1902. printed as Appendix B to the Sanitary Administration Report of the Punjab for 1902.

In the first line of paragraph 6, *for* 1901 *substitute* "1900."

In the second line of paragraph 6, *for* 10,000 *substitute* "36,000."

For the last five lines of paragraph 6 on the first page of the report *substitute* the following:—

"It was matured for the first 21 days with a weak mixture of sewage and water. A mixture of 60 parts water and one sewage was used for one week and a mixture of 30 water and one sewage for two weeks. After this, the dilution was 20 gallons of water to one of pipe sewage (1 gallon of pipe sewage being the approximate yield per head of population) and this rate was by degrees decreased till a strength of 17 to 1 was reached on the 18th September.

READ—

The Report of the Sanitary Administration of the Punjab and the Proceedings of the Sanitary Board for the year 1902 by Lieutenant-Colonel C. J. Bamber, I.M.S., Sanitary Commissioner, Punjab, and the Report on Sanitary Works for 1902 by Mr. C. E. V. Goument, A.M.I.C.E., Officiating Sanitary Engineer, Punjab.

REMARKS.—The striking feature of the statistics incorporated in the Sanitary Commissioner's Report for 1902 is the remarkable effect of plague on the Provincial death-rate. Except for plague the year was a fairly healthy one. The Province remained practically free from cholera, to which only 371 deaths were due. Small-pox outbreaks of any severity were confined to the limits of restricted localities, and, though the Provincial death-rate from this disease increased, small-pox carried off only 11,629 persons in all: the value of vaccination as a prophylactic measure is fully apparent from the gratifying figures set forth in paragraph 30 of the Sanitary Commissioner's Report, and the necessity for it from the unsatisfactory record in paragraph 29. The year was a favourable one for fevers, and the total fever mortality amounted only to 473,352 persons (including a number of deaths from cerebro-spinal fever) as compared with 508,035 in the previous year; the facilities for placing quinine within the reach of the people were improved by the transfer of the arrangements to the Post Office, though good opportunities did not offer for experiments in the destruction of mosquitoes and other measures intended for the prevention of malaria. In comparison with 1901 there was a considerable fall in the number of deaths recorded from dysentery and diarrhoea, and there is no reason to believe that respiratory diseases were more fatal. The number, however, of plague deaths, according to the Sanitary Commissioner's figures, rose from 14,959 in 1901 to 171,302 in 1902, and it is this increase alone which accounts for the rise of the Provincial death-rate to 44·11 per mille from 36·13 per mille in 1901 and a mean death-rate during the past five years of 33·71 per mille. The Provincial mortality rate from plague was 8·5 per mille, and so important a factor was this disease in 1902 that it accounted for the enormous death-rate in Ludhiána (103·9 per mille), Siálkot (65·7 per mille), and Ambala (65·6 per mille). The last two rates are, it is true, surpassed by some recorded in 1900, when famine, fever and cholera combined to furnish rates like 96·4 per mille in Hissar, 86·8 per mille in Ferozepore, and 73·7 in Karnál. But a record of 103·9 per mille for a district is probably unprecedented, and considered with the total death-rates of individual towns which suffered from plague, such as Khanna 177 per mille, Jagraon 153 per mille, Jámke 143 per mille, Ráekot 137 per mille, Máchiwára 133 per mille, and Rúpar 112 per mille, it affords striking evidence of the terrible effects of plague and the imperative necessity of adopting every means possible for checking its ravages.

2. It is to be noted that at present two sets of statistics for plague are compiled, one by the Sanitary Commissioner and the other by the Chief Plague Medical Officer. The former depends on the ordinary reporting agency of chaukidárs; the latter derives his figures from reports specially submitted by Patwáris. An examination of the two sets of statistics discloses discrepancies with regard to the Provincial totals for different months and the annual totals for different districts. With regard to the former discrepancies, however, the Chief Plague Medical Officer has recorded a note that they "are chiefly accounted for by the circumstance that the reporting of deaths by chaukidárs is not as prompt as the reporting by Patwáris, and that therefore the mortality statistics recorded by these two agencies do not refer to exactly the same periods. This will be made clear by a reference to the figures for March and April, thus —

	March.	April.	Total.
Sanitary Commissioner ...	47,956	52,956	100,912
Chief Plague Medical Officer...	51,945	48,840	100,785
Difference (Chief Plague Medical Officer),	+ 3,989	- 4,116	- 127

It will be seen that in spite of very considerable differences for the separate months, the total figures for the two months differ by only 127." Considering the probable future conditions of plague administration in the Punjab, delay in bringing deaths upon the record is of little practical importance, except in so far as it may render difficult the comparison of monthly figures with the figures for previous months compiled by the Chief Plague Medical Officer. With regard to the differences in annual totals for different districts, it is to be noted that, according to the returns of the Sanitary Commissioner and the Chief Plague Medical Officer taken together, there were during 1902 plague deaths in 23 districts in all. But of these districts, 5, with 19 deaths, do not appear in the Chief Plague Medical Officer's returns and 1, with 1 death, does not appear in the Sanitary Commissioner's returns. In districts with such few deaths as are here in question local enquiry can readily be made for the verification of plague deaths reported by *chaukidárs*, and necessary corrections can be made in the Sanitary Commissioner's figures. Seventeen districts appear in both sets of returns, and with regard to 15 of these the Chief Plague Medical Officer's figures are greater than those of the Sanitary Commissioner, while with regard to 2 they are less. The percentage by which the Chief Plague Medical Officer's figures are greater is largest in the cases of districts which were only slightly infected and in no one of which was the total number of deaths according to the Chief Plague Medical Officer more than 250 in the year. In the 10 more severely infected districts, if the amount of difference between the two sets of figures is expressed as a percentage of the Sanitary Commissioner's totals, the Chief Plague Medical Officer's figures are found to be less than the Sanitary Commissioner's by 15·8 per cent. (= 1,615) and 10·5 per cent. (= 1,542) in Lahore and Gurdáspur respectively, and greater in the other 5 districts by from 1·1 per cent. (= 50 in Ludhiána) to 10·4 per cent. (= 2,944 in Siálkot), and 14·6 per cent. (= 555 in Gujranwála). The 10 worst infected districts appear by the Sanitary Commissioner's figures in the same order as regards severity of infection as they do by the Chief Plague Medical Officer's figures, and practically the same percentage of the total number of deaths that occurred in these 10 districts is ascribed to each by both sets of statistics. In their totals for the Province both sets agree fairly well, for the Sanitary Commissioner records in all 171,302 deaths and the Chief Plague Medical Officer records 175,645, or 2·5 per cent. more. Neither set of statistics can claim to be quite accurate, and the reports of cases which are made by *Patwáris* are even more untrustworthy than their reports of deaths. Both sets of statistics are vitiated by the fact that deaths from other causes, chiefly fever, are often recorded as plague deaths, and that deaths from plague are not uncommonly ascribed to other causes. But it is clear that the Sanitary Commissioner's figures are accurate enough for all practical purposes, except in slightly infected places, where all plague statistics are peculiarly liable to error and where special arrangements to collect correct information can be made. In the circumstances it is a matter for consideration whether we should not depend for plague statistics ordinarily on the *chaukidár* and relieve the *Patwári* of the extra burden which their reporting has cast upon him.

3 Other matters connected with plague will be dealt with separately, but the remarkable fact may be noticed here that in the Punjab the larger towns have hitherto escaped severe outbreaks. This fact is brought out both by the statistics compiled by the Sanitary Commissioner and also by those compiled by the Chief Plague Medical Officer. Taking the Sanitary Commissioner's figures as approximately correct, we find that while 155,449 deaths from plague occurred in rural areas, giving a death-rate of 8·5 per mille on the rural population, only 15,853 deaths occurred in towns, giving a death-rate from plague of 7·97 per mille of the urban population of the Province. During the year plague deaths were recorded in 75 towns, and in 27 of these, or 36 per cent. (including 3 of the largest towns in question, *viz.* Delhi and Mooltan, in which the infection did not take root, and Lahore, which was regularly infected), the plague death-rate was under 1 per mille of the population; in 7 towns, or 9·3 per cent. (including Amritsar), it was between 1 and 5 per mille; and also in 9 towns (including Siálkot and Jullundur) it was between 10 and 20 per mille. The

highest urban plague death-rates were recorded in small towns, *viz.* 140 per mille in Khanna (population 3,838), 115 per mille in Jámke (population 4,215), 111 per mille in Jagraon (population 18,760), 98·6 per mille in Máchiwára (population 5,588), 92·9 per mille in Ráekot (population 10,131), and 90·46 in Rúpar (population 8,888). There were in all 34 towns with a death-rate from plague of over 10 per mille, but of these none had 50,000 inhabitants except Ludhiána, and only 3 had between 20,000 and 30,000, while 7 had between 10,000 and 20,000, 15 between 5,000 and 10,000, and 8 under 5,000.

4. The large increase, 8·4 per 1,000, in the birth-rate compared with that for 1901 is noteworthy, although comparison is being made with a year in which the conditions were unfavourable to a high birth-rate. The Sanitary Commissioner, in paragraph 2 of his report for 1901, accounted for the low birth-rate of that year by saying that "owing principally to the extreme unhealthiness of the last four months of 1900 there were fewer conceptions in that period, and consequently there was a smaller number of births registered in the year 1901." This theory, although generally accepted, is not fully borne out by the record of 1902, for a rise in the birth-rate for 1902 took place in every district in the Province including Ludhiána which suffered so terribly from plague. Much of the sickness which accounts for the abnormally high death-rates in Ludhiána, Siálkot, Ambala, Jullundur, Gurdáspur, Lahore, and Hoshiárpur must have occurred in the early part of the year 1902, but still it had no appreciable effect on births.

5. The results of the Sanitary Commissioner's investigation as to the extraordinary fluctuations of birth-rates are interesting. The calculation, however, of rates during an inter-censal period upon the figures of the last census would not very materially affect the question for two or three years after the census. Yet we find the fluctuations in 1901 and 1902 very considerable indeed, and even if we allow that widespread sickness, such as an epidemic of malarial fever, does affect the rate to perhaps the greatest degree, still defective registration must be held to play almost an equal part in fluctuating records.

6. In the second part of paragraph 15 of his Report the Sanitary Commissioner has set forth figures indicating an abnormally high death-rate in 1902 among women between the ages of 10 and 15. These figures are of interest, but will be more so in considering how the birth-rate of 1903 is affected. If, indeed, the Sanitary Commissioner has any good grounds for assigning, even as a probability, the high death-rate in question to the injurious effects of premature maternity, the statistics would disclose a very sad state of things. It, however, appears more probable that the extraordinary female mortality in the age period mentioned is accounted for by plague rather than by the reason put forward by Lieutenant-Colonel Bamber.

7. The Lieutenant-Governor has considered the special report on the death-rates of Hindús and Muhammadans in different districts, to which the Sanitary Commissioner refers in paragraph 17 of his Report. His Honour thinks that the true explanation of the figures has not yet been found, and has requested the Sanitary Commissioner to keep the matter under his observation for further report in case any convincing explanation is forthcoming hereafter.

8. Defective registration has already been touched upon, but it is satisfactory to note that the efforts to ensure correct registration of vital statistics are as effective as it is possible to make them, under present conditions, by means of inspection. There is one point, however, which calls for remark in this connection. There are several inspection agencies at work, *viz.* Civil Surgeons Revenue officers, Divisional Inspectors, and Vaccinators, but to judge from the statistics available there is no guarantee that one locality is not visited more than once by more than one of these agencies, while other localities are left uninspected by them all. This matter was referred to in the Lieutenant-Governor's Review of the Reports for 1898 and 1899, and should be noticed by the Sanitary Commissioner in future reports.

9. The Lieutenant-Governor is pleased to notice that some attention was paid to the improvement of wells and sanitary conditions in villages, and he remarks that a satisfactory record of work done by the Sanitary Board is appended to the Sanitary Commissioner's Report. Under the advice of the Sanitary Engineer considerable improvements are being effected in the water-supply and sanitation of several large towns of the Province. It may be noted that His Honour has not been able as yet to place funds at the disposal of the Sanitary Board for the assistance of Local Bodies in carrying out sanitary works except by way of loan, but he trusts that an improvement in the financial position of the Province will permit of grants-in-aid being made in the future.

10. The Lieutenant-Governor desires to record his thanks to Lieutenant-Colonel Bamber, I.M.S., and Mr. Goument for the good work done by them as Sanitary Commissioner and Sanitary Engineer respectively, and for the Reports they have submitted.

ORDER.—Ordered that a copy of the foregoing Remarks be circulated with the Report and furnished with the usual number of copies of the Report to the Government of India; also that the Review be published in the *Punjab Government Gazette*.

Ordered also, that a copy be forwarded to the Sanitary Commissioner, Punjab, for information and guidance with reference to paragraph 7.

By order of the Hon'ble the Lieutenant-Governor,

C. J. HALLIFAX,

Judicial and Genl. Secy. to Govt., Punjab.

(The text of the Sanitary Report is limited to 20 pages and that of the Sanitary Engineer to 4 pages.)

TABLE OF CONTENTS.

<i>Para.</i>		<i>Page.</i>
	Review of the Report by Government.	

SECTION V.—VITAL STATISTICS.

1	Annual Form No. I (Births)	...	...	...	...	...	...	1
2	Birth-rates registered in different Provinces of India	...	...	...	...	...	...	ib.
3	Birth-rates in 1902 compared with the previous year	...	...	...	...	...	...	ib.
4	Variation in the birth-rate in 1902	...	...	...	...	...	...	ib.
5	Causes of variation	...	...	...	...	...	...	ib.
6	Number of births and deaths compared	...	...	...	...	...	...	2
7	Annual Form No. II (Deaths)	...	...	...	...	...	...	3
8	Death-rates in other Provinces of India	...	...	...	...	...	...	ib.
9	Increase or decrease in the death-rates from different causes.	Annual Form No. II	...	...	...	...	...	ib.
10	Death-rates by districts.	Annual Form No. II	...	...	...	...	...	ib.
11	Death-rates in towns.	Annual Form No. VI B	...	...	...	...	...	ib.
12	Seasonal mortality.	Annual Form No. III	...	...	...	...	...	ib.
13	Chief meteorological features of the year	...	...	...	...	...	...	4
14	Prices of food grains and wages of labour	...	...	...	...	...	...	ib.
15	Deaths by sexes.	Annual Forms Nos. II and IV	...	...	...	...	...	5
16	Death-rate of infants under one year	...	...	...	...	...	...	ib.
17	Deaths according to classes.	Annual Form No. V	...	...	...	...	...	ib.
18	Deaths at railway stations outside municipal limits	...	...	...	...	...	...	6
19	Inspection of birth and death registers	...	...	...	...	...	...	ib.
20	Fines inflicted for breach of municipal bye-laws	...	...	...	...	...	...	ib.
21	Deaths among Europeans and Eurasians	...	...	...	...	...	...	ib.

SECTION VI.—CHIEF DISEASES.

22	Annual Form No. VII (Cholera)	7
23	Isolated outbreak in a village in the Kangra district	ib.
24	Annual Form No. VIII (Small-pox)	ib.
25	Small-pox mortality by sexes	ib.
26	Deaths among infants and children over one and under ten years	ib.
27	Seasonal mortality	ib.
28	Mortality by districts	8
29	Small-pox mortality in municipal towns. Annual Form No. VI B	ib.
30	Small-pox in towns in which vaccination is compulsory	ib.
31	Annual Form VI A and B (Plague)	ib.
32	Seasonal mortality. Monthly Returns published in Punjab Government Gazette	9
33	Mortality by districts. Annual Form No. II	ib.
34	Rural and urban death-rates from plague. Form VI A and B	ib.
35	Rural and urban death-rates in the Ludhiána district	ib.
36	Umballa district	10
37	Siálkot district	ib.
38	Jullundur district	ib.
39	Gurdáspur district	ib.
40	Hoshiárpur district	ib.
41	Labore district	ib.
42	Full report to be submitted by the Chief Plague Medical Officer	ib.
43	Annual Form IX (Fevers)	11
44	Districts with high mortality	ib.
45	Cerebro-spinal fever in the Hissár district	ib.
46	Cerebro-spinal fever in Delhi	ib.
47	Districts with low fever death-rates compared with 1901	ib.
48	Increase of fever death-rates in the Ráwalpindi and Mooltan divisions	12
49	Measures taken for the destruction of mosquitoes	ib.
50	Major Addie's inquiry into the prevalence of anopheles	ib.
51	Filling up and draining of pools around villages	ib.
52	Annual Form No. X (Dysentery and diarrhoea)... ..	ib.
53	Urban and rural death-rates	ib.
54	Annual Forms No. II and VI A and B (Respiratory diseases)	13
55	Mortality by districts	ib.
56	Annual Form No. VI A and B (Injuries)	ib.
57	Patients treated at the Pasteur Institute	ib.
58	Annual Form No. II (All other causes)	ib.

SECTION IX.—SANITARY WORKS.

[illegible]

SECTION X.—GENERAL REMARKS AND PERSONAL PROCEEDINGS.

<i>Para.</i>		<i>Page.</i>
65	Administration	16
66	Inspection work of Sanitary Commissioner	<i>ib.</i>
67	Lectures on Hygiene	<i>ib.</i>
68	Inspection work of Deputy Sanitary Commissioner	<i>ib.</i>
69	Inspection work of Civil Surgeons and Assistant Surgeons	17
70	Gratuitous distribution of quinine	<i>ib.</i>
71	Brief history of the sanitary arrangements of towns formed within railway precincts	<i>ib.</i>
72	Sewage irrigation	<i>ib.</i>
73	Proceedings of the Sanitary Board	<i>ib.</i>

APPENDIX A.

Proceedings of the Sanitary Board	i—ii
--	------

APPENDIX B.

Annual Report of the Sanitary Engineer to Government, Punjab, for the year 1902	iii—vi
---	--------

ANNUAL FORMS.

I.—Showing the births registered in the districts of the Punjab during the year 1902	i
II.—Statement of births and deaths registered in each district of the Punjab during the year 1902	ii—iii
III.—Deaths registered in the districts of the Punjab during each month of the year 1902	iv
IV.—Deaths registered according to age in the districts of the Punjab during the year 1902	vi—vii
V.—Deaths registered according to classes in the districts of the Punjab during the year 1902	viii
VI A.—Deaths registered from different causes in the districts (rural circles) of the Punjab during the year 1902	x—xi
VI B.—Deaths registered from different causes in the towns of the Punjab during the year 1902	xii—xvii
VII.—Deaths registered from cholera in the districts of the Punjab during each month of the year 1902	xviii
VIII.—Deaths registered from small-pox in the districts of the Punjab during each month of the year 1902	xx—xxi
IX.—Deaths registered from fevers in the districts of the Punjab during each month of the year 1902	xxii—xxiii
X.—Deaths registered from dysentery and diarrhoea in the districts of the Punjab during each month of the year 1902	xxiv—xxv

Statement showing the death-rates from cholera, small-pox, fevers and dysentery and diarrhoea for the five years preceding, and for the period since the introduction of drainage or water supply, or both, in the undermentioned towns.

Memo. of Errata.

Page 5, line 19, for 18 and 22 read 23 and 17.

Para. 30, line 6, for 1·2 read 1·02.

Para. 52, line 7, for higher read slightly lower.

Para. 52, line 11, after were read Gujranwala 0·27.

Para. 58, line 3, for 8·8 read 6·8.

Annual Form No. VI A, Rural Circles, District Kangra, sub-column 12, for 21 read 216.

Annual Form No. VI B, Towns, Beri Town, column 3, for 9,722, read 9,723.

Annual Form No. VII, District Simla, sub-column 5, for 1 read 51.



Section V.—Vital Statistics.

1. **Births.**—The births registered in the Punjab in 1902 were 880,477 showing an increase of 167,944 over the number recorded in the previous year. The birth-rate during the year under review was equal to 43·8 per 1,000 of the population according to the census of 1901. This rate is 8·4 per 1,000 higher than in 1901, and 3·8 per 1,000 in excess of the mean ratio, calculated on the same population, for the preceding five years.

2. As regards the birth-rates registered in the different provinces of India in 1902, the Punjab stands third in the list this time. The Central Provinces and the United Provinces of Agra and Oudh, with birth-rates as high as 48·29 and 45·84 per 1,000, occupy the first and second places. But it must be remembered that these two provinces were fairly healthy in 1901 as shown by their recorded death-rates of 28·8 and 30·3, whereas the Punjab had a high death-rate of 36·1. The Punjab was also extremely unhealthy in the early part of 1902 on account of the great prevalence of plague. Bengál records in 1902 a birth-rate of 40·14 per 1,000, Assam 34·21, Bombay 34·16, the North-West Frontier Province 33·6, Burma 31·57 and Madrás 28·2.

3. The birth-rate in 1902 was higher than in 1901 in every district of the Punjab. In no less than eleven out of the twenty-seven districts, the rise in the birth-rate during the year exceeded the provincial increase of 8·4 per 1,000, the excess ranging from about 15 to 18 per 1,000 in the districts of Gujráť, Montgomery, Lahore and Ferozepore, and from about 9 to 11 per *mille* in those of Mooltan, Karnál, Gurdáspur, Siálkot, Jhang, Jhelum and Hissár. The smallest increase of 1·5 was recorded in the district of Ludhiána, due to the combined effects of the fearful ravages committed in this district by plague in the early part of 1902 and of the great prevalence of malarial fevers in the previous autumn. In 1901 this district had a total mortality as high as 52 per *mille* of which 34 per *mille* was from fevers, and in 1902 it recorded the most appalling death-rate of 104 per 1,000 including 71 per 1,000 from plague.

4. Excluding the very small district of Simla, consisting mostly of the migratory population of the sanitarium, the district birth-rate during the year varied between 54·4 per 1,000 in Siálkot and 34·9 in Dera Gházi Khan. It was 52·1 in Gujráť, or very nearly as high as in Siálkot, 49 in Gurdáspur, 48·2 in Mooltan, 46·7 in Lahore, 46·1 in Gurgáon, 46·0 in Ferozepore, 45·7 in Amritsar, 45·3 in Jhang and 45·2 in Sháhpur. In as many as twelve districts, four in the Delhi Division, and two in each of the other four Divisions of the province, the birth-rate ranged from 40·1 to 44·7. In only four districts the birth-rate was under 40 per 1,000, *viz.*, Dera Gházi Khan 34·9, Kángra 35·6, Ludhiána 36·7 and Umballa 37·4.

5. As desired by His Honor the Lieutenant-Governor, in paragraph 4 of the Review of the Sanitary Report of the Punjab for 1901, I have carefully scrutinized the birth-rates, recorded in each of the last five years. And as the result of a close examination of the figures, calculated both on the old and the new populations, and contrasted with the death-rates in the corresponding period, I find that the principal cause of the marked variation noticed in the birth-rates in different districts and towns is the occurrence of severe epidemics of malarial fevers following heavy monsoon rainfalls—and since last year the destructive outbreaks of plague—which seriously affect the health of the people and considerably reduce, as a natural consequence, the normal birth-rate, nine months later. For instance in 1899, the districts of Ferozepore, Hissár and Karnál, recorded the high birth-rates of 56·0, 48·3 and 50·5 per *mille* owing to the absence of unusual sickness in the previous autumn, as shown by their annual fever

death-rates of 18, 20 and 25 per 1,000. In 1900 they suffered most severely from malarial fevers, as evidenced by the terrible fever death-rates of 69, 70 and 55 per 1,000, and as the result of the abnormal sickness and mortality, their birth-rates in the following year, 1901, fell to figures as low as 28·2, 32·4 and 32·2. The birth-rate varies similarly in towns. In Ludhiána, for instance, the total death-rate in 1897 was 46 per 1,000 and the birth-rate in 1898 was only 31. In 1898 the death-rate fell to 34 and the birth-rate in 1899 rose to 46. In 1899 the death-rate was again very low, *i.e.*, 29, and the birth-rate in 1900 was 40. In 1900 and 1901, the high death-rates of 59 and 57 were recorded, and the birth-rates in 1901 and 1902 fell to 31 and 28.

The variation in the birth-rate is also accounted for, to some extent, by differences in the effectiveness of registration. For example, take the districts of Siálkot and Dera Gházi Khan with the widest range in their registered mean birth-rates of 48·4 and 30·9 per *mille* for the previous five years. During this period, the highest yearly birth-rate in Siálkot was 57 per *mille* and the lowest 44. In Dera Gházi Khan the lowest rate was 26, and its maximum yearly rate of 34 was 10 per *mille* below the minimum ratio of Siálkot. I have no doubt that in Dera Gházi Khan a large number of births, particularly of females, are not reported. This district recorded in 1902 the extraordinary proportion of 120 males born to every 100 females compared with the provincial ratio of 110. Moreover the population of this district in 1891, with the addition of the excess of births over deaths in the ten-year period, is much below the total arrived at by the Census in 1901 showing that a balance of births remain unregistered. A low birth-rate is not necessarily in every case a proof of defective registration; as, for instance, the small average rate of births recorded in the Kángra district, which must be due to the great paucity of women, noticed at page 195, Part I, of the Punjab Census Report of 1901. In connection with this subject I may state that the Census Superintendent is compiling data to enable me to ascertain the extent to which the birth-rate varies in different places, when calculated on the number of women at the child bearing ages. Every possible effort is being made to secure an accurate registration in all parts of the province by a close supervision of birth and death registers through the agencies of Divisional Inspectors, Vaccinators and Revenue Officers. As an evidence of the marked improvement effected in this respect during recent years, I may refer to paragraph 9 of the chapter on Vital Statistics of the last Census Report, from which it will be seen that there was a difference of only 22,399 between the population of the Punjab according to the census of 1901 and the vital statistical estimate—a figure which, in the opinion of the Census Superintendent, is “really wonderfully small in a population of over twenty million souls.”

Another reason of the variation is that, under the orders of Government, the birth-rates are calculated throughout an intercensal period on the last preceding census, and not on the estimated population as in England. But the extent of variation, in this respect, sinks into insignificance, compared with the violent fluctuations caused by epidemic sickness at different places. Comparing the birth-rates in 1900, the tenth year of the last intercensal period, calculated on the old and the new population, the greatest variation in different districts, except Jhang and Gujránwála, is 5 per *mille*. The abnormal birth-rates in those two districts, as explained in my Sanitary Report for 1900, were due to the inclusion of the births of large portions of the new Chenáb Colony. In 1900 the birth-rates in the districts of Jhang and Gujránwála on the basis of the old population were 78 and 56 per 1,000, respectively; calculated on the new population of 1901 they fell to 34 and 43 per 1,000.

6. In 1902 the death-rate in the Punjab exceeded the birth-rate by 0·3 Number of births and deaths compared. per 1,000. In the previous year also it was higher, the excess amounting to 0·7. Thus, according to vital statistics, the province has lost during the two years one per 1,000 of its population. Comparing the rates of births and deaths by districts, the decrease of population was very considerable in the worst plague-infected districts. In fact the excess of deaths over births was limited almost entirely to those districts. In Ludhiána the mortality exceeded the births at the fearful rate of 67·2 per *mille*, in Umballa the rate of excess was 29·2 per 1,000, and in Jullundur and Siálkot 14·7

and 12·3 per *mille*. This regrettable loss of population in the province was made up by the very substantial increase of births over deaths observed in the Ráwalpindi and Mooltan Divisions. The whole of this portion of the province was practically free from plague during the year under review and was also healthy in 1901. In 1902 there was a very large increase of births over deaths in Montgomery. This district was remarkably free from autumnal sickness, its fever death-rate for the year being only 12·1 per 1,000.

7. **Deaths.**—During the year the total registered mortality of 886,973 in the Punjab yielded a death-rate of 44·1 per *mille*, of which 0·02 was ascribed to cholera, 0·6 to small-pox, 8·5 to plague, 23·5 to fevers, 0·7 to dysentery and diarrhoea, 2·8 to respiratory diseases, 0·3 to injuries and 7·6 to unspecified causes.

8. The total death-rates registered in other provinces during the year were as follows:—Bombay 39·04, Bengal 33·43, the United Provinces of Agra and Oudh 32·54, Assam 29·01, Central Provinces 25·82, the North-West Frontier Province 24·4, Burma 21·16 and Madras 20·2. Thus the mortality of 44·1 per 1,000 in the Punjab was the highest provincial rate recorded in India.

9. Compared with the previous year, the death-rate registered from small-pox in the Punjab in 1902 increased by 0·3 per 1,000, from plague by 7·8 and from "all other causes" including respiratory diseases by 1·6. The deaths from fevers decreased by 1·8. The mortality from cholera was very insignificant and the death-rates from dysentery and diarrhoea and injuries were exactly the same in both years. The net increase of 8 per 1,000 was due almost entirely to plague.

10. During the year the abnormally high death rates of 103·9 per *mille* in Ludhiána, 66·7 in Siálkot, 66·6 in Umballa, 54·8 in Jullundur, 51·0 in Gurdáspur, 46·8 in Lahore, and 41·7 in Hoshiárpur were due to the excessive mortality recorded from plague in these districts. Fever was the principal cause of increase in the five districts of the Delhi Division, excepting Umballa and Simla, and in the districts of Ferozepore, Amritsar and Gujránwála, in which the rates ranged from 39·4 to 47·9. In the Ráwalpindi and Mooltan Divisions, though the mortality in most of the districts was above the normal, the highest district rate did not exceed 36·3 per 1,000. The lowest rate of 23·4 was recorded in the district of Montgomery.

11. As directed by His Honor the Lieutenant-Governor, in the concluding portion of paragraph 9 of the Review of the Sanitary Report for 1901, I have inspected all the towns therein referred to, which had a death-rate of over 50 per 1,000 in 1901, and a mean ratio of more than 40 in the preceding five years, excepting two in which the increased mortality in 1901 was caused by plague, and will submit a report to Government on the sanitary conditions of each of them separately. During the year 1902, excluding those in which plague was prevalent, there were 8 such towns, and I have inspected five and will visit the remaining three. The death-rate of the 140 towns in 1902, taken as a whole, was 49·39 or 12·67 per 1,000 in excess of the average for the previous five years. The most excessive death-rates during the year were recorded in Khanna 177 per *mille*, Jagráon 153, Raikot 137, Machhiwára 133, all in the Ludhiána district, Jamke in the Siálkot district 143 and Rupar in the Umballa district 112 per 1,000. The fearful increase of mortality in these towns was caused by plague.

12. The most noticeable feature of Annual Form No. III is the great mortality registered during the first five months of the year on account of the prevalence of plague. It was particularly high in March and April, usually the healthiest season of the year. In the district of Ludhiána, in which plague was most fatal, the total mortality in March and April yielded the appalling death-rate of 348 per 1,000 per annum. In the other severely infected districts of Umballa, Siálkot and Jullunder, the total deaths in March and April were recorded at the annual rates

of 156, 144 and 102 per *mille*, respectively. Of the total mortality of 44 per 1,000 registered in the province during the year, about 24 per 1,000 was recorded in the months of January to May, only 9 per 1,000 in the four months from June to September, and 11 per 1,000 during the last three months of the year. This is just the reverse of what used to occur before the advent of plague, then the last quarter of the year was much the unhealthiest.

13. The following is a brief summary of the chief meteorological features of the year furnished by the Meteorological Reporter, Punjab:—During the months of January and February the weather over the Punjab was exceptionally dry. In January no rain whatever was received over the Punjab plains or hills, and in February there was only one showery period about the 20th. The mean temperature of the province was lower than usual during the first two weeks of January and again for a few days at the end of the month and in the beginning of February, but with these exceptions the temperature was exceptionally high. In March the weather was showery at times, more particularly on the 18th and 27th, and about these dates the mean temperature fell to below the normal. At all other times the excess which had prevailed during the two preceding months continued. The highest temperature recorded during the month was 98·3° registered at Sirsa and Mooltan. The weather during the three hot weather months of April, May and June was fairly normal. In April the rainfall was in some excess in the east and in defect in the west of the province, while in June this relation was reversed. The highest temperatures recorded were: in April 108·4° at Mooltan, in May 117·0° at Mooltan and in June 118·9° at Khushab. Monsoon rainfall commenced over the Punjab on the 20th of June, after which date moderate rain was received and the temperature fell to between 5 and 13 below the normal. The rainfall during the monsoon was below the normal almost everywhere, both on the hills and plains. Local heavy falls of rain were reported in parts of the Delhi Division between the 18th and 20th of July and there were some heavy thunder showers in different parts of the province in September. The rainfall of the period was, however, in general defect, and as a result the mean temperature was generally higher than usual. A maximum temperature of 112° was recorded at Montgomery in July, of 112·4° at Mooltan in August and of 109·4° at Mooltan in September. The monsoon withdrew from Upper India on about the 22nd of September but October was somewhat disturbed and showery and the rainfall of the month exceeded the normal at several stations. The mean temperature was generally above the normal. During November the weather was fine and settled practically throughout the month and the mean temperature of the province generally exceeded the normal. There was no rain over the Punjab during December, but the high temperatures which prevailed during November ceased about the middle of December when a cold period set in and continued till the end of the month.

14. The Director of Land Records and Agriculture, Punjab, has furnished the following note regarding the prices of food grains and wages of labour. grains:—“Prices of food grains at the principal marts of the province have varied but little during the year, the normal rates with which the previous year of abundance closed having been maintained throughout. At Delhi wheat sold wholesale at rates varying from Rs. 2-8-8 to Rs. 2-12-2 per maund, while the highest and lowest rates in the markets of Ferozepore, Lahore and Amritsar were Rs. 2-8-0 and Rs. 2-0-9 per maund, respectively. At Mooltan and Rāwalpindi the highest and lowest selling prices for wheat were Rs. 2-12-1 per maund in May and Rs. 2-1-6 per maund in November. The price of maize has throughout remained below Rs. 2 per maund, the rate generally being Rs. 1-13-0 per maund at Delhi, Rs. 1-11-0 at Rāwalpindi and Ferozepore, Rs. 1-10-0 at Mooltan, and Rs. 1-7-0 per maund at Amritsar. The price of *ghi* has fallen from Rs. 40 to Rs. 30 per maund, at Ferozepore it is now selling at Rs. 28-8-0 per maund as against 41-8-0 per maund last October.” With regard to the wages of labour there was no material variation except in Delhi where the rate for skilled labour was higher on account of the Durbar during the second half of the year and in the districts of Jhang and Muzaffargarh where the rates were lower.

15. With regard to the relation of male and female deaths at different age-periods, the first point that deserves notice is the abnormal excess in the female over the male death-rate. The total death-rate in the province during the year was 41.1 per 1,000 among males and 47.6 among females, as against the average rates of 32.2 and 35.4 during the preceding five years. A glance at the figures by districts in Annual Form No. IV will show that this was due to the unusually higher death-rate registered among females in those districts where plague was most prevalent. If we exclude the plague mortality of 7.02 among males and 10.26 among females, the provincial male death-rate would be 34.1 and the female 37.4, showing a difference of 3.3, the same as in the case of the average male and female death-rates for the previous five years.

Taking the different age-periods, it appears that the provincial female death-rate in 1902 among infants under one year per 1,000 living according to the last census was only 1 per cent. higher than the male as against 3 per cent. in 1901, and among children over 1 and under five, 6 per cent. against 5 in 1901. Between 5-10, the excess was 23 per cent in 1902 and 13 in 1901. At the age-period 10-15, it was 54 per cent. in 1902 and 34 in 1901, and between 15-20, 20-30 and 30-40, the percentages of excess were 28, 20 and 27 as against 30, 18 and 22 respectively in the previous year. These being the child bearing ages, a higher mortality among women has been observed in previous years, though not to such an abnormal extent as in 1902, the marked excess in 10-15 is, in all probability, due to the injurious effects of premature maternity. At the age-periods 40-50 and 50-60 the female death-rate was higher than the male by 14 and 11 per cent. in 1902; in 1901, however, the male rates were 2 and 3 per cent. in excess of the female. Among old persons of 60 years and upwards, the female death-rate exceeded the male by 15 per cent. in 1902 and 9 in 1901.

16. During the year the death-rate among 1,000 male infants under one year according to the census of 1901 was 316.44 and among female infants 320.76. Calculated on the number of births registered in the province during the year, the male death rate was 233.43 and the female 241.84 per 1,000. The difference was very great in the districts of Hissar, Ferozepore, Karnál, and Rohtak, in which the destructive epidemic of malarial fevers in the famine year of 1900 had considerably reduced the infant population enumerated in 1901. The infant population at the last census was much below that of 1891. In Hissar the death-rates of male and female infants under one year per 1,000 living according to the census of 1901 were 556 and 469 compared with 256 and 228 calculated on the number of births; in Ferozepore 434 and 497 against 243 and 268; in Karnál 428 and 407 against 271 and 268; and in Rohtak 412 and 352 against 249 and 227. A marked excess in the death-rate of female infants was, as usual, observed in the districts of Jullundur, Ludhiána, Ferozepore and Amritsar. The rates for Ferozepore are already quoted; in Jullundur the death-rates based on the population of 1901 were 265 among males and 357 among females and calculated on the number of births recorded during the year they were 250 and 311; in Ludhiána 328 and 421 as against 295 and 342; and in Amritsar 308 and 375 as against 246 and 287.

17. During the year the death-rate registered in the province among Mohammedans was 41.88 per 1,000 and among Hindús 46.75 as against 33.58 and 39.14 respectively in the previous year. The mortality rate among Mohammedans in the province, taken as a whole, is much less than among Hindús. The rates in different districts, however, vary considerably. In reviewing the Sanitary Report of the Punjab for 1901, the Government of India noticed, as a constant feature of Annual Form No. V, the considerable excess in the Hindu death-rate over the Mohammedan rate in the Hissar District and of the Muhammedan over the Hindu rate in the districts of Lahore and Montgomery. The reason of this, as explained in a separate report submitted to Government, seems to be that in Hissar, which shows a higher Hindu death-rate, the bulk of the Hindu population consists of poor low caste tribes, while in the other two districts, as also in Gujranwála in 1902, the reverse is the case, the poorer classes being mostly Mohammedans. The death-rate among Native Christians was 23.74 per

mille as against 15.57 in the previous year. The low death-rate among Native Christians, as compared with the Hindu and Mohammedan rates, is noteworthy. The death-rate among "other classes" is incorrect, and the Civil Surgeons have been requested to show under "others" the deaths of only those castes whose population is included in the census returns under that head.

18. The total deaths registered during the year at the railway stations outside municipal limits was 136 compared with 199 in the previous year. One death was reported from cholera, 5 from small-pox, 10 from plague, 74 from fevers, 5 from dysentery and diarrhoea, 17 from respiratory diseases, 3 from injuries and 21 from other causes. The number of births during the same period was 138 of which 70 were of males and 68 of females.

19. In 1902 there were three Divisional Inspectors of vaccination and registration of births and deaths attached to the Delhi, Jullundur and Rāwalpindi Divisions. The appointment of special Inspector for the Kāngra district, held by the late Rai Bahadur Pundit Bal Kishan, was abolished and the inspection work in the Kāngra district was performed by the Divisional Inspector of the Jullundur Division. The appointments of Divisional Inspectors for the Mooltan and Lahore Divisions have been sanctioned during the year, and arrangements are being made for the selection of suitable candidates for the posts. With reference to paragraph 6 of the Review of the Sanitary Report of the Punjab for 1901, I may state that an omission of birth or death means only the total omission of an entry. The omissions discovered by Divisional Inspectors and Vaccinators during the year are given by sex. During the year the Divisional Inspectors verified 38,485 male and 35,249 female entries of births, and discovered 935 omissions of male and 1,026 of female births or a percentage of 2.4 among male and 2.9 among female entries checked. They examined 40,585 entries of male and 40,870 of female deaths and found 624 and 688 omissions, respectively, showing a percentage of 1.5 in the case of male and 1.7 in that of female deaths. The vaccinators examined 200,815 male entries of births and detected 2,453 omissions of male births or 1.2 in 100 entries checked, they verified 177,448 female birth entries and detected 2,650 omissions of births, a percentage of 1.5. The number of male and female death entries verified by them was 188,658 and 169,455 and the omissions found were 903 and 1,013, the percentage of omissions to entries verified being 0.5 and 0.6. Owing to discrepancies in the returns of Revenue Officers, accurate information can be given only for the last quarter of the year. It appears that they inspected during that period 7,264 male and 6,097 female entries of births, detecting 110 and 69 omissions, they examined 6,093 male and 5,855 female entries of deaths and discovered 75 and 69 omissions, the percentages of male and female birth omissions to entries verified being 1.5 and 1.1 and of male and female death omissions 1.2 and 1.2. The number of chowkidars fined during the year was 196 and the fines amounted to Rs. 77. Full information will be given in next year's report in accordance with the form prescribed in Punjab Government letter No. 336, dated 7th March 1903.

20. In 1902 there were 17 municipal towns in which fines for breach of municipal bye-laws regarding the registration of births and deaths were inflicted; 125 persons were fined and the amount of fines inflicted was Rs. 102. A large number of persons were fined in Bhiwani, Bhakkur in the Miānwāli District, and in Mooltan.

21. During the year there were 122 births and 77 deaths registered among Europeans and Eurasians, compared with 98 births and 75 deaths recorded among them in 1901. As stated in last year's report the population of these classes is not available and the rates therefore cannot be calculated.

Section VI.—Chief Diseases.

22. **Cholera** —During the year under review the province was again almost free from cholera. There were only 371 deaths registered from the disease against 180 in 1901. With the exception of an isolated outbreak which occurred in the month of December in the Kangra district, cholera was almost entirely confined to a few districts in the Delhi Division. Of the total of 371 deaths in 1902, there were 162 recorded in the district of Umballa and 126 in that of Gurgaon. In the Umballa district, the majority of cholera deaths were registered during the months of July, August and September. Cholera was reported in 25 different places in this district, but in no one did the disease assume any serious epidemic character. In the district of Gurgáon cholera prevailed in four villages. It appeared in May, causing 27 deaths in that month and 45 in June. It ceased in July and August, but reappeared in September when a total of 54 deaths was recorded.

23. **Cholera** appeared in the small village of Sansai in the Palampur thana of the Kangra district on the 4th December and ceased on the 11th, and in the course of one week there were 65 seizures and 38 deaths. The Military Assistant Surgeon, in charge of the Palampur dispensary, who inquired into the particulars of the outbreak at the time of its occurrence, found that the origin of the disease was due to contamination of the drinking water of one of the village tanks by the washing of the soiled linen of a sepoy who had returned to the village on the 2nd December from Burma suffering from diarrhoea on his way up. Captain E. S. Peck, I.M.S., the Civil Surgeon of the Kangra district, gives the following account of the outbreak in his annual report:—"There were 65 seizures with 38 deaths in the village of Sansai during the month of December 1902. The infection was brought to the village by a sepoy returning from Burma, after the man's death, his wife washed his clothes in the tank from which one-half of the village procured their drinking water. The village is divided into two parts by a *nallah* (rivulet) and each half of the village has a separate *baoli* (spring) and tank for drinking water. One-half of the village had no cases of cholera, whilst the other half, the water supply of which had been polluted, developed 65 cases of cholera in seven days. The inhabitants ceased to use the infected water and the tank was disinfected by permanganate of potassium, the cases ceased immediately."

24. **Small-pox**. —The mortality from small-pox in the province in 1902 was nearly twice as high as in the previous year, the total number of deaths being 11,629 compared with 6,154 in 1901. The death rate was equal to 0.58 per 1,000. It was 0.27 in excess of that of 1901, and 0.22 higher than the mean ratio for the preceding five years.

25. Of the total deaths from small-pox, 6,099 were registered among males and 5,530 among females. Relatively to the population of each sex there was very slight difference between the male and female death rates which, in 1902, were 0.56 and 0.59 respectively as against 0.3 and 0.31 in the previous year.

26. There were 3,045 deaths registered among infants under one year of age, being 26 per cent. of the total small-pox deaths in the province. This proportion is one per cent. higher than in the previous year. The number of deaths reported among children over one and under ten years was 5,823 or 50 per cent. of the provincial mortality compared with 53 in 1901.

27. The seasonal prevalence of the disease in 1902 was in accordance with the experience of previous years. The mortality began to rise in November last, went on increasing up to the month of May when it reached the maximum, the downward tendency commenced in June, and the deaths went on declining gradually until the lowest figure was recorded as usual in October.

28. In every district of the Delhi Division, except Simla, the deaths from small-pox in 1902 were considerably below the average for the previous quinquennial period, being only 4 per cent. of the provincial mortality registered during the year. This immunity is owing to the periodical abatement of the disease. Small-pox has its periods of maximum and minimum prevalence. For instance, the districts of Hissár and Gurgáon in the Delhi Division which this year show a mortality of only 47 and 130 from small-pox, had recorded in the year before last no less than 1,301 and 1,641 deaths or very nearly one-third the number registered in all the districts of the province. In the Jullundur Division, the district of Kangra, as usual, recorded the lowest death rate. There were only 30 deaths registered in it, giving a ratio of 0·04 per *milie*. Ludhiána also had a very low rate of 0·1. The disease was very prevalent in the Jullundur and Hoshiárpur districts of this Division, in which the death rates were largely in excess of the average for the previous five years. The rate of mortality in the Lahore Division was higher than the normal in all the districts, except Siálkot. The principal sufferers were Montgomery and Lahore in which the deaths recorded in proportion to the population were 1·14 and 0·8 per 1,000. Montgomery suffered very badly last year also. The epidemic was very severe in the Ráwalpindi and Mooltan Divisions. No less than one-half the mortality of the province was recorded in these two divisions. The highest death rates were registered in the districts of Sháhpur and Muzaffargarh, *viz.*, 2·15 and 1·88, the maximum district mortality ratios of the year in the province. The mean rates for the previous five years in these two districts were only 0·31 and 0·47 per 1,000. On referring to the Vaccination Report for the year 1901-02, it appears that in the districts in which small-pox was very prevalent during the year under review, the number of persons successfully vaccinated per 1,000 of population was, with one or two exceptions, lower than the average for the province, and very much below the rate for the best vaccinated district of Kangra.

29. The death rate from small-pox during the year in the 140 towns, as a whole, was 0·9 per 1,000 or nearly double the rate registered in the rural circles of the province. The highest death rates from the disease were recorded in the following towns:—Pindigheb in the Ráwalpindi district 11·83 per 1,000; Srigobindpur, Dinánagar and Gurdáspur, all in the Gardáspur district, 10·05, 8·67 and 5·3 respectively; Patti in Lahore 6·84, Kila Didar Singh in Gujránwála 6·65; Kartárpur in Jullundur 5·63; Khushab in Sháhpur 5·52; Kunjah in Gujrát 5·29; and Duniapur in the district of Mooltan 5·12. In Patti, Kartárpur and Gurdáspur a high death rate from small-pox was registered last year also. In none of these towns is vaccination compulsory, and in all of them, with one exception, there was a large number of children remaining unvaccinated in 1901-02. The Civil Surgeons were asked to vaccinate all persons available for the operation but the general complaint is the opposition of townspeople to vaccination.

30. It is gratifying to observe that in the 22 towns in which the Vaccination Act is in force, the mortality from small-pox was comparatively low, *i.e.*, 0·6, the highest rate reported in Pind Dádan Khan did not exceed 1·6 per *milie*. In Jullundur it was 1·4 per 1,000, in Mooltan 1·1, in Dera Gházi Khan 1·1, and in Gujránwála 1·2. In 18 towns it was less than 1 per 1,000, and in 4 not a single death was recorded. The attention of local officers has been specially invited to the necessity of enforcing the provisions of the Vaccination Act in these towns.

31. **Plague.**—Plague was most severe in the Punjab in 1902. It accounted for no less than 171,302 deaths, yielding a rate of 8·52 per 1,000 of the population, equal to about one-fifth of the total mortality from all causes in the province. There was an increase of 156,343 deaths from the disease over the number recorded in the previous year. The female death rate from plague was, as usual, much higher than the male; the number of deaths registered among females in 1902 was 95,519, at the rate of 10·26 per 1,000, and among males 75,783, equal to a rate of 7·02 per *milie*.

32. As stated in last year's report, the epidemic broke out in the winter months of 1901. From 941 deaths in October 1901 the number rapidly increased to 3,123 in November and to 6,053 in December. In January 1902 the deaths rose to 9,369 and in February to a figure as high as 19,712. The epidemic was at its height in March and April. In these two months the deaths registered were as many as 47,956 and 52,956, or three-fifths of the entire plague mortality of the year. In May the disease abated considerably, the deaths having fallen to 24,099 in that month. In June the number suddenly declined to 3,025 and in July it dropped to a figure as low as 333. In August it fell to a minimum of 166. From September the disease began to show signs of renewed activity, though the recorded mortality in this month did not exceed 343. In October the recrudescence was very marked, the deaths suddenly rising to 1,607. In November and December the epidemic assumed a more virulent character than the previous one, the deaths having increased to 3,897 and 7,839 showing an excess of 774 and 1,786 compared with the plague mortality registered in the corresponding months last year. This was anticipated, as the epidemic had extended in March and April to a considerably wider area than in any previous year since the importation of the disease in this province in 1897.

33. The disease was confined during the year mostly to the central and thickly inhabited portion of the province. The districts in the Delhi Division, except Umballa and Karnál, the hilly districts of Kangra and Simla and, with one or two exceptions, the sparsely populated districts in the Ráwalpindi and Mooltan Divisions, including Montgomery, were practically free from plague. The greatest sufferer was the district of Ludhiána. It lost during the year 71 per 1,000 of its population from plague. The deaths recorded in this district were no fewer than 47,671 or more than one-fourth of the total deaths from plague in the province. The epidemic was at its worst in the months of March and April in which 19,119 and 16,737 deaths, respectively, were registered, or three-fourths of the total plague mortality of the district during the year, and at an annual rate of 319 per 1,000 of the population. Next to Ludhiána, the districts of Umballa and Siálkot suffered most severely, the deaths registered in them amounting to 22,902 and 28,258 and yielding death-rates, relatively to population, of 30 and 26 per mille. The districts of Jullundur and Gurdáspur had 17,364 and 14,731 deaths at the rates of 19 and 16 per 1,000. Hoshiárpur and Lahore stood sixth and seventh in the order of plague mortality, recording 12,321 and 11,814 deaths, equal to a rate of 13 per mille in the former and 10 in the latter district. In these seven districts ninety per cent. of the provincial mortality from plague was registered. The remaining ten per cent. was recorded mostly in the districts of Ferozepore, Amritsar and Gujránwála, in which the deaths varied in round numbers between six and three thousand. In all the plague-infected districts, particularly in those in which the highest mortality was registered, the epidemic, with slight variations, ran the same course, increasing rapidly in the winter months, reaching its climax in spring, declining suddenly with the commencement of the hot weather and disappearing almost entirely in the months of July, August and September.

34. The difference between the rural and urban death-rates from plague for the province, as a whole, was very little, the rate of 8.58 per mille in the rural circles being slightly in excess of 7.95 in towns. In the most severely infected area, comprising the seven districts referred to in the preceding paragraph, the village death-rate of 24.6 exceeded the town ratio of 19.4 by 5.2 per 1,000.

35. In the district of Ludhiána, in which the highest mortality from plague was registered, the rural death-rate was 70.38 or 3.46 below the rate in towns. The town of Ludhiána, with a population of nearly half a lakh, had a death-rate as high as 46.9 per mille. In the minor towns of the district the ravages committed by the disease were fearful. Ráikot and Máchhiwára were almost decimated, Jagráon lost 11 per cent. of its population and Khanna no less than 14 per cent.

The havoc worked by plague in many smaller villages was terrible. Rái Báhadur Dr. Fatteh Chand, the Civil Surgeon of this district, gives instances of 22 villages in which the most appalling death-rates ranging from 20 to 40 per cent. of the population were registered. The plague reports of this and other districts have been sent by Civil Surgeons direct to the Chief Plague Medical Officer, but from a brief note received from the Civil Surgeon of Ludhiana it appears that rats, as a rule, were found dying in every village before the commencement of outbreaks of the disease among the inhabitants, and that those villagers who went out at the discovery of rats dying and did not visit their houses mostly escaped. In a large number of villages cases occurred with purely cerebral symptoms at the commencement of the outbreaks, and as the disease advanced buboes became general in nearly every case. Whether the first cases were of cerebro-spinal fever or plague, the Civil Surgeon is unable to say, as no blood examination was made.

36. The plague mortality in the rural circles of the Umballa district amounted to 30 per 1,000, a little over 3 per *mille* higher than the town rate. The epidemic was most fatal in the small town of Rupar, in which an excessively high rate of 90 per 1,000 was reported. In the large town of Umballa the deaths from plague were recorded at the rate of 27.9 per *mille*.

37. In the district of Siálkot, the death rate of rural circles was 26.8 per 1,000, showing an excess of 6.5 over the urban rate. The smaller rate in towns is due to the fact that in Siálkot, the only large town in the district, the death-rate from plague was comparatively very low, being only 8.5 per 1,000. The disease was most severe in the small town of Jámke in which a terrible rate of 116 per *mille* was registered. In Daska and Pasrúr the epidemic was very severe, the rates recorded in them being 48.1 and 37.4 per 1,000.

38. Every town in the Jullundur district was infected, but the average urban death-rate of nearly 14 per 1,000 was 6 per *mille* less than the rate in rural circles; the highest death-rates were registered in the small towns of Nakodar and Aláwalpur, viz., 55.5 and 32.3 per *mille*. In the large town of Jullundur the rate was a little below 8 per 1,000.*

39. The mortality caused by plague in the rural circles of the Gurdáspur district was 16.2 per 1,000, compared with a rate of 9.7 in towns. The large town of Batála had a death-rate of only 0.37 per 1,000. Of the minor towns, except Sri Gobindpur and Dalhousie, none escaped, the principal sufferer being the small town of Gurdáspur, the headquarters of the district, in which the plague mortality was as high as 42.6 per *mille*.

40. In the Hoshiárpur district the village death-rate of 12.6 per 1,000 was lower than the urban rate by 4.6 per *mille*. Of the minor towns, Harriána and Anandpur suffered very severely, their death rates being 40.5 and 37.4, respectively. The town of Hoshiárpur also was badly infected; its death rate from plague was 22.3 per 1,000.

41. The average death-rate from plague of the urban population of the Lahore district was only 3 per *mille* against 12.2 per 1,000 in the rural circles. Of the towns, Kasúr was the only one which suffered to any great extent, the death-rate registered in it being 24.4 per 1,000. It is worthy of note that, although the district was badly infected by plague, Lahore itself with its large population of 186,884 had a death-rate of only 0.7. Great improvements have in recent years taken place in the sanitary condition of Lahore. But it is too early yet to attribute the immunity of the town solely to its improved sanitation.

42. The Chief Plague Medical Officer, Punjab, will submit a special report on the epidemic, giving fuller details of the outbreaks in different parts of the plague-infected districts, the character of the disease, the way in which the infection was carried from place to place, and the effect of inoculation and other precautionary measures taken to prevent the spread of the disease.

Full report to be submitted by the Chief Plague Medical Officer.

43. **Fevers.**—Last year there was a diminution of as many as 141,594 deaths from fevers in the province as compared with the preceding year. During the year under review, there was a further decrease of 34,683. The deaths in 1902 numbered 473,352, corresponding to a rate of 23.54 per 1,000, which is 1.72 below the rate for 1901 and 8.83 lower than that of 1900. As regards the prevalence of fevers, the year was a fairly normal one, the mortality being only 0.97 per *mille* above the mean ratio for the previous quinquennium. The monsoon rainfall was below the normal, excepting some local heavy showers in parts of the Delhi Division between the 18th and 20th July, and there was a marked absence of the increase in the autumnal fever mortality noticed in epidemic years.

44. The most striking feature of the returns for 1902 was the great prevalence of fevers, compared with other parts of the province, in five out of the seven districts of the Delhi Division, *viz.*, Hissár, Rohtak, Gurgáon, Delhi and Karnál, in which the fever death-rates ranged between 30 to 33 per 1,000. These were the highest district rates recorded during the year, and from 6 to 10 per *mille* in excess of the provincial ratio. In Hissár, Karnál and Rohtak the mortality from malarial fevers was very high in the last four months of the previous year, and in these, as also in the districts of Gurgáon and Delhi, the fever rate was abnormal in January to April or May 1902, and in Hissár and Karnál higher even than their autumnal mortality.

45. The unusual increase in the fever mortality of the Hissár district during the first quarter of 1902 is ascribed by the Civil Surgeon, Dr. Courtney, to cerebro-spinal fever of a very severe and fatal type which prevailed in an epidemic form during that period. The outbreak was preceded by pneumonia and was due to the deteriorated condition of the population from previous privations. Dr. Courtney had ten cases under his own observation in the Police Hospital, Hissár, and in every one he found by *post-mortem* examination the symptoms typical of cerebro-spinal meningitis. He also saw a case in the Hospital at Sirsa and four in the Hissár city, and in three of these the symptoms were still well marked. The Assistant Surgeons of Hissár and Bhiwáni together saw a case in the city of Bhiwáni and another in the Dispensary, both of which had similar symptoms. In a large number of cases reported as "fever" the symptoms described by Hakíms, educated natives and others, were those of cerebro-spinal fever and the mortality was very high and rapid.

46. There was an epidemic of cerebro-spinal fever in the city of Delhi in the first half of the year; the mortality from fever was very high, being 33.6 per 1,000 against the average of 18.6 for the same period during the previous five years. The disease was also present in the district to a very slight extent. But the total number of deaths which occurred both in this and the Hissár district could not be ascertained. Major Davidson, the Civil Surgeon of Delhi, detected the presence of the disease in the city in February. He held *post-mortem* examinations in a few suspicious cases which were first considered as virulent cases of plague, and he found that the disease was cerebro-spinal meningitis. Cases daily came under his observation and most of them of an acute type, the patients dying in one or two days. No buboes were discovered in them.

47. A remarkable decrease occurred in 1902 in the deaths reported under the head of fevers in the districts of Ludhiána and Ferozepore, and, to a lesser extent, in Montgomery and Lahore. In the Ludhiána district, the fever rate during the year was only 17.68 per 1,000 compared with 34.44 in 1901, showing a reduction of nearly 17 per 1,000. Possibly some portion of the mortality in this district from fevers was registered as plague. In Ferozepore and Lahore the death-rates of 27.25 and 21.47 were nearly 13 and 7 per *mille* below the rates in the previous year. Next to the small hilly district of Simla, which recorded a death-rate of 8.83, Montgomery had the lowest fever mortality in 1902, being in the proportion of 12.08 per 1,000 of population.

48. The mortality from fevers in 1902 was higher than in the previous year in all the districts of the Ráwalpindi and Mooltán Divisions except Gujrat. The increase was most marked in the districts of Jhelum and Ráwalpindi, in which the fever death-rates of 24.75 and 23.69 were 7 per 1,000 in excess of the rates in 1901. In both the districts the fever mortality was very high in the winter months of the year under review. The prevalence of a disease of an infectious nature in a village in the Gujarkhan tahsil of the Ráwalpindi district was on enquiry found to be pneumonia in an epidemic form, brought from the Lahore Central Jail by the relatives of a warder who had died there from pneumonia in November. Pneumonia was reported to be very prevalent in the Ráwalpindi district, and it is highly probable that deaths from that disease or perhaps from cerebro spinal meningitis were reported as fever, in many parts of the Ráwalpindi and Mooltán Divisions. Since writing this report intimation has been received of the occurrence of an outbreak of cerebro spinal fever in the Dera Ghazi Khan district in the month of February of the current year.

49. With reference to Government of India letter No. 1775 (Medical), dated the 16th December 1901, trial measures for the prevention of malaria by the destruction of mosquitoes were carried out in Gujranwála and Gujrat, but with very little success, owing to the operations being stopped in Gujrat before the breeding time of the anopheles and on account of the outbreaks of plague in both the towns. A separate report on this subject was submitted to Government, and the experiments will be started again from 1st of August this year.

50. In connection with this subject I may mention that during the last six months of 1901, Major J. R. Addie, I.M.S., the Civil Surgeon of Ferozepore, gave much of his spare time in a very interesting inquiry into the prevalence of anopheles in his district, and their relation to fever. He has furnished a lengthy report embodying the results of his investigation. The report contains much valuable information.

51. The attention of local officers was particularly called to the subject regarding the filling up or draining of pools around villages, referred to in the concluding portion of paragraph 11 of the Review of the Sanitary Report for 1901. In several districts the matter was under consideration during the year. But nothing worth noticing was done in this direction on account of the terrible sufferings caused by the epidemic of plague in many parts of the province, apart from the almost insurmountable difficulty of want of funds required for the purpose. Satisfactory progress, however, was made during the year in the distribution of quinine, as will be seen from the remarks in Section X of this Report.

52. **Dysentery and Diarrhoea.**—The deaths ascribed to dysentery and diarrhoea in the province during the year were 14,124 as against 14,722 in 1901. The death-rate of 0.7 per mille was 0.13 lower than the mean ratio for the preceding five years. The largest number of deaths from these diseases was registered in September and October and the smallest in February and March. The death-rate of 0.43 per mille registered in the Hissár District, though higher than 0.56, the rate for the previous year, was very much below 3.64, the mortality in the famine year 1900. The districts which recorded a comparatively higher rate than others were:—Gurgáon 1.17, Delbi 1.34, Umbálla 1.29, Simla 1.57, Gurdáspur 1.49 and Siálkot 1.08, and those which registered the lowest rates were Dera Gházi Khan 0.27, Montgomery 0.23, Muzaffargarh 0.32, Rohtak 0.35 and Ferozepore 0.37.

53. The urban death-rate of the province from these diseases was four times as high as in the rural circles, being 2.16 per 1,000 against 0.54. Excessive rates were recorded in the following towns:—Kalabágh in the Miánwáli district 9.96 per 1,000, Pind Dadan Khán 9.22, Khánpur (notified area) a suburb of Hoshiárpur 6.23, Buria in the Umballa district 5.63, Ferozepur and Sohna in the Gurgáon district 5.22 and 5.15 and Ballabgarh in the Delhi district 5.1. Dysentery and diarrhoea and fever rates

rise concurrently, and it is worthy of note that in all these towns, with one exception, malarial fevers were very prevalent during the year.

54. Respiratory diseases.—In accordance with the orders of the Government of India conveyed in letter No. 1530—1542, dated the 13th August 1901, the deaths from respiratory diseases are shown separately in the returns for the year under review. The variation in the mortality from these diseases in different districts is extraordinary, viz., from 9·1 per 1,000 in Gurdáspur to a figure as low as 0·3 in Rohtak. The classification of the diseases under this head is manifestly incorrect, and there is hardly any remedy for it, as nothing better can be expected from the illiterate village chaukidars who at present perform the responsible duty of reporting the causes of deaths in rural circles.

55. Comparing the figures under this head by districts, it appears that
 Mortality by districts. the highest rates from diseases of the respiratory organs during the year were all registered in those infected by plague, viz., 9·1 per 1,000 in Gurdáspur, 6·4 in Amritsar, 6·3 in Hoshiárpur, 5·9 in Umballa, 5·3 in Siálkot, 4·3 in Jullundur, and 4·5 in Ludhiána, as against the provincial ratio of 2·8. I do not think this is due to misclassification of the deaths from plague to any great extent. The female death-rate from plague in these districts was, as is always the case, much higher than the male, i.e., 23·07 against 19·13, while the proportion of female to male deaths in them from respiratory diseases was 6·44 to 5·84. I am unable to give any reason for the high death-rates from respiratory diseases in the districts mentioned above. But judging from these and the still higher rates registered from respiratory diseases in many of the municipal towns, *vide* Annual Form VI B, I have no doubt that the low rates of one or less than one per 1,000 recorded under this head in the districts of Hissar, Rohtak, Gurgáon, Montgomery and Gujranwala and in most of the districts of the Ráwalpindi and Mooltán Divisions, fall considerably short of the actual mortality in them.

56. Injuries.—Under the head of injuries a total of 6,392 deaths were reported in the province during the year, compared with 6,303 in 1901. The number included 315 deaths from suicide, 451 from wounding, 4,437 from accidents and 1,189 of persons killed by snake-bite and wild beasts. As usual, the deaths from suicide were greater among females than in males, being in the proportion of 172 to 143. The largest number of deaths due to wounding was 62 in Lahore, 43 in Ráwalpindi and 37 in Amritsar. The mortality caused by snake-bite amounted to 1,029 against 862 in the previous year. From hydrophobia 98 deaths were reported during the year compared with 76 in 1901.

57. During the year ending 8th August 1902, there were 543 patients
 Patients treated at the Pasteur Institute. treated at the Pasteur Institute at Kasauli or 222 more than in the preceding twelve months. The number of European patients was 215, and of natives 328; the number treated last year being 146 and 175, respectively. There was no death among European patients, among the native patients there were five failures.

58. All other causes.—During the year the mortality from all other causes amounted to 152,783 at the rate of 7·6 per 1,000 of population, compared with 8·8 in the previous year. In 14 districts the death-rate from unspecified causes was above the provincial average. The lowest rates were recorded in Dera Ghazi Khan 2·4, Muzaffargarh 3·1, Miánwáli 3·2, Gurdáspur 4·4 and Hoshiárpur 4·9.

Section IX.—Sanitary Works.

59. The Annual Report of the Sanitary Engineer, Punjab, on Sanitary Works, for the year 1902, is given as Appendix B to my Report, in accordance with the instructions conveyed in paragraph 2 of Punjab Government letter No. 550, dated the 14th March 1903.

60. During the year the sale of manure in the municipal towns fetched Rs. 1,55,674 as against Rs. 1,50,471 in the previous year. The largest sums were realized in the following towns:—
Amritsar Rs. 43,131 against Rs. 40,036, in 1901, Delhi Rs. 10,809 against Rs. 14,139, Lahore 12,260 against Rs. 11,327, Siālkot Rs. 13,987 compared with Rs. 9,209, Gujranwāla Rs. 7,272 against Rs. 7,582, Mooltan Rs. 6,159 against Rs. 5,334 and Ludhiāna Rs. 3,793 against Rs. 5,531.

61. During the year 5,771 wells were cleared and 1,523 parapets constructed at a cost of Rs. 34,242, showing a considerable increase as compared with the previous year. Great progress in this respect has been made in the districts of Mooltan, Hoshiārpur, Gujranwāla, Jhang, Karnāl, Gujrat, Miānwāli, Gurdāspur, Siālkot, Ferozepore, Rohtak, Montgomery and several others. In the Mooltan district as many as 2,498 wells were cleared and 1,113 parapets constructed at a cost of Rs. 15,136.

62. The District Board of Kāwalpindi paid a reward of Rs. 155 to village communities and it was distributed by 1st, 2nd and 3rd prizes. The amount of the prizes was paid as part of the land revenue demand. The allotment of Rs. 200 sanctioned by the District Board, Muzaffargarh, was not availed of during the year. In the Gujrat district, the District Board agreed to pay rewards to two villages in each tahsīl which showed the best results, but no rewards were allowed during the year. The Deputy Commissioner, Gujranwāla, states "that the question of the importance of village sanitation is every now and then prominently brought to the notice of village communities through their representatives who attend the meetings of the District Board, but it is to be regretted that no village with any pretensions to cleanliness has yet come forward to claim the reward lately offered by the District Board for this purpose." The Deputy Commissioner, Jhang district, states "that the Jhang District Board has arranged to carry out Government proposal by selecting a village which showed interest in village sanitation and Rs. 50 per village has been sanctioned by the District Board to be paid towards the revenue of the village. Tahsīldārs report that no application was received for the grant of the reward in question. They have, however, been directed to see to this when they inspect villages when on tour." In the Siālkot district the Deputy Commissioner states that the granting of rewards for the best kept villages will be considered during the current year. In connection with this subject the Deputy Commissioner, Jullundur, states, "that last year a sanitary sub-committee was appointed by the District Board to submit a quarterly report on the sanitation of villages. These reports are regularly submitted. At the request of the sub-committee all the lambardārs were addressed to arrange for the cleaning of their villages by sweepers paid from a *bachh*. It is reported that in seven villages of the Jullundur Tahsīl and in the whole of the Nakodar Tahsīl the above arrangements have been carried out and are working fairly well."

63. In the district of Hissar 955 villages were supplied with the sanitary note books. Of this number 151 were inspected by the Civil Surgeon, Tahsīldārs, Naib Tahsīldārs and field Kánungos at the time of visiting the villages, and necessary remarks on the sanitary condition of the villages were recorded by them in these books. The Deputy Commissioner, Karnāl, states that village sanitary note books were maintained in 28 unhealthy villages of the Karnāl, Panipat, Kaithal and Thanesar Tahsīls, and they supply valuable information to the

inspecting officers regarding sanitary improvements. It is intended to extend the system to other villages. In the Gurdáspur district sanitary note books have been maintained in 24 villages. The Deputy Commissioner, Siálkot, states that all the notified areas, 9 in number, have been supplied with village note books. In the Sháhpur district the village sanitary inspection note book has been tried in 16 villages. In the Ráwalpindi district 135 villages were supplied with the village sanitary note books. The Deputy Commissioner, Miánwáli, states "that 12 chief villages of this district were, in consultation with the Civil Surgeon, supplied with village sanitary inspection books during the year under report and necessary instructions as to their proper maintenance and regular record of remarks by officers of the district staff were issued. The Tahsildárs and Naib-Tahsildárs make their remarks in the note books on occasional visits to these villages and send them on to the Civil Surgeon in order that the information may be abstracted for permanent record in his office. The books may prove useful in giving information to the inspecting officers regarding the sanitary improvements in villages, and, if successful, the system will be extended to other villages also."

64. During the year 1901-02, the following works of public utility were constructed by private individuals at their own expense to serve sanitary purposes:—

One pucca *dharmshala* at Bhiwani in the Hissár district was built by Lala Lachhi Ram, son of Lala Siri Ram, *Mahajan* of Bhiwani, at a cost of Rs. 6,300. In the Rohtak district, Baldeo Sahai, son of Tuchha Ram, *Mahajan* of Jhajjar, constructed a pucca well and a bungalow on the Jhajjar-Rewari road at a cost of Rs. 3,000. Two *dharmshalas* and two wells on the Rewari-Jatusana road in the Gurgáon district were constructed by Badri Parshad, and Sansari Mal, *Mahajans* of Rewari, at a cost of Rs. 2,000 each. Mussammat Bhagwan Dai, widow of Lachman Dás, *Bania* of Delhi, constructed a *dharmshala* and well at Naranda on the Delhi-Gurgáon road at a cost of Rs. 4,000. Jagan, son of Neiki, Jat of Sonapat in the Delhi district, constructed a *dharmshala* and a pucca well on the Juan-Chatana village road near Sonapat at a cost of Rs. 1,200. In the Umballa district a pucca serai (rest-house) at Bilaspur was constructed by Nand Lal and Kirpa Ram, sons of Hazari Mal, *Bania* of Bilaspur, at a cost of Rs. 4,125.

In the Muzaffargarh district, Tahlia Ram, son of Thakri Ram, *Mahajan*, Kukeja of Khairpur, constructed a pucca *Musafar Khana* (rest-house) at Khairpur at a cost of Rs. 1,480. Chaudri Narain Singh and Sita Kishen, sons of Chaudri Khem Singh, Babla of Shujabad in the Mooltan district, constructed a kacha-pucca serai, together with a well, for the use of travellers at the Railway Station, Shujabad, at a cost of Rs. 4,381.

Section X—General Remarks and Personal Proceedings.

65. During the year I was in charge of the office of the Sanitary Commissioner, Punjab, up to 8th July, when I proceeded to England on three months' privilege leave. During my absence Captain E. Wilkinson, I.M.S., carried on my duties in addition to his own as Chief Plague Medical Officer, Punjab. I resumed charge of my duties on the forenoon of the 7th of October. The appointment of Deputy Sanitary Commissioner, Punjab, was held from 1st January to the 30th June by Captain E. Wilkinson in addition to his duties as Chief Plague Medical Officer, and from 1st July to the end of the year by Captain W. F. Harvey, I.M.S. As Captain Wilkinson throughout the tenure of his office was employed on special plague duty as Chief Plague Medical Officer, Punjab, and as Captain W. F. Harvey, I. M. S., was busy in the performance of the experiments regarding the protective efficiency of Vaseline Lymph, referred to in Punjab Government letter No. 410, of the 29th March 1899, they both were unable to pay full attention to their ordinary sanitary work.

66. In January I proceeded to Mung Rasul Jail accompanied by Lieutenant-Colonel Little, I. M. S., to inquire into the cause of cerebro-spinal fever prevailing in that jail, then visited the Miánwáli district and inspected the sanitation and vaccination of the towns of Isakhel and Bhakkar and some 16 villages. In February I inspected the sanitation and vaccination of the town of Leiah and 50 large and small villages. I then proceeded to Dera Gházi Khan, Muzaffargarh, Mooltan, Shujabad and Jalapur. At the request of the Manager, N.-W. Railway, I visited Bhatinda, to advise on the water supply for the Railway community of that station. On my return I inspected vaccination in the villages of the Lahore Tahsil and inspected the town of Kasur. After this I had to go to Delhi to inspect sites for Camps for the Coronation Durbar. In March I went to Thanesar to meet the Commissioner to advise what should be done to improve the arrangements for the Eclipse Fair. I then visited Delhi and Ferozepore, and after that went to Sirsa, Hánsi, Hissár and Bháwáni to investigate the cause of the high death-rate from fever and next inspected Karnál. In April I visited Kalka, Kasauli and went to Jullundur city to consult with the Commissioner regarding vaccination in the plague infected areas, and thence proceeded to Delhi in connection with the sanitary arrangements of the Coronation Durbar. I then went on inspection duty to Ráwalpindi and Gujrát and visited Murree to inspect the Animal Lymph Depôt. In May I inspected the Lawrence Memorial Asylum at Murree and also the towns of Gujránwála and Lyallpur, and went up to Kasauli to inspect the Lawrence Military Asylum at Sanawar. After this I visited Pathankot and Dalhousie, then inspected the city of Lahore and went up to Simla. In July I went on 3 months' privilege leave, and on my return in October I had to visit Delhi on several occasions, and finally halted at Delhi from November till the end of January acting as Administrative Medical and Sanitary Officer of the Delhi Coronation Durbar in addition to my other duties.

67. In my capacity as Professor of Hygiene, I delivered the usual number of lectures to the students of the Medical College, Lahore.
Lectures on Hygiene.

68. Captain E. Wilkinson visited the following municipal towns :—Amritsar, Jullundur, Nakodar, Pasrur, Kila Sobha Singh, Siálkot, Khusháb, Zafarwal, Shakargarh, Gurdáspur, Batála, Delhi, Umballa, Rupar, Kálka, Gujrát, Patháankot, Lalhousie and Ferozepore. Captain Harvey visited the towns of Amritsar, Umballa, Murree,

Inspection work of Deputy Sanitary Commissioner.

Ráwalpindi, Miánwáli, Lyallpur, Mooltan and Jullundur. In addition to the above Captain Wilkinson visited 29 villages and Captain Harvey 57.

69. During the year the Civil Surgeons inspected 156 towns and 1,401 villages compared with 182 towns and 1,111 villages in the previous year. The Assistant Surgeons inspected 29 towns and 75 villages compared with 28 towns and 205 villages in the year 1901. The largest number was inspected by the Civil Surgeons of Hoshiárpur, Siálkot, Muzaffargarh, Gujránwála and Ludhiána districts.

70. With regard to the gratuitous distribution of quinine it appears that in the districts of Hissár, Gurgáon, Kángra, Hoshiárpur, Ferozepore, Siálkot, Gujránwála, Gujrát, Jhelum, Ráwalpindi, Miánwáli, Jhang and Dera Gházi Khan quinine was distributed by Vaccinators, Zaildárs, Lumbardárs and the Medical Staff. In the Ferozepore district the sum of Rs. 586 was spent by the District Board on quinine during the year. In the Ráwalpindi district the grant for this purpose was raised by the District Board from Rs. 200 to 300 per annum. In the Muzaffargarh district the annual supply of quinine has been increased from Rs. 100 to Rs. 300. From a note received from the Office of the Inspector-General of Civil Hospitals, Punjab, it appears that Civil Surgeons have no concern with the sale of pice packets of quinine at Post Offices. Since December the work of selling quinine to Post Offices for sale to the public has been transferred to the Lahore Central Jail.

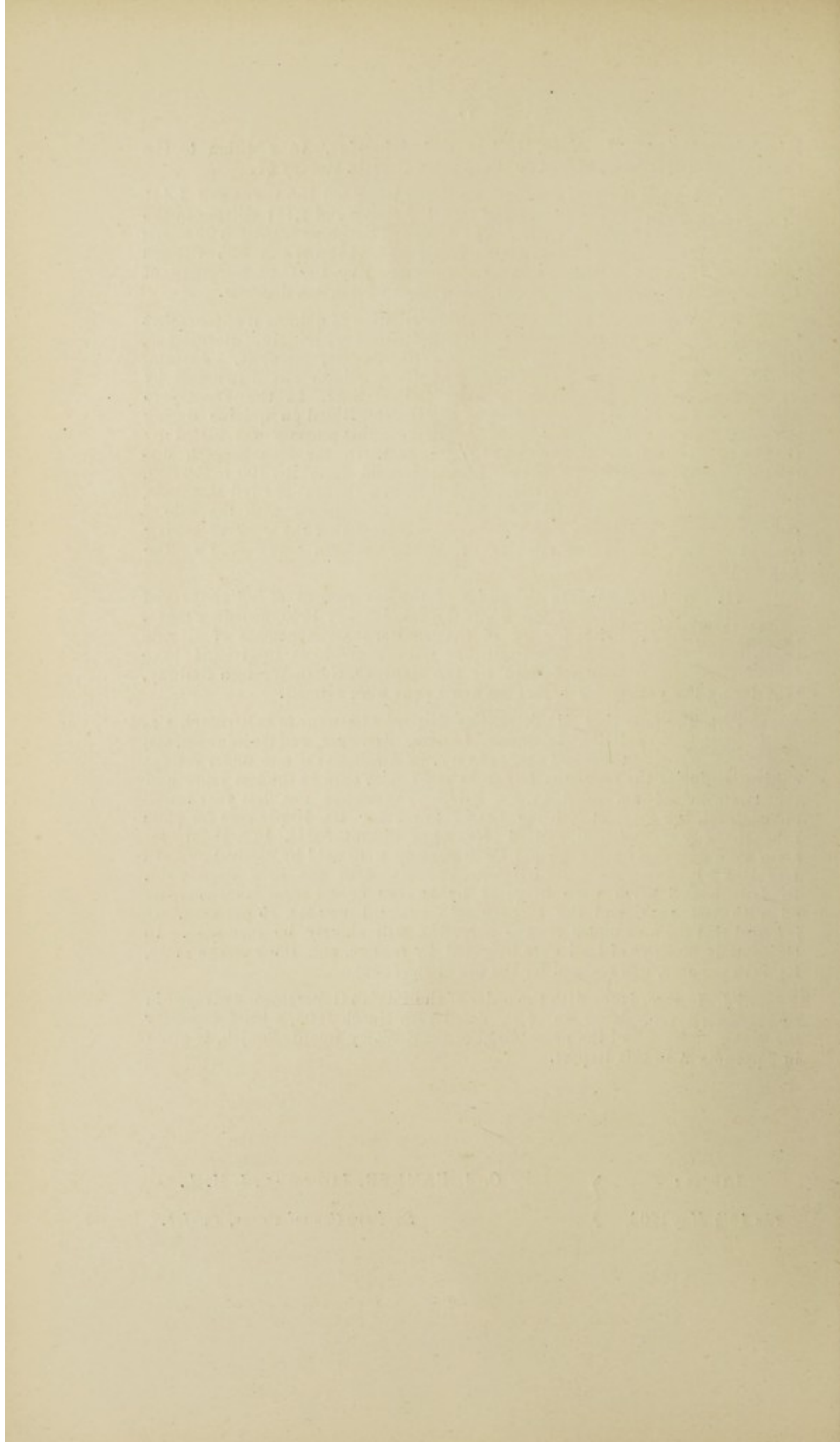
71. With reference to the order of the Government of India conveyed in letter No. 57, of the 8th January 1900, directing that a brief history of the sanitary arrangements of all new towns formed within railway precincts be given, I have been informed by the Manager, North-Western Railway, that during the year under report no new towns were formed.

72. The following Municipalities dispose of sewage to cultivators, viz., Delhi, Ludhiána, Lahore, Amritsar and Gujránwála, and the prices charged vary. In Amritsar the area under sewage cultivation during the year was 383 acres or 63 more than in the last year, and the total income amounted to Rs. 3,148. The sewage was last year leased on contract, the contractor being bound to recover Rs. 10 per acre for plots near the city and Rs. 6 and 4 for more distant fields. In Delhi 23 acres were irrigated by sewage and Rs. 8 per acre were paid by cultivators. In Ludhiána 36 acres were under irrigation and Rs. 4-10 per acre were paid. In Lahore 203 acres were irrigated by sewage or 36 acres more compared with last year, and the average rate realized was Rs. 15 per acre. It is hoped that the area under sewage irrigation will shortly be increased. In Gujránwála 30 acres of land were irrigated by sewage, and the average rate, Rs. 7-13 per acre, was realized for the use of the sewage.

73. In accordance with the order of the Punjab Government conveyed in letter No. 550, dated 14th March 1903, a brief summary of the proceedings of the Sanitary Board, Punjab, is given in Appendix A to this Report.

LAHORE :
The 15th May 1903.

C. J. BAMBER, LIEUT.-COL., I. M. S.,
Sanitary Commissioner, Punjab.



APPENDIX A.

PROCEEDINGS OF THE SANITARY BOARD.

The Sanitary Board, Punjab, met seven times during the year 1902. The following is a brief account of the work done by the Board :—

(1). *Simla Bazar Drainage*.—The papers in connection with this scheme were forwarded to the Local Government for sanction.

(2). *Rāwalpindi Drainage Scheme*.—The papers regarding this scheme were forwarded to the Local Government with the suggestion that for the drainage project originally sanctioned by Government, the amended one should be substituted.

(3). *Amritsar water-supply*.—The new site was approved by Government and the work is now in progress.

(4). *Water Main, Simla*.—The scheme in connection with the distribution system of the water main, Simla, was referred to the Sanitary Engineer, Punjab, and his suggestions were put before a meeting of the Board and recorded.

(5). *Extramural drainage of Mooltan*.—The scheme was approved of generally as explained by the Sanitary Engineer, and he (the Sanitary Engineer) was directed to refer it to the local Executive Engineer to work out further details; the Sanitary Engineer was also asked to communicate with the Commissioner, Mooltan Division, on the subject of raising the necessary loan.

(6). *Extramural drainage of Ferozepore City*.—This scheme was approved by the Board and the papers connected with it were referred to the Commissioner, Jullundur Division, for necessary action.

(7). *Gojra Drainage Scheme*.—The papers relating to this scheme were approved by the Board and forwarded to the Commissioner, Mooltan Division, for transmission to Government.

(8). *Toba Tek Singh Drainage Scheme*.—This scheme was approved by the Board and the papers in connection with it were forwarded to the Commissioner, Mooltan Division, for transmission to Government.

(9). *Sangla Drainage Scheme*.—The scheme for Sangla was approved by the Board subject to certain recommendations of the Sub-Committee of the Sanitary Board and the papers relating to it were forwarded to the Commissioner, Lahore Division, for necessary action.

(10). *Distribution system of the Simla water-works and for providing fire protection at the new Civil Secretariat, Government of India and the Foreign Office*.—The scheme was approved by the Board and the connected papers were forwarded to the Commissioner, Delhi Division, for further action.

(11). *Construction of 26 trench wells at Lahore*.—The estimate was approved by the Board and forwarded to the Commissioner, Lahore Division, for disposal.

(12). *Scheme for sinking additional supply wells in the Lahore Fort Parade-ground*.—An application has been made to the Military authorities for the sanction of the sinking of the additional supply wells.

(13). *Selecting of sites for new towns*.—With regard to the subject of the selection of towns in colonies a copy of the Resolution, passed at the Meeting of the Sanitary Board, Punjab, dated 26th September 1902, regarding Toba Tek Singh, was forwarded to the Financial Commissioner, Punjab, for communication to the Settlement Commissioner and Colonization Officers. A copy of the same was also forwarded to the Secretary to Government, Punjab, Public Works Department, Buildings and Roads Branch, with the suggestion that sites for new towns should, where possible, be selected by a Committee on which the Sanitary authorities should be represented.

(14). *Note on the condition of the Lahore Roads*.—The note was forwarded to the Municipal Committee, Lahore, through the Commissioner of the Lahore Division for opinion.

(15). *Note on the question of putting down a deep tube boring to test the yield of the subsoil water by the air-lift system.*—The proposals mentioned in the note were approved by the Board, and an application was made to Government for a grant of Rs. 18,000 to defray the cost of putting down an experimental plant at Lahore.

(16). *Executive Powers and annual allotment of funds to the Sanitary Board by Government.*—The Notes by the Sanitary Engineer, Punjab, and the Secretary, Sanitary Board, Punjab, were brought up three times before the Board, and finally a Sub-Committee of the Sanitary Board was appointed to look into the matter, and the proposals, after the approval of the Board, were submitted to Government for sanction. The Government in October 1902 sanctioned Rs. 2,500 to the Board to meet charges in connection with (a) the conduct of experiments which, in the opinion of the Board, are likely to be of use in furthering sanitation; and (b) the execution of small local works of more or less emergent character when delay would result by obtaining formal sanction. This amount was sanctioned for the financial year 1902-1903 and for future financial years. In the letter in which Government sanctioned the above-mentioned Rs. 2,500, it was also stated that the Sanitary Board should submit an estimate of the sum likely to be required in 1903-1904 as grants-in-aid to help Local Bodies to an extent not exceeding one-third of the cost of carrying out any project approved by the Board as an urgent necessity. This estimate (for Rs. 30,000) has been submitted to Government and sanction is awaited.

C. J. BAMBER, LIEUT.-COL., I.M.S.,
 SECRETARY AND MEMBER, SANITARY BOARD, PUNJAB,
Sanitary Commissioner, Punjab.

APPENDIX B.

ANNUAL REPORT OF THE SANITARY ENGINEER TO GOVERNMENT, PUNJAB, FOR THE YEAR 1902.

Mr. E. DuCane Smithe held charge of the post of Sanitary Engineer to Government up to the 30th October 1902. Mr. C. E. Goument held charge from that date to the end of the year.

2. Statement A, attached, gives a list of projects prepared in the Sanitary Engineer's office or under his supervision during the year under review. Statement B gives a list of Sanitary Works under construction.

3. There were two Divisions under the direct superintendence of the Sanitary Engineer:—

(1) The Simla Extension Works Division.

(2) The Amritsar Special Works Division.

The former was in existence throughout the year. The latter was formed on the 5th November 1902.

4. *Simla*.—The Simla Extension Works Division comprises all the Sanitary Works for the extension of Simla, amounting to Rs. 11,76,490, which are as follows:—

	Rs.
(1) Additional Feed Reservoir at Charot Nala Pumping Station	9,052
(2) Lower gravitation pipe supply to Charot Nala Pumping Station	2,08,902
(3) Seog Storage Reservoir	1,79,398
(4) Extension of the Sewerage System	5,29,103
(5) Drainage of Simla Bazaars	92,300
(6) Separation of drinking and flushing water supplies	5,470
(7) Increasing the volume of water obtained by gravitation	76,212
(8) Making a high level pipe line round Jakko	31,589
(9) Extension of the present distribution system of water supply	44,464

Of these Nos. 1, 2, 3, 6, 7, and 8 have been completed. The remainder are in hand.

5. The sewerage system of Simla formerly consisted of three 9" mains leading from Boileauganj, Bara Simla and Chota Simla to a waterfall in the Lalpani valley. This system has been extended by the laying of additional sewage mains and branches to serve all parts of the station. There are now five distinct systems which work independently and lead to five different outfalls in the valleys below the station. A sufficient quantity of water is available in the streams at each of these outfalls to dilute the sewage to a strength of 10 gallons per head in the driest time of the year, and for the greater part of the year, to 15 gallons per head. The sewage is delivered in conservancy pails to 29 depôts situated at convenient points in the station at the head of each main, and, from these depôts, it is to be flushed down the mains to the outfalls. There will be disposal works at each outfall to treat the sewage before it is discharged into the stream. The laying of all the mains (about 18 miles) was practically completed by the end of the year, and most of the pail depôts were constructed, but the disposal works were still in the experimental stage.

6. A small installation was erected in 1901 at the main outfall at Lalpani for the biological treatment of about 10,000 gallons of sewage a day. A macerating tank (after an English design suggested by Mr. Santo Crimp) was first tried with contact filter beds of stone. The results were not satisfactory as stated in last year's report. An installation, consisting of a septic tank and a continuous filter, was under trial during the year under review. It was brought into regular action from April 1902 and for some months gave satisfactory results. The dilution at first was 60 to 1, i.e., 60 gallons of water to 1 gallon of pipe sewage, which, at Simla, is equivalent to 60 gallons per head (1 gallon of pipe sewage being the approximate yield per head of population). The dilution was gradually reduced and the strength of the raw sewage correspondingly increased till a strength of 17 to 1 was reached on the 18th September 1902.

Analysis of the effluents continued to show fair results up to the end of the year as may be seen from the following reports for the 28th November and 11th December 1902 :—

				Oxygen absorbed in 4 hours.	
				Parts per 100,000.	
				28-11-02.	11-12-02.
Raw sewage	...	...	...	16.13	17.60
Septic tank effluent	..	...	...	2.58	2.08
Filter effluent	...	...	...	1.29	1.12

The septic tank worked satisfactorily throughout, giving a purification towards the end of the year of over 80 per cent. The increase of sludge at the bottom of the tank was not excessive, its depth on the 11th December 1902 being 2'-10" at the inlet end and 0'-8" at the outlet.

The continuous filter was not so satisfactory, though analysis of its effluent showed good results. In October, it began to show signs of clogging and the upper layers of ballast had to be raked to prevent the liquid from heading up in the filter and overflowing its sides. This raking operation had to be repeated with greater frequency towards the end of the year to keep the filter working, and on one occasion it was found necessary to scour out the entire filter with clean water.

7. A larger installation, to treat 40,000 gallons a day, was under construction at the end of the year at the Kasumpti outfall. Slight structural alterations, based on the experience gained at the smaller installation, have been introduced into the details of the Kasumpti septic tank and continuous filter which will, it is hoped, secure better results.

8. A project amounting to Rs. 92,300 for the drainage of the Simla Bazaars was sanctioned and the work was put in hand. When completed, this work will be of material benefit to the station in removing a serious nuisance. At present the streets and ravines of the bazaars are in a most objectionable condition from a sanitary point of view.

9. An estimate amounting to Rs. 44,464 for enlarging and improving the existing distribution system of water supply in Simla was submitted for sanction to the Government of India. When this work has been carried out, better pressures will be available for ordinary service and for the protection from fire of all the costly public buildings between the Church and Viceregal Lodge.

10. *Amritsar*.—The Amritsar Special Works Division was formed to carry out the Amritsar City water-works and to prepare projects for extending and improving the existing drainage works, extra-mural and intra-mural. An estimate, amounting to Rs. 12,50,511, was sanctioned by the Government of India for the Amritsar water-works in January 1901. The site originally selected for the supply wells was found to be objectionable as it was more or less in a swamp and another site was selected last year by Mr. DuCane Smithe on higher ground about a mile nearer the town. This necessitated a revision of the former estimate. The estimate, as revised, amounts to Rs. 10,49,935. The work has been commenced and was making good progress at the end of the year. Little or no progress was made with the drainage projects as the Executive Engineer of the newly formed Division was busy up to the end of the year, making preliminary arrangements for starting the water-works.

11. *Lahore*.—The Municipal Committee of Lahore consulted the Sanitary Engineer on the works noted below :—

The first three were put in hand during the year. Detailed projects are being worked out for Nos. 4 and 5 by the Municipal Engineer in consultation with the Sanitary Engineer.

- (1) Extension of the pipe distribution system over the whole of the city and civil station.
- (2) The erection of a second new pumping engine.
- (3) The sinking of new trench wells to permit of a larger supply being pumped.
- (4) A steam tramway to remove refuse from the city.
- (5) Improvement of the main extra-mural intercepting drain round the city.

At the suggestion of Mr. DuCane Smithe, Sanitary Engineer, His Honour the Lieutenant-Governor has been pleased to sanction the trial of a deep tube boring at Lahore on Hughes and Lancaster's air-lift system to raise water from a depth of 160 feet below ground surface. An indent has been sent home to the Director-General of Stores for the plant.

Mr. J. Harwood, A.M.I.C.E., was appointed Municipal Engineer on a salary of Rs. 1,000 per mensem with effect from the 10th July 1902.

12. *Delhi*.—Work on the Delhi intra-mural drains could not be resumed during the year, as the Committee had not completed arrangements to raise the necessary loan for the work. It is hoped that negotiations for funds will be concluded very shortly, and that the work will be put in hand early in 1903.

An estimate, amounting to Rs. 25,818, was prepared for the Committee by the Sanitary Engineer to put in a second intercepting sewer in the Chándni Chowk on the north side of the street for convenient connection with the branch drains on that side. This estimate was passed by the Sanitary Board and approved by the Chief Engineer.

The suburbs of Pahárganj, Subzi Mandi and Sadar Bazaar were surveyed for drainage schemes.

The water-supply extension works, recently constructed, worked satisfactorily during the year and fully met all the demands of the city and the camp during the Darbár. About 2 million gallons a day were delivered during the Darbár week without the slightest strain on the engines or the head-works.

13. *Umballa City*.—The extra-mural portion of the drainage scheme, estimated to cost Rs. 43,130, was commenced and was well advanced at the end of the year. The estimate for the intra-mural drainage was under preparation.

The head-works of the city water supply were inspected and a report submitted recommending the construction of four more wells. The hot weather consumption has increased about 50 per cent. since the water-works were first made and the wells are now being drawn on under an excessive head to meet the summer demand. An aermotor pump erected by the Local Government at the head-works as an experiment was also inspected and a report submitted on its working for the past year. The report was favourable.

14. *Kálka*.—A project for increasing the water supply of Kálka, amounting to Rs. 42,837, was prepared and, after sanction by the Local Government, handed over for execution to the Chief Engineer of the Kálka-Simla Railway. The cost of these extension works will be met jointly by the Punjab Government, the East Indian Railway and the Kálka-Simla Railway. They will provide an additional supply of 100,000 gallons a day from the Kasoulia stream.

15. *Lyallpur*.—The drainage works of this town were put in hand and good progress was made with them. The estimate amounts to Rs. 79,091. Water-works were also started and orders placed with Messrs. James Simpson and Co. for the pumping machinery and iron service tanks. Amount of estimate Rs. 1,28,585.

16. *Ferozepore City*.—A project, amounting to Rs. 40,000, had been prepared for the extra-mural drainage of Ferozepore city, but it was found, on taking further levels along the proposed outfall, that the outlet in that direction for storm water would not be quite satisfactory. A revised project was therefore taken in hand for a separate sewerage system which will deal with sewage only and exclude storm water.

17. *Mooltan*
Ráwalpindi City.—Rough proposals, amounting to Rs. 66,190 and Rs. 1,02,000, respectively, were submitted for Mooltan and Ráwalpindi city drainage works and approved by the Sanitary Board. Detailed projects were in hand.

18. Several minor drainage schemes for small towns were prepared which do not need special mention. They will be found entered in Statement A attached.

19. The Sanitary Engineer submitted the following special reports to the Local Government :—

- (a) On the water supply for the head-quarters station of Miánwáli in the newly formed district of the same name,
- (b) On the laying out of a new native town at Sargoda, the proposed head-quarters of the Jhelum Canal Colony, with proposals for drainage and water supply.
- (c) On the water supply and drainage of the site proposed for the head-quarters of the new Campbellpur District.

20. The Sanitary Engineer was consulted by Local Bodies regarding the following works :—

- (1). Ráwalpindi City water works.
- (2). Improvement of the drainage outfall of Karnál City.
- (3). Jhelum City drainage.
- (4). Umballa City water-supply.
- (5). Drainage of the Batála slaughter-house.

21. When estimates are prepared or schemes examined by the Sanitary Engineer, fees calculated as percentages on the cost of the work are charged. The fees earned during the year under review are given in Statement C.

22. With a view to help Local Bodies to take up urgent sanitary works which have had to be shelved for want of funds, the Local Government has decided to place an annual grant in future years at the disposal of the Sanitary Board to enable it to contribute towards the cost of such works up to a maximum limit of one-third the total cost. The Local Government has further sanctioned a yearly grant of Rs. 2,500 to meet charges in connection with (a) the conduct of experiments which, in the opinion of the Board are likely to be of use in furthering sanitation, and (b) the execution of small local works of a more or less emergent character when delay would result by obtaining formal sanction through the official channel. Expenditure under (a) will be a final charge against Provincial Funds, but the outlay incurred under (b) will be eventually recovered in each case from the Local Body concerned.

C. E. V. GOUMENT,

Offg. Sanitary Engineer to Government, Punjab.

STATEMENT A.

LIST OF PROJECTS FOR SANITARY WORKS PREPARED BY THE SANITARY ENGINEER OR PREPARED UNDER HIS SUPERVISION DURING 1902.

PROJECTS APPROVED BY THE LOCAL GOVERNMENT OR SANITARY BOARD.		PROJECTS UNDER PREPARATION.			
		<i>In the Sanitary Engineer's office.</i>		<i>In the offices of Executive Engineers or Municipalities under the supervision of the Sanitary Engineer.</i>	
Names.	Amount of estimate.	Names.	Approximate amount of estimate.	Names.	Approximate amount of estimate.
	Rs.		Rs.		Rs.
1. Lyallpur water-works.	1,28,585	1. Ferozepore extra drainage mural works.	37,045	1. Rawalpindi City drainage.	1,02,000
2. Lyallpur drainage works.	79,091	2. Umballa City intramural drainage works.	32,000	2. Mooltan City drainage.	66,190
3. Extension of the Lahore water-supply trench wells.	28,035	3. Sargoda drainage works.	...	3. Mooltan Jail water supply.	15,000
4. Chunián drainage works.	18,176	4. Sargoda water supply.	...	4. Amritsar water-works (revised estimate).	10,49,935
5. Chiniot drainage works.	10,250	5. Muktsar drainage works.	12,428	5. Amritsar extra-mural drainage.	...
6. Gojra drainage works.	62,392			6. Improvement of Amritsar intramural drains.	...
7. Toba Tek Singh drainage works.	90,449			7. Completion of the main intercepting drain round Lahore City.	12,000
8. Sangla drainage works.	26,432				
9. Kálka water supply extension works.	42,837			8. Miánwáli civil station water supply.	50,000
10. Extension of the distribution system of Simla water supply.	44,464				

STATEMENT B.

LIST OF SANITARY WORKS UNDER CONSTRUCTION DURING 1902.

Works.	Amount.
	Rs.
1. Amritsar water-works	10,49,935
2. Simla sewerage extension works	5,29,103
3. Simla bazar drainage works	92,300
4. Extension of the Lahore water-works trench wells	28,305
5. Extension of the Lahore water-works distribution system	2,41,785
6. Lyallpur water-works	1,28,585
7. Lyallpur drainage works	79,091
8. Umballa City extramural drainage works	43,130
9. Chunián drainage works	18,716
10. Fázilka drainage works	5,000

STATEMENT C.

SHOWING FEES EARNED DURING THE YEAR 1902 ON ESTIMATES PREPARED OR SCHEMES EXAMINED BY THE SANITARY ENGINEER, PUNJAB.

Serial No.	NAMES OF PROJECTS.	FEES EARNED.		
		Fees realised.	Fees earned but not realised, as the work is to be carried out by P. W. D. for a total charge of 12 per cent. on account of establishment.	
1	2	3	4	5
		Rs. a. p.	Rs. a. p.	
1	Muktsar drainage	255 0 0	...	
2	Lahore water-supply extension	346 8 0	...	
3	Improvement to drainage of Gujranwala...	29 0 6	...	
4	Drainage of Ballabgarh	100 0 0	...	
5	Pind Dadan Khan water supply...	59 12 6	...	
6	Lahore conservancy tramway	16 0 0	...	
7	Minor sanitary works, Jhang Municipality	10 0 0	...	
8	Ferozepore drainage	163 10 0	...	
9	Sangla drainage	61 0 0	793 0 0	
10	Chauhan drainage	48 9 0	496 0 0	
11	Gojra drainage	29 6 0	1,649 0 0	
12	Toba Tek Singh drainage	91 14 0	2,800 0 0	
13	Extramural drainage of Gujrat ... ..	...	945 0 0	
14	Intramural and extramural drainage of Lyallpur.	...	2,094 0 0	
15	Water supply for Lyallpur town and civil station.	...	3,460 0 0	
16	Drainage of Chinfot road town ... ..	...	308 0 0	
17	Alterations to Fazilka drainage ... ..	...	150 0 0	
18	Extension of Kalka water supply* ... ..	...	1,350 0 0	
19	Improvements to general distribution system of water supply, Simla.	...	1,225 0 0	
	Total	1,210 12 0	15,270 0 0	

The sums entered in column 2 against items 9 to 12 were recovered from Municipalities on account of travelling allowance of the survey staff employed on the preparation of preliminary estimates for administrative sanction.

*Will be carried out for the P. W. D. by the Kalka-Simla Railway.

ANNUAL FORM No. I.

SHOWING THE BIRTHS REGISTERED IN THE DISTRICTS OF THE PUNJAB DURING THE YEAR 1902.

1	2	3			4			5			6	7	8	9			10
No.	Districts.	POPULATION ACCORDING TO CENSUS OF 1901.*			NUMBER OF BIRTHS REGISTERED.			RATIO OF BIRTHS PER 1,000 OF POPULATION.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	MEAN RATIO OF BIRTHS PER 1,000 DURING PREVIOUS FIVE YEARS.			No.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.				Males.	Females.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DELHI DIVISION.																	
1	Hissar	418,167	363,550	781,717	17,783	16,188	33,971	22.7	20.7	43.4	109.5	3.8	...	18.0	17.4	36.3	1
2	Behtak	333,217	297,455	630,672	13,322	12,212	25,534	21.1	19.4	40.5	109.1	1.1	...	20.5	18.6	39.1	2
3	Gurgaon	390,443	355,765	746,208	17,825	16,542	34,367	23.9	22.2	46.1	107.8	4.6	...	22.3	20.2	42.4	3
4	Delhi	370,103	316,895	686,998	14,754	13,063	28,417	21.5	19.9	41.4	108.0	...	5.2	21.8	20.4	43.2	4
5	Karnal	478,963	404,272	883,235	19,032	17,048	36,080	21.5	19.3	40.9	111.6	...	5.2	21.7	19.6	41.3	5
6	Umballa	419,712	343,508	763,220	15,073	13,450	28,523	19.7	17.6	37.4	112.1	...	29.2	20.5	18.6	39.0	6
7	Simla	23,012	12,567	35,579	464	316	680	10.2	8.9	19.1	115.2	...	2.2	9.2	8.1	17.3	7
JULLUNDUR DIVISION.																	
8	Kangra	396,484	367,937	764,421	14,625	13,219	27,844	18.3	17.8	35.6	106.1	2.7	...	17.2	16.3	33.5	8
9	Hoshiarpur	525,834	463,928	989,762	21,156	18,908	40,064	21.4	19.1	40.5	111.9	...	1.2	20.9	19.4	40.2	9
10	Jullundur	488,290	416,008	904,307	18,750	17,516	36,278	20.7	19.4	40.1	107.1	...	14.7	22.3	20.9	43.2	10
11	Ludhiana	369,165	303,032	672,197	12,688	12,026	24,714	18.9	17.9	36.7	105.5	...	67.2	22.2	20.7	42.9	11
12	Ferozepore	507,358	424,948	932,306	22,480	20,388	42,877	24.1	21.9	46.0	110.3	0.5	...	21.6	19.6	41.2	12
LAHORE DIVISION.																	
13	Montgomery	268,606	229,100	497,706	11,480	10,128	21,617	23.1	20.3	43.4	113.4	20.0	...	19.0	17.2	36.2	13
14	Lahore	629,360	516,660	1,146,020	28,186	25,335	53,520	24.6	22.1	46.7	111.2	...	0.1	21.7	19.2	40.8	14
15	Amritsar	558,880	463,549	1,022,429	24,471	21,272	45,743	23.9	21.8	45.7	109.0	...	2.2	23.6	21.8	45.4	15
16	Gurdaspur	507,488	429,266	936,754	23,017	21,902	44,919	25.5	23.5	49.0	108.8	...	2.0	23.3	21.8	45.0	16
17	Sialkot	565,124	506,303	1,071,427	30,173	28,069	58,242	28.2	26.2	54.4	107.5	...	12.3	25.1	23.3	48.4	17
18	Gujranwala	485,200	405,317	890,517	21,129	18,702	39,831	23.7	21.0	44.7	112.0	4.7	...	22.6	20.2	42.8	18
RAWALPINDI DIVISION.																	
19	Gujrat	389,402	361,146	750,548	20,387	18,680	39,067	27.2	24.9	52.1	109.1	15.8	...	20.5	18.8	39.3	19
20	Shahpur	273,144	251,115	524,259	12,354	11,350	23,704	23.6	21.6	45.2	108.8	13.3	...	20.2	18.7	38.9	20
21	Jhelum	297,854	294,916	592,770	13,354	11,833	25,187	22.6	20.0	42.6	112.9	7.8	...	18.8	16.8	35.6	21
22	Rawalpindi	463,704	422,360	886,064	20,129	17,839	37,968	22.7	20.1	42.9	112.8	9.5	...	18.9	17.1	36.0	22
MOOLTAN DIVISION.																	
23	Mianwali	224,008	200,580	424,588	9,531	8,285	17,816	22.4	19.5	42.0	115.0	14.9	...	20.8	18.0	38.7	23
24	Jhang	559,296	443,361	1,002,656	24,087	21,296	45,383	24.0	21.2	45.3	113.1	15.3	...	15.6	13.8	29.4	24
25	Mooltan	379,769	318,090	697,859	17,626	16,021	33,647	25.3	23.0	48.2	110.0	20.4	...	21.7	19.6	41.3	25
26	Muzaffargarh	230,207	185,449	415,656	8,944	7,798	16,742	22.0	19.2	41.3	114.7	11.4	...	21.1	18.6	39.7	26
27	Dera Ghazi Khan	255,448	214,469	469,917	8,958	7,449	16,405	19.1	15.9	34.9	120.2	10.7	...	17.0	13.9	30.9	27
Total ...		10,798,255	9,310,435	20,108,690	461,962	418,525	880,477	23.0	20.8	43.8	110.4	...	0.3	20.9	19.1	40.0	

*Note.—Excluding population of military cantonments.

† The figures of Montgomery, Gujranwala and Jhang in this and other forms do not correctly represent the mean ratio for five years on account of the inclusion of the statistics of the Chenab Colony for shorter period.

ANNUAL FORM

STATEMENT OF BIRTHS AND DEATHS REGISTERED IN EACH

1 Serial No.	2 DISTRICTS.	3 Area in square miles.	4 Average population per square mile.	5 POPULATION (CENSUS 1901).			6 BIRTHS.	
				Males.	Females.	Total.	Total number.	Birth-rate per 1,000 of population.
1	2	3	4	5	6	7	8	9
DELHI DIVISION.								
1	Hissár	5,217	150	418,167	363,550	781,717	33,921	43.4
2	Rohtak	1,797	351	383,217	297,455	680,672	25,534	40.5
3	Gurgaon	1,984	376	390,443	355,765	746,208	34,367	46.1
4	Delhi	1,290	533	370,103	316,895	686,998	28,417	41.4
5	Karnál	3,153	280	478,953	404,272	883,225	36,080	40.9
6	Umballa	1,851	412	419,742	343,508	763,250	28,523	37.4
7	Simla	101	352	23,012	12,567	35,579	680	19.1
JULLUNDUR DIVISION.								
8	Kángra	9,978	77	396,484	367,957	764,441	27,244	35.6
9	Hoshiárpur	2,244	441	525,854	463,928	989,782	40,064	40.5
10	Jullundur	1,481	632	488,299	416,008	904,307	36,275	40.1
11	Ludhiána	1,455	463	369,165	303,932	673,097	24,714	36.7
12	Ferozepore	4,802	217	507,258	424,948	932,206	42,877	46.0
LAHORE DIVISION.								
13	Montgomery	4,771	104	268,606	229,100	497,706	21,617	43.4
14	Lahore	3,704	309	629,360	516,669	1,146,029	53,520	46.7
15	Amritsar	1,601	639	558,889	463,549	1,022,438	46,743	45.7
16	Gurdáspur	1,889	496	507,488	429,296	936,784	45,903	49.0
17	Siálkot	1,991	538	565,124	506,203	1,071,327	58,242	54.4
18	Gujránwála	3,198	278	485,260	405,317	890,577	39,831	44.7
RAWALPINDI DIVISION.								
19	Gujrát	2,051	366	389,402	361,146	750,548	39,067	52.1
20	Shahpur	4,840	108	273,144	251,115	524,259	23,704	45.2
21	Jhelum	3,995	148	297,854	292,916	590,770	25,187	42.6
22	Ráwalpindi	4,850	183	463,704	422,309	886,014	37,968	42.9
MOOLTAN DIVISION.								
23	Miánwáli	7,816	54	224,008	200,580	424,588	17,816	42.0
24	Jhang	6,652	151	559,295	443,361	1,002,656	45,383	45.3
25	Mooltan	6,107	114	879,769	318,090	697,859	33,647	48.2
26	Muzaffargarh	3,635	112	220,207	185,449	405,656	16,742	41.3
27	Dera Gházi Khan	5,306	89	255,448	214,499	469,947	16,405	34.9
Total for the Province		97,209	207	10,798,255	9,310,435	20,108,690	880,477	43.8

NOTE.—Those born dead are not included

No. II.

DISTRICT OF THE PUNJAB DURING THE YEAR 1902.

7			8	9											10			11
NUMBER OF DEATHS REGISTERED.			Number of deaths of males to every 100 deaths of females.	DEATHS PER 1,000 OF POPULATION FROM											MEAN RATIO OF DEATHS PER 1,000 DURING PREVIOUS FIVE YEARS.			Serial No.
Males.	Females.	Total.		Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	All causes.			Males.	Females.	Total.	
												Males.	Females.	Total.				
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
16,672	14,278	30,950	116.8	...	0.1	0.003	30.7	0.5	0.7	0.3	7.3	39.9	39.3	39.6	47.5	49.0	48.2	1
13,371	11,497	24,868	116.3	...	0.01	...	31.2	0.4	0.3	0.2	7.5	40.1	38.7	39.4	38.9	39.4	39.1	2
16,287	14,680	30,967	110.9	0.2	0.2	0.01	29.7	1.2	0.9	0.4	8.9	41.7	41.3	41.5	35.1	35.2	35.2	3
16,775	15,205	31,980	110.3	0.01	0.02	0.003	31.5	1.3	2.7	0.3	10.6	45.3	48.0	46.6	34.6	39.4	37.1	4
21,581	19,170	40,751	112.6	0.03	0.1	0.6	33.5	0.6	2.6	0.3	8.5	45.1	47.4	46.1	43.2	47.7	45.3	5
25,385	25,406	50,791	99.9	0.2	0.2	30.0	20.7	1.3	5.9	0.2	8.0	60.5	74.0	66.6	39.5	46.0	42.4	6
406	290	756	160.7	...	1.1	0.2	8.8	1.6	1.4	0.5	7.7	20.3	23.1	21.3	18.6	25.9	21.2	7
12,464	12,710	25,174	98.1	0.1	0.04	0.01	22.7	0.9	1.8	0.4	7.2	31.4	34.5	32.9	30.1	32.1	31.3	8
19,796	21,497	41,293	92.1	...	0.7	13.0	15.9	0.7	6.3	0.3	4.9	37.7	46.3	41.7	30.2	33.5	31.7	9
22,747	26,771	49,518	85.0	...	1.1	10.2	20.7	0.7	4.8	0.2	8.1	46.6	64.4	54.8	29.2	36.7	32.7	10
33,361	36,554	69,915	91.3	...	0.1	70.8	17.7	0.6	4.5	0.3	9.8	90.4	120.3	103.9	87.2	45.6	41.1	11
21,298	21,080	42,378	101.0	0.601	0.4	6.9	27.3	0.4	1.6	0.3	8.6	42.0	49.6	45.5	40.6	45.9	43.0	12
6,153	5,475	11,628	112.4	...	1.1	0.002	12.1	0.3	0.5	0.3	9.1	22.9	23.9	23.4	26.3	28.3	27.2	13
26,573	27,048	53,621	98.2	0.001	0.8	10.3	21.5	0.6	2.7	0.4	10.5	41.2	52.4	46.8	33.3	37.5	35.2	14
24,589	24,425	49,014	100.7	...	0.6	4.1	38.9	0.9	6.4	0.3	6.7	44.0	52.7	47.9	32.0	38.8	35.1	15
22,736	25,053	47,789	90.7	...	0.5	15.7	19.5	1.5	9.1	0.3	4.4	44.8	58.4	51.0	32.2	36.6	34.3	16
32,505	38,993	71,498	83.4	...	0.5	26.4	25.2	1.1	5.3	0.2	8.1	57.5	77.0	66.7	32.9	36.9	34.8	17
18,065	17,544	35,609	103.0	0.01	0.2	4.2	26.4	0.3	1.1	0.5	7.2	37.2	43.3	40.0	27.2	30.3	28.6	18
13,754	13,494	27,248	101.9	...	0.6	0.7	20.0	0.6	2.9	0.3	11.3	35.3	37.4	36.3	27.9	27.6	27.5	19
8,539	8,161	16,700	104.6	...	2.2	0.02	18.0	0.7	1.1	0.4	9.5	31.3	32.5	31.9	26.4	26.6	26.5	20
10,590	9,946	20,536	106.4	...	1.0	...	24.8	0.5	0.4	0.3	7.8	35.6	34.0	34.8	30.5	29.4	29.9	21
15,195	14,379	29,574	105.7	0.002	0.7	0.001	23.7	0.6	0.9	0.4	7.2	32.8	34.0	33.4	28.6	29.3	28.9	22
5,989	5,502	11,491	108.9	...	0.7	...	21.9	0.6	0.4	0.3	3.2	26.7	27.4	27.1	31.1	31.6	31.3	23
16,958	13,995	30,953	114.7	...	0.6	0.2	21.3	0.4	0.4	0.3	6.7	28.7	31.6	30.0	29.3	22.5	21.3	24
10,096	9,283	19,379	108.8	...	1.0	0.02	18.7	0.4	0.4	0.4	6.8	26.6	29.2	27.8	24.6	27.5	26.0	25
6,358	5,787	12,145	109.8	...	1.9	...	23.0	0.3	1.2	0.5	3.1	28.9	31.2	29.9	27.8	30.1	28.8	26
6,070	5,277	11,347	115.0	...	1.1	...	19.6	0.3	0.6	0.3	2.4	23.8	24.6	24.1	23.0	23.5	23.2	27
443,473	443,500	886,973	100.0	0.02	0.6	8.5	23.5	0.7	2.8	0.3	7.6	41.1	47.6	44.1	32.2	35.4	33.7	

in this or any other statement.

ANNUAL FORM No. III.

DEATHS REGISTERED IN THE DISTRICTS OF THE PUNJAB DURING EACH MONTH OF THE YEAR 1902.

1	2	3												4	5
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths registered during the year	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DELHI DIVISION.															
1	Hissar	3,609	2,962	3,331	3,084	2,506	1,890	1,685	2,069	1,914	2,568	2,825	2,567	30,950	1
2	Rohtak	2,269	2,136	1,828	1,712	2,192	1,418	1,110	1,973	1,780	3,211	2,857	2,382	24,868	2
3	Gurgaon	2,578	2,255	2,569	2,389	2,566	2,225	1,762	2,400	2,977	3,553	3,078	2,615	30,967	3
4	Delhi	2,790	2,440	2,617	2,690	2,892	2,151	1,740	2,226	2,410	3,413	3,352	3,259	31,980	4
5	Karnal	4,197	3,721	4,361	3,727	3,463	3,023	1,991	2,577	2,856	3,312	3,765	3,758	40,751	5
6	Umballa	3,343	4,675	9,642	10,203	5,695	2,402	1,342	1,813	2,860	3,158	2,704	2,954	50,791	6
7	Simla	61	56	45	76	70	72	74	61	80	59	48	54	756	7
JULLUNDUR DIVISION.															
8	Kangra	1,897	1,731	1,740	2,443	1,987	1,750	1,774	2,104	2,695	2,989	1,900	2,164	25,174	8
9	Hoshiarpur	4,535	4,326	5,112	4,270	3,401	2,084	1,793	2,101	2,641	3,471	3,483	4,076	41,293	9
10	Jullundur	5,119	5,835	8,083	7,274	4,490	1,947	1,839	2,109	2,332	3,003	3,555	3,932	49,518	10
11	Ludhiana	4,383	7,970	20,986	18,066	5,054	1,425	1,159	1,383	1,751	2,592	2,815	2,361	60,915	11
12	Ferozepore	3,924	3,352	4,849	5,426	3,500	1,927	1,811	1,935	2,176	3,805	5,069	4,604	42,378	12
LAHORE DIVISION.															
13	Montgomery	1,781	1,213	1,071	854	879	683	669	723	705	818	991	1,211	11,628	13
14	Lahore	4,769	4,300	6,418	7,092	6,944	3,386	2,511	2,525	2,504	3,353	4,043	4,876	53,621	14
15	Amritsar	4,088	3,285	3,597	4,174	5,571	3,626	2,891	2,803	2,794	4,344	5,443	6,398	49,014	15
16	Gurdaspur	4,650	5,030	6,399	5,856	4,895	2,780	2,183	2,514	2,916	3,524	3,489	3,553	47,789	16
17	Sialkot	7,456	8,266	11,568	14,188	8,623	2,918	2,354	2,805	2,761	3,397	3,478	3,684	71,498	17
18	Gujranwala	3,296	3,028	2,949	2,828	4,919	2,445	2,129	2,021	1,752	3,054	3,330	3,834	35,609	18
RAWALPINDI DIVISION.															
19	Gujrat	3,444	3,056	3,273	2,807	2,292	1,530	1,345	1,593	1,722	2,262	2,303	2,181	27,248	19
20	Shahpur	1,605	1,531	1,528	1,251	1,440	1,220	1,133	1,202	945	1,307	1,579	1,959	16,700	20
21	Jhelum	2,089	1,894	1,890	1,367	1,532	1,223	1,293	1,357	1,387	2,091	2,393	2,110	20,536	21
22	Rawalpindi	2,824	2,813	2,594	2,143	2,020	1,931	1,830	2,018	2,118	2,831	3,090	3,362	29,574	22
MOOLTAN DIVISION.															
23	Mianwali	1,115	1,050	1,127	935	1,079	844	687	772	685	837	1,175	1,185	11,491	23
24	Jhang	3,614	2,611	2,436	2,387	2,567	1,785	1,801	2,103	1,859	2,252	2,889	3,749	30,059	24
25	Mooltan	2,144	1,693	1,604	1,508	1,758	1,310	1,305	1,230	1,314	1,620	1,933	1,960	19,379	25
26	Muzaffargarh	1,296	965	1,045	984	1,015	850	744	799	756	1,131	1,350	1,210	12,145	26
27	Dera Ghazi Khan	1,055	965	846	884	1,185	834	677	890	827	930	1,023	1,231	11,347	27
Total for the Province		83,925	83,129	113,418	111,018	84,535	49,679	41,632	48,106	51,577	68,825	73,960	77,169	886,973	
Ratio of deaths per 1,000 in each month		4.17	4.13	5.64	5.52	4.20	2.47	2.07	2.39	2.56	3.42	3.68	3.84	44.11	

ANNUAL FORM No. IV.

**DEATHS REGISTERED ACCORDING TO AGE IN THE DISTRICTS OF THE
PUNJAB DURING THE YEAR 1902.**

ANNUAL FORM

DEATHS REGISTERED ACCORDING TO AGE IN THE

1	2	3		4		5		6		7	
No.	DISTRICTS.	UNDER ONE YEAR.		ONE YEAR AND UNDER 5 YEARS.		5 YEARS AND UNDER 10 YEARS.		10 YEARS AND UNDER 15 YEARS.		15 YEARS AND UNDER 20 YEARS.	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1	2	3	4	5	6	7	8	9	10	11	12
DELHI DIVISION.											
1	Hissar	4,544	3,697	1,616	1,592	880	824	696	583	602	434
2	Rohtak	3,315	2,776	1,761	1,499	920	841	657	567	591	531
3	Gurgaon	4,268	3,755	2,889	2,873	894	815	501	409	460	264
4	Delhi	4,346	3,912	2,248	2,336	726	706	432	391	570	449
5	Karnal	5,165	4,567	2,306	2,119	1,001	908	715	663	763	575
6	Umballa	4,090	3,856	2,068	2,031	1,277	1,346	1,435	1,570	1,405	1,288
7	Simla	89	76	21	33	7	8	18	6	14	17
JULLUNDUR DIVISION.											
8	Kangra	3,874	3,677	1,221	1,276	551	566	434	428	374	563
9	Hoshiarpur	4,663	4,327	2,841	3,065	730	880	889	1,150	771	833
10	Jullundur	4,696	5,446	2,964	3,161	1,334	1,650	1,262	1,665	1,017	1,263
11	Ludhiana	3,737	4,111	2,380	2,374	2,135	2,484	2,681	3,469	2,273	2,138
12	Ferozepore	5,584	5,467	2,367	2,361	1,295	1,380	1,045	1,162	1,070	1,051
LAHORE DIVISION.											
13	Montgomery	2,235	1,990	883	797	315	319	146	175	127	101
14	Labore	6,507	5,832	4,068	3,743	1,746	1,991	1,193	1,952	1,174	1,303
15	Amritsar	6,028	6,391	4,765	4,382	1,422	1,454	890	1,173	825	959
16	Gurdaspur	5,524	5,044	4,230	4,464	1,075	1,307	1,111	1,489	839	1,080
17	Siālkot	6,450	6,231	6,087	6,187	2,614	3,370	2,090	2,785	1,613	2,078
18	Gujranwāla	4,593	4,190	4,341	3,987	1,270	1,315	657	814	496	520
RAWALPINDI DIVISION.											
19	Gujrat	3,834	3,603	4,057	3,852	1,010	993	305	358	305	279
20	Shahpur	2,660	2,487	1,972	1,940	600	563	235	218	151	137
21	Jhelum	2,695	2,633	1,532	1,555	727	674	518	471	448	391
22	Rawalpindi	4,297	4,004	2,409	2,586	811	840	479	454	404	432
MOOLTAN DIVISION.											
23	Mianwali	1,995	1,710	899	948	316	331	180	155	131	107
24	Jhang	5,131	4,595	2,236	1,818	1,389	1,097	959	780	707	628
25	Mooltan	3,804	3,607	1,262	1,218	444	416	272	277	228	237
26	Muzaffargarh	1,983	1,764	921	937	354	354	256	199	204	170
27	Dera Ghāzi Khan	1,725	1,398	1,152	1,059	455	413	244	206	181	151
Total for the Province ...		107,832	101,216	65,531	64,193	26,298	27,840	20,288	23,569	17,687	17,974
Ratio per 1,000 living ...		316.44	320.76	62.16	65.93	17.58	21.68	15.02	23.18	17.84	22.81

No. IV.

DISTRICTS OF THE PUNJAB DURING THE YEAR 1902.

8		9		10		11		12		13		14
20 YEARS AND UNDER 30 YEARS.		30 YEARS AND UNDER 40 YEARS.		40 YEARS AND UNDER 50 YEARS.		50 YEARS AND UNDER 60 YEARS.		60 YEARS AND UPWARDS.		TOTAL.		No.
Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
13	14	15	16	17	18	19	20	21	22	23	24	25
1,557	1,317	1,274	1,195	1,565	1,219	1,474	1,100	2,464	2,317	16,672	14,278	1
783	757	864	848	1,026	907	1,371	1,066	2,083	1,705	13,371	11,497	2
1,388	1,117	1,264	1,304	1,357	1,094	1,213	1,088	2,053	1,961	16,287	14,680	3
1,541	1,394	1,538	1,372	1,519	1,215	1,713	1,408	2,142	2,022	16,775	15,205	4
2,184	1,807	2,068	2,095	2,365	1,958	2,050	1,655	2,964	2,828	21,581	19,170	5
2,964	2,947	2,999	3,115	3,067	2,892	2,455	2,477	3,625	3,884	25,385	25,406	6
64	34	79	32	54	22	40	15	82	47	466	290	7
822	1,395	1,002	1,077	983	838	942	697	2,261	2,193	12,464	12,710	8
1,624	1,945	1,690	1,986	1,760	1,921	1,594	1,658	3,234	3,662	19,796	21,497	9
1,801	2,266	1,988	2,531	1,846	2,331	1,783	1,881	4,056	4,577	22,747	26,771	10
4,108	4,150	3,751	4,454	4,001	4,578	3,474	3,679	4,821	5,122	33,361	36,554	11
1,611	1,751	1,582	1,696	1,799	1,731	2,013	1,757	2,932	2,724	21,298	21,080	12
325	294	317	277	375	329	389	327	1,036	766	6,153	5,475	13
2,127	2,527	2,126	2,362	2,076	2,100	1,742	1,585	3,784	3,633	26,573	27,048	14
1,625	1,906	1,668	1,702	1,620	1,497	1,618	1,277	4,138	3,684	24,589	24,425	15
1,820	2,386	1,897	2,375	1,768	2,068	1,537	1,561	2,935	3,273	22,736	25,053	16
2,680	3,501	2,641	3,888	2,366	3,343	2,046	2,727	3,918	4,883	32,505	38,993	17
1,098	1,206	1,032	1,262	1,068	1,051	972	914	2,544	2,285	18,065	17,544	18
573	718	617	751	591	651	621	530	1,841	1,759	13,754	13,494	19
379	404	345	421	358	367	407	377	1,432	1,247	8,539	8,161	20
595	642	633	666	651	550	668	568	2,123	1,796	10,590	9,946	21
1,067	1,109	1,246	1,273	1,114	962	971	702	2,397	2,017	15,195	14,379	22
287	374	401	401	375	325	406	315	999	836	5,989	5,502	23
662	629	895	881	1,286	1,214	1,918	1,593	875	760	16,058	13,995	24
617	724	701	693	647	516	613	425	1,508	1,170	10,096	9,283	25
473	530	489	501	398	347	402	284	878	701	6,358	5,787	26
344	426	387	425	365	306	390	245	877	668	6,070	5,277	27
35,119	38,236	35,494	39,703	36,400	36,332	34,822	31,911	64,002	62,526	443,473	443,500	
19'81	23'69	23'80	30'31	34'01	38'62	49'79	55'17	96'60	112'41	41'07	47'63	

ANNUAL FORM No. V.

DEATHS REGISTERED ACCORDING TO CLASSES IN THE DISTRICTS OF THE PUNJAB DURING THE YEAR 1902.

1	2	3					4					5					6
No.	DISTRICTS.	POPULATION ACCORDING TO CENSUS OF 1901.					NUMBER OF DEATHS REGISTERED.					RATIO OF DEATHS PER 1,000 OF POPULATION.					No.
		Muhammadans.	Hindús.	Native Christians.	Other classes.	Total.	Muhammadans.	Hindús.	Native Christians.	Other classes.	Total.	Muhammadans.	Hindús.	Native Christians.	Other classes.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DELHI DIVISION.																	
1	Hissár ...	202,009	579,444	53	211	781,717	7,185	23,764	1	...	30,950	35'57	41'01	18'87	...	39'59	1
2	Rohtak ...	91,687	538,904	41	40	630,672	3,305	21,563	...	...	24,868	36'05	40'01	...	...	39'43	2
3	Gurgáon ...	242,548	503,381	221	58	746,208	10,750	20,210	5	2	30,967	44'32	40'15	22'62	34'48	41'50	3
4	Delhi ...	166,655	517,633	2,042	668	686,998	7,531	24,313	77	59	31,980	45'19	46'79	37'71	88'32	46'55	4
5	Karnál ...	241,412	640,630	225	958	883,225	10,819	29,930	2	...	40,751	44'82	46'72	8'89	...	46'14	5
6	Umballa ...	224,679	537,612	959	...	763,250	14,039	36,747	5	...	50,791	62'48	68'35	5'21	...	66'55	6
7	Simla ...	5,560	27,770	368	1,881	35,579	156	596	4	...	756	28'06	21'46	10'87	...	21'25	7
JULLUNDUR DIVISION.																	
8	Kángra ...	39,534	720,389	203	4,315	764,441	1,169	24,002	3	...	25,174	29'57	33'32	14'78	...	32'93	8
9	Hoshiárpur ...	312,958	676,009	785	30	989,782	12,727	28,564	2	...	41,293	40'67	42'25	2'55	...	41'72	9
10	Jullundur ...	416,691	487,234	276	106	904,307	21,965	27,553	...	...	49,518	52'71	56'55	...	...	54'76	10
11	Ludhiána ...	235,937	436,212	415	583	673,097	25,540	44,360	15	...	69,915	108'25	101'69	36'14	...	103'87	11
12	Ferozepore ...	436,995	494,966	240	5	932,206	18,963	23,415	...	...	42,378	43'39	47'31	...	...	45'46	12
LAHORE DIVISION.																	
13	Montgomery	355,892	141,439	314	61	497,706	8,872	2,756	...	...	11,628	24'93	19'49	...	...	23'36	13
14	Lahore ...	711,171	428,753	2,990	3,115	1,146,029	37,257	16,316	47	1	53,621	52'39	38'05	15'72	0'32	46'79	14
15	Amritsar ...	474,457	546,208	1,492	281	1,022,438	22,432	26,535	45	2	49,014	47'28	48'58	30'16	7'12	47'94	15
16	Gurdáspur ...	462,996	469,346	4,198	244	936,784	22,427	25,292	53	17	47,789	48'44	53'89	12'63	69'67	51'01	16
17	Siáikot ...	710,778	349,867	10,662	20	1,071,327	47,632	23,244	315	307	71,498	67'01	66'44	29'54	?	66'74	17
18	Gujránwála ...	603,464	281,439	5,592	82	890,577	27,056	8,412	140	1	35,609	44'83	29'89	25'04	12'20	39'98	18
RAWALPINDI DIVISION.																	
19	Gujrát ...	655,838	94,250	241	219	750,548	23,682	3,535	8	23	27,248	36'11	37'51	33'20	105'02	36'30	19
20	Shahpur ...	442,921	81,247	21	70	524,259	14,396	2,298	...	16	16,700	32'48	28'28	...	228'57	31'85	20
21	Jhelum ...	525,884	64,673	111	102	590,770	17,274	3,261	1	...	20,536	32'85	50'42	9'01	...	34'76	21
22	Ráwalpindi ...	786,627	98,373	514	550	886,064	26,333	3,086	6	149	29,574	33'48	31'37	11'67	270'91	33'38	22
MOOLTAN DIVISION.																	
23	Miánwáli ...	371,674	52,870	16	28	424,588	10,111	1,329	...	51	11,491	27'20	25'14	...	?	27'06	23
24	Jhang ...	687,164	309,999	5,420	73	1,002,656	21,639	8,248	165	1	30,053	31'49	26'61	30'44	13'70	29'97	24
25	Mooltan ...	565,557	131,852	198	252	697,859	15,936	3,396	1	46	19,379	28'18	25'76	5'05	182'54	27'77	25
26	Muzaffargarh	350,177	55,446	17	16	405,656	10,487	1,649	...	9	12,145	29'95	29'74	...	562'50	29'94	26
27	D. G. Khau ...	411,315	58,530	81	21	469,947	9,815	1,515	...	17	11,347	23'86	25'88	...	809'52	24'15	27
Total for the Province ...		10,732,580	9,324,476	37,695	13,939	20,108,690	449,488	435,889	895	701	886,973	41'88	46'75	23'74	50'29	44'11	

ANNUAL FORM No. VI.

**DEATHS REGISTERED FROM DIFFERENT CAUSES IN THE DISTRICTS (RURAL
CIRCLES) OF THE PUNJAB DURING THE YEAR 1902.**

ANNUAL FORM

DEATHS REGISTERED FROM DIFFERENT CAUSES IN THE DISTRICTS

1	2	3	4	5	6	7	8	9	10		
No.	A.—RURAL CIRCLES.	Population according to Census of 1901.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	INJURY		
									Suicide.		Wounding and accidents.
									Males.	Females.	
1	2	3	4	5	6	7	8	9	10	11	12
DELHI DIVISION.											
1	Hissár	693,044	...	38	...	21,810	159	337	3	3	147
2	Rohtak	576,415	...	7	...	18,479	90	112	2	6	76
3	Gurgáon	678,503	126	125	4	20,629	659	471	11	47	210
4	Delhi	457,658	2	6	...	14,190	469	482	8	17	102
5	Karnál	790,607	29	50	184	27,419	298	1,476	1	3	179
6	Umballa	698,479	140	164	21,152	14,871	792	4,166	3	2	124
7	Símila	21,449	...	27	5	109	44	15	...	...	3
JULLUNDUR DIVISION.											
8	Kángra	751,945	38	29	5	17,129	617	1,286	4	5	21
9	Hoshiárpur	923,773	...	556	11,684	14,732	538	5,787	5	1	184
10	Jullundur	780,950	...	734	15,765	17,087	318	3,481	7	7	157
11	Ludhiána	586,560	...	63	41,282	10,694	186	2,250	6	9	128
12	Ferozepore	881,750	1	388	6,126	24,139	273	1,273	3	11	218
LAHORE DIVISION.											
13	Montgomery	477,936	...	552	1	5,839	119	189	...	...	87
14	Lahore	906,019	...	648	11,071	20,157	297	1,169	7	7	252
15	Amritsar	842,618	...	484	3,668	23,325	710	5,164	8	8	189
16	Gurdáspur	871,990	...	214	14,100	16,855	1,290	8,193	7	4	190
17	Siálkot	994,914	...	502	26,707	25,538	1,014	5,048	9	4	176
18	Gujránwála	822,871	...	145	3,189	22,194	138	621	4	7	296
RAWALPINDI DIVISION.											
19	Gujrát	709,017	...	436	353	14,370	347	1,838	6	1	154
20	Shahpur	471,938	...	995	5	8,634	238	491	1	...	125
21	Jhelum	565,297	...	582	...	13,933	168	220	3	4	134
22	Ráwalpindi	819,219	2	476	...	19,647	333	533	3	...	232
MOOLTAN DIVISION.											
23	Miánwáli	305,033	...	278	...	8,768	154	128	1	...	86
24	Jhang	954,602	...	617	136	20,461	325	340	3	1	261
25	Mooltan	601,975	...	526	12	11,524	66	71	2	2	174
26	Muzaffargarh	393,253	...	743	...	9,058	105	484	1	3	139
27	Dera Gházi Khan	428,705	...	452	...	8,498	61	159	6	6	79
Total of the Rural Circles ...		18,114,729	338	9,837	155,449	429,489	9,808	45,734	114	158	4,818

No. VI.

(RURAL CIRCLES) OF THE PUNJAB DURING THE YEAR 1902.

		11	12	13										14
RIMS.		All other causes.	Total deaths from all causes.	RATIO OF DEATHS PER 1,000 OF POPULATION.										No.
Snake-bite and killed by beasts.	Total.			Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		
13	14			15	16	17	18	19	20	21	22	23	24		25	26	27
36	189	4,082	26,115	...	0.05	...	30.75	0.23	0.49	0.27	5.89	37.68	46.86	1
7	91	4,085	22,864	...	0.01	...	32.06	0.16	0.19	0.16	7.09	39.67	39.31	2
32	300	6,013	28,327	0.19	0.18	0.01	30.40	0.97	0.69	0.44	8.86	41.75	35.12	3
46	173	4,881	20,203	0.004	0.01	...	31.01	1.02	1.05	0.38	10.67	44.14	36.51	4
54	237	6,395	36,088	0.04	0.06	0.23	34.29	0.37	1.85	0.30	7.99	45.13	44.76	5
21	150	5,425	46,860	0.20	0.23	30.28	21.29	1.13	5.96	0.21	7.77	67.09	43.34	6
1	4	112	316	...	1.26	0.23	5.08	2.05	0.70	0.19	5.22	14.73	17.78	7
48	273	5,883	24,760	0.05	0.04	0.01	22.78	0.62	1.71	0.36	7.16	32.93	31.24	8
37	227	4,417	37,941	...	0.60	12.65	15.95	0.58	6.26	0.25	4.78	41.07	31.40	9
11	182	6,270	43,837	...	0.93	19.96	21.63	0.40	4.41	0.23	7.94	55.49	32.54	10
11	154	5,615	60,244	...	0.11	70.38	18.23	0.22	3.84	0.26	9.57	102.71	40.72	11
25	257	7,574	40,031	0.001	0.44	6.95	27.38	0.81	1.44	0.29	8.59	45.40	43.20	12
60	147	4,806	11,153	...	1.15	00.02	12.23	0.25	0.40	0.31	9.01	23.34	27.21	13
73	339	9,415	43,006	...	0.72	12.22	22.25	0.33	1.29	0.37	10.39	47.67	35.49	14
30	235	5,710	39,296	...	0.67	4.35	27.68	0.84	6.13	0.28	6.77	46.62	34.33	15
47	248	3,611	44,511	...	0.25	16.17	19.23	1.48	9.40	0.28	4.14	51.05	34.27	16
47	236	7,901	66,946	...	0.50	26.84	25.67	1.02	5.07	0.24	7.94	67.29	34.81	17
123	430	5,565	32,282	...	0.18	3.88	26.97	0.17	0.75	0.52	6.76	39.23	28.36	18
41	202	7,917	25,363	...	0.61	0.50	20.13	0.49	2.59	0.28	11.17	35.77	27.13	19
51	177	4,505	15,045	...	2.11	0.01	16.29	0.50	1.04	0.38	9.55	31.88	26.08	20
24	165	4,337	19,405	...	1.03	...	24.65	0.30	0.39	0.29	7.67	34.33	29.81	21
45	280	5,685	26,956	0.002	0.58	...	23.98	0.41	0.65	0.34	6.94	32.90	28.73	22
31	118	1,218	16,634	...	0.70	...	22.20	0.29	0.32	0.30	3.08	27.00	31.27	23
49	314	6,027	28,220	...	0.65	0.14	21.43	0.34	0.36	0.33	6.31	29.56	20.87	24
80	258	3,853	16,316	...	0.87	0.02	19.14	0.11	0.12	0.43	6.40	27.09	25.56	25
70	213	1,043	11,596	...	1.89	...	23.03	0.27	1.10	0.54	2.65	29.49	28.51	26
21	112	781	10,063	...	1.05	...	19.82	0.14	0.37	0.26	1.82	23.47	22.37	27
1,121	5,711	182,126	788,492	0.02	0.54	8.58	23.71	0.54	2.52	0.32	7.29	43.53	33.38	

ANNUAL FORM

DEATHS REGISTERED FROM DIFFERENT CAUSES IN THE

1	2	3	4	5	6	7	8	9	10				
No.	B.—Towns.	Population according to Census of 1901.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	INJURIES.				
									Suicide.		Wounding and accidents.	Snake-bite and killed by wild beasts.	Total.
									Males.	Females.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
HISSAR DISTRICT.													
1	Hissar	17,647	...	...	...	900	43	71	...	...	5	1	6
2	Hansi	16,523	...	...	...	443	54	39	...	...	5	...	5
3	Bhiwani	35,917	...	9	2	740	86	87	...	...	7	...	7
4	Sirona	15,800	...	...	...	547	19	33	...	...	2	...	2
5	Fatehabad	2,786	...	...	...	74	11	7	...	...	2	...	2
ROHTAK DISTRICT.													
6	Rohtak	19,766	...	...	...	336	26	23	...	...	5	...	5
7	Jhajjar	12,227	...	...	...	207	37	10	...	...	...	...	...
8	Beri	9,722	...	1	...	237	31	8	...	...	3	...	3
9	Gohana	6,567	...	1	...	207	29	11	...	...	1	...	1
10	Bahadurgarh	5,974	...	...	...	193	6	...	...	...	1	...	1
GURGAON DISTRICT.													
11	Rewari	27,295	...	...	...	378	64	46	1	2	7	1	11
12	Palwal	12,830	...	...	1	386	20	17	...	...	4	...	4
13	Farrukhnagar	6,136	...	...	...	126	29	41	...	1	1	...	2
14	Firozpur	7,278	...	...	...	219	38	18	...	...	2	...	2
15	Sohna	6,024	...	2	...	261	31	44	...	...	...	1	1
16	Hodal	8,142	...	2	...	177	35	33	...	...	4	1	6
DELHI DISTRICT.													
17	Delhi	206,534	1	7	2	6,666	374	1,325	2	...	32	3	37
18	Sonepat	12,990	1	...	...	441	44	41	...	...	2	...	2
19	Balabgarh	4,506	...	...	...	169	23	5	...	...	...	...	...
20	Faridabad	5,310	...	...	...	195	10	7	...	...	...	2	2
KARNAL DISTRICT.													
21	Karnal	22,703	...	19	13	684	85	212	...	2	7	1	10
22	Kaithal	14,408	...	6	234	535	41	123	...	5	3	1	9
23	Panipat	26,914	...	1	...	557	59	252	1	...	4	3	8
24	Ladwa	3,518	...	...	...	82	12	68	...	...	1	...	1
25	Shahabad	11,009	...	...	136	192	27	108	...	...	4	...	4
26	Thanesar	5,066	...	4	2	82	7	27	1	...	...	...	1
UMBALLA DISTRICT.													
27	Umballa	26,744	2	7	746	250	83	167	1	...	13	...	14
28	Jagadhri	13,462	16	...	200	259	43	91	...	...	2	1	3
29	Barya	5,865	...	...	...	134	33	28	...	...	1	...	1
30	Sadhaura	9,812	4	...	...	184	15	24	...	...	1	1	2
31	Rupar	8,888	...	1	804	64	16	45	...	...	2	...	2
SIMLA DISTRICT.													
32	Simla	14,130	...	13	1	205	12	34	...	...	11	1	12
KANGRA DISTRICT.													
33	Kangra	4,746	...	...	...	76	21	27	1	...	1	...	2
34	Dharmasala	3,288	...	...	2	44	7	18	...	1	2	...	3
35	Narpur	4,462	...	1	3	84	9	16	...	...	...	...	...
HOSHIARPUR DISTRICT.													
36	Hoshiarpur	17,037	...	67	380	222	55	168	2	...	6	...	8
37	Khampur	3,183	...	11	79	50	20	16	...	...	...	...	...
38	Hariana	6,005	...	15	243	59	26	45	...	...	2	...	2
39	Garhdiwala	3,652	...	1	2	44	8	31	...	...	1	...	1
40	Dasuya	6,404	...	2	2	128	26	43	...	...	1	...	1
41	Tanda Umar	10,247	...	31	241	214	12	29	...	...	3	1	4
42	Miani	6,118	...	8	...	115	22	7	...	...	...	...	...
43	Mukerian	3,589	...	8	1	64	6	24	...	...	1	...	1
44	Una	4,746	...	16	1	40	10	50	...	...	...	...	...
45	Anandpur	5,028	...	1	188	43	12	30	...	...	...	...	...

No. VI.

TOWNS OF THE PUNJAB DURING THE YEAR 1902.

11	12	13										14
All other causes.	Total deaths from all causes.	RATIO OF DEATHS PER 1,000 OF POPULATION.										No.
		Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		
										For the year.	Mean of previous five years.	
15	16	17	18	19	20	21	22	23	24	25	26	27
379	1,399	...	...	...	51'00	2'44	4'01	0'34	21'48	79'28	57'99	1
357	898	...	...	...	26'81	3'27	2'36	0'30	21'61	54'35	45'86	2
642	1,573	...	0'25	0'06	20'60	2'39	2'42	0'19	17'87	43'80	57'72	3
237	838	...	...	...	34'62	1'20	2'09	0'13	15'00	53'04	74'24	4
33	127	...	...	...	26'56	3'95	2'51	0'72	11'84	45'59	59'15	5
216	606	...	...	...	17'00	1'32	1'16	0'25	10'93	30'66	32'56	6
169	423	...	...	...	16'93	3'03	0'82	...	13'82	34'60	34'79	7
124	404	...	0'10	...	24'38	3'19	0'82	0'31	12'75	41'55	44'02	8
86	335	...	0'15	...	31'37	4'42	1'68	0'15	13'10	51'01	41'63	9
36	236	...	...	...	32'31	1'00	...	0'17	6'03	39'50	42'45	10
257	756	...	...	...	13'85	2'34	1'69	0'40	9'42	27'70	31'81	11
101	529	...	...	0'08	30'09	1'46	1'33	0'31	7'87	41'23	40'92	12
38	236	...	...	...	20'53	4'73	6'68	0'33	6'19	38'46	39'31	13
82	361	...	0'14	...	30'09	5'22	2'47	0'27	11'40	49'60	34'24	14
47	386	...	0'33	...	43'33	5'15	7'30	0'17	7'80	64'08	40'64	15
120	372	...	0'25	...	21'74	4'30	4'05	0'61	14'74	45'69	34'68	16
2,285	10,637	0'004	0'03	0'01	32'28	1'81	6'42	0'18	11'06	51'79	38'91	17
113	642	0'08	...	...	33'95	3'39	3'16	0'15	8'70	49'42	30'16	18
15	211	...	...	...	37'28	5'10	1'11	...	3'33	46'83	35'55	19
13	227	...	...	...	36'72	1'88	1'32	0'28	2'45	42'75	35'86	20
256	1,279	...	0'84	0'57	30'13	3'74	9'34	0'44	11'28	56'34	51'72	21
264	1,212	...	0'42	16'24	37'13	2'85	8'54	0'62	18'32	84'12	74'03	22
419	1,296	...	0'04	...	20'70	2'19	9'36	0'30	15'57	48'15	46'25	23
50	203	...	...	...	23'31	3'41	16'49	0'28	14'21	57'71	47'53	24
55	522	...	...	12'35	17'44	2'45	9'81	0'36	5'00	47'42	33'08	25
28	151	...	0'79	0'39	16'19	1'38	5'33	0'20	5'53	29'81	35'06	26
315	1,593	0'07	0'26	27'89	9'68	3'10	6'24	0'52	11'78	59'56	35'71	27
201	813	1'19	...	14'86	19'24	3'19	6'76	0'22	14'93	60'39	30'35	28
77	273	...	...	...	22'85	5'63	4'77	0'17	13'13	46'55	36'29	29
31	260	0'41	...	...	18'75	1'53	2'45	0'20	3'16	26'50	24'64	30
60	992	...	0'11	90'46	7'20	1'80	5'06	0'23	6'75	111'61	33'73	31
163	440	...	0'02	0'07	14'51	0'85	2'41	0'85	11'54	31'14	26'38	32
39	165	...	...	...	16'01	4'42	5'69	0'42	8'22	34'77	38'14	33
35	109	...	...	0'61	13'38	2'13	5'47	0'91	10'64	33'15	23'33	34
27	140	...	0'22	0'67	18'83	2'02	3'59	...	6'05	31'38	39'13	35
108	1,008	...	3'93	22'30	13'03	3'23	9'86	0'47	6'34	59'17	36'70	36
44	220	...	3'46	24'82	15'71	6'28	5'03	...	13'82	69'12	50'83	37
33	422	...	2'50	40'47	9'66	4'33	7'49	0'33	5'50	70'27	30'91	38
26	113	...	0'27	0'55	12'05	2'19	8'49	0'27	7'12	30'94	32'58	39
62	254	...	0'31	0'31	19'99	4'06	6'71	0'16	8'12	39'66	38'60	40
42	573	...	3'03	23'52	20'88	1'17	2'83	0'39	4'10	55'92	37'92	41
30	182	...	1'31	...	18'80	3'60	1'14	...	4'90	29'75	24'78	42
23	127	...	2'23	0'28	17'83	1'67	6'69	0'28	6'41	35'39	53'39	43
30	147	...	3'37	0'21	8'43	2'11	10'54	...	6'32	30'97	30'72	44
32	306	...	0'20	37'39	8'55	2'39	5'97	...	6'36	60'86	36'32	45

DEATHS REGISTERED FROM DIFFERENT CAUSES IN THE

1	2	3	4	5	6	7	8	9	10				
No.	B.—TOWNS.	Population according to Census of 1901.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	INJURIES.				
									Suicide.	accidents.	Wounding and deaths.	Snake-bite and killed by wild beasts.	Total.
1	2	3	4	5	6	7	8	9	Males.	Females.	12	13	14
JULLUNDUR DISTRICT.													
46	Jullundur	54,455	...	76	406	651	145	350	...	...	8	2	10
47	Alawalpur	4,423	...	15	143	74	10	19	...	...	2	...	2
48	Kartarpur	10,840	...	61	5	201	21	45	1	...	3	1	5
49	Bungah	4,697	...	15	98	101	7	25	...	...	4	...	4
50	Rahon	8,651	...	2	28	60	29	211	...	...	4	1	5
51	Nawashahr	5,641	...	9	102	117	15	61	...	...	2	...	2
52	Phillour	6,986	...	6	168	203	12	62	...	...	3	...	3
53	Nurmahal	8,706	...	11	96	128	19	40	...	...	4	...	4
54	Nakodar	9,958	...	30	553	124	11	62	...	...	2	...	2
LUDHIANA DISTRICT.													
55	Ludhiāna	48,211	...	...	2,261	578	171	432	...	...	14	3	17
56	Jagraon	18,760	...	...	2,094	246	48	250	...	...	13	...	10
57	Rāikot	10,131	...	1	942	236	15	48	...	...	4	...	4
58	Khanna	3,838	...	...	541	63	7	17	...	...	2	...	2
59	Māchiwāra	5,588	...	1	551	82	5	45	...	...	1	1	2
FEROZEPUR DISTRICT.													
60	Ferozepore	23,475	...	6	25	771	27	73	...	...	6	2	8
61	Zira	4,001	...	11	...	96	4	40	...	...	2	...	2
62	Makhu	1,355	...	...	...	37	3	20	...	...	...	...	...
63	Dharmkot	6,731	...	6	275	103	24	68	...	...	1	2	3
64	Muktsar	6,389	...	...	...	131	11	25	...	...	1	...	1
65	Fāzilka	8,505	...	...	...	174	6	16	...	...	...	...	...
MONTGOMERY DISTRICT.													
66	Montgomery	6,602	...	5	...	23	3	16	...	...	2	...	2
67	Kamālia	6,976	...	...	...	89	4	5	...	...	4	2	6
68	Pākpattan	6,192	...	12	...	60	12	19	...	1	...	...	1
LAHORE DISTRICT.													
69	Lahore	186,884	1	178	130	3,497	334	1,761	3	2	70	5	80
70	Sharakpur	4,474	...	4	...	74	6	11	...	...	2	...	2
71	Chūniān	8,959	...	3	4	215	16	24	...	...	11	2	13
72	Khudīān	3,401	...	4	8	78	2	8	...	...	...	...	...
73	Kasūr	22,022	...	10	538	288	47	130	...	...	4	...	4
74	Khem Karu	6,083	...	12	62	153	9	11	...	...	1	...	1
75	Patti	8,187	...	56	1	148	9	27	...	...	4	...	4
AMRITSAR DISTRICT.													
76	Amritsar	161,039	...	125	249	5,722	221	1,243	5	...	50	4	59
77	Majitha	6,403	...	...	210	193	20	43	...	...	1	...	1
78	Jandiāla	7,750	...	29	...	182	1	46	...	...	...	...	...
79	Tarn Tāran	4,428	...	12	64	77	3	40	1	...	3	1	5
GURDASPUR DISTRICT.													
80	Gurdāspur	4,903	...	26	200	69	5	27	...	...	4	...	4
81	Dīnanagar	5,191	...	45	47	195	2	26	...	...	3	1	4
82	Kalānāur	5,251	...	4	154	126	22	16	...	...	1	...	1
83	Pathānkot	6,091	...	...	128	97	13	56	...	...	1	...	1
84	Sujānpur	5,687	...	25	35	114	8	38	1	...	2	...	3
85	Dalbousie	808	...	...	...	10	2	6	...	...	2	...	2
86	Batāia	27,365	...	58	10	633	36	141	1	...	5	2	8
87	Srigobindpur	4,380	...	44	...	105	9	9	...	...	1	...	1
88	Dera Nānak	5,118	...	8	48	98	9	39	...	...	1	...	1
SIALKOT DISTRICT.													
89	Sialkot	44,789	...	10	391	967	66	431	...	...	15	1	16
90	Daska	6,655	...	...	320	158	5	17	...	...	2	...	2
91	Jāmke	4,216	...	...	489	63	10	5	...	...	2	...	2
92	Kila Sobha Singh	3,338	...	...	8	60	13	17	...	...	...	3	3
93	Pasrūr	8,335	...	1	312	77	33	75	...	...	1	...	1
94	Zafarwāl	4,658	...	1	41	70	10	40	...	...	...	...	...
95	Nārowāl	4,422	...	3	...	84	8	37	...	...	1	...	1

No. VI—continued.

TOWNS OF THE PUNJAB DURING THE YEAR 1902.

11	12	13										14
All other causes.	Total deaths from all causes.	RATIO OF DEATHS PER 1,000 OF POPULATION.										No.
		Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		
										For the year.	Mean of previous five years.	
15	16	17	18	19	20	21	22	23	24	25	26	27
499	2,137	...	1'40	7'46	11'95	2'66	6'43	0'18	9'16	39'20	31'35	46
37	300	...	3'39	32'33	16'73	2'26	4'30	0'45	8'37	67'83	23'60	47
71	409	...	5'63	0'46	18'54	1'94	4'15	0'46	6'55	37'73	25'15	48
64	314	...	3'19	20'86	21'50	1'49	5'32	0'85	13'63	66'85	37'47	49
57	392	...	0'23	3'24	6'94	3'35	24'39	0'58	6'59	45'31	54'01	50
52	358	...	1'60	18'08	20'74	2'66	10'81	0'35	9'22	63'46	40'49	51
69	523	...	0'86	24'05	29'06	1'72	8'87	0'43	9'88	74'86	36'93	52
101	399	...	1'26	11'03	14'70	2'18	4'59	0'46	11'60	45'83	40'80	53
67	849	...	3'01	55'53	12'45	1'10	6'23	0'20	6'73	85'26	25'89	54
534	3,993	...	...	46'90	11'99	3'55	8'96	0'35	11'08	82'82	43'27	55
222	2,870	...	...	111'62	13'11	2'56	13'33	0'53	11'83	152'09	40'76	56
140	1,386	...	0'10	92'98	23'29	1'48	4'74	0'39	13'82	136'81	50'60	57
49	681	...	...	140'96	16'94	1'82	4'43	0'52	12'77	177'44	37'62	58
55	741	...	0'18	98'60	14'67	0'89	8'05	0'36	9'84	132'61	47'67	59
223	1,133	...	0'26	1'06	32'84	1'15	3'11	0'34	9'50	48'26	43'11	60
41	194	...	2'75	...	23'99	1'00	10'00	0'50	10'25	48'49	63'53	61
4	64	...	...	...	27'31	2'21	14'76	...	2'95	47'23	51'37	62
79	553	...	0'89	40'86	15'30	3'57	10'10	0'45	11'74	82'90	35'54	63
59	227	...	...	...	20'50	1'72	3'91	0'16	9'23	35'53	31'49	64
25	171	...	...	...	14'58	0'71	1'88	...	2'94	20'11	30'45	65
55	104	...	0'76	...	3'48	0'45	2'42	0'30	8'33	15'75	16'03	66
91	193	...	...	...	12'76	0'57	0'72	0'86	13'04	27'95	34'75	67
72	176	...	1'94	...	9'69	1'94	3'07	0'16	11'33	28'42	33'91	68
1,836	7,817	0'01	0'95	0'70	18'71	1'79	9'42	0'43	9'82	41'83	31'45	69
43	140	...	0'89	...	16'54	1'34	2'46	0'45	9'61	31'29	33'53	70
191	466	...	0'33	0'45	24'00	1'79	2'68	1'45	21'32	52'01	63'69	71
38	138	...	1'18	2'35	22'93	0'59	2'35	...	11'17	40'58	48'87	72
254	1,271	...	0'45	24'43	13'08	2'13	5'90	0'18	11'53	57'72	41'49	73
101	349	...	1'97	10'19	25'15	1'48	1'81	0'16	16'60	57'37	42'28	74
99	344	...	6'84	0'12	18'08	1'10	3'39	0'49	12'09	42'02	33'93	75
1,050	8,069	...	0'78	1'55	35'53	1'37	7'72	0'37	6'52	53'83	39'43	76
58	525	...	...	32'80	30'14	3'12	6'72	0'16	9'06	81'99	32'33	77
27	285	...	3'74	...	23'48	0'13	5'94	...	3'48	36'77	34'04	78
38	239	...	2'71	14'45	17'39	0'68	9'03	1'13	8'58	53'97	29'00	79
52	392	...	5'30	42'63	14'07	1'02	5'51	0'82	10'61	79'95	41'93	80
62	381	...	8'67	9'05	37'57	0'39	5'01	0'77	11'94	73'40	48'97	81
53	376	...	0'76	29'33	24'00	4'19	3'05	0'19	10'09	71'61	35'88	82
48	343	...	...	21'01	15'93	2'13	9'19	0'16	7'88	56'31	32'74	83
26	249	...	4'40	6'15	20'05	1'41	6'68	0'53	4'57	43'78	28'73	84
5	25	...	...	...	12'38	2'48	7'43	2'48	6'19	30'94	33'42	85
176	1,062	...	2'12	0'37	23'13	1'32	5'15	0'29	6'43	38'81	31'67	86
24	192	...	10'05	...	23'97	2'05	2'05	0'23	5'48	43'84	30'05	87
55	258	...	1'56	9'38	19'15	1'76	7'62	0'20	10'75	50'41	34'43	88
455	2,266	...	0'22	8'51	20'25	1'47	9'62	0'36	10'16	50'59	34'93	89
63	565	...	...	48'08	23'74	0'75	2'55	0'33	9'47	84'90	27'32	90
33	602	...	...	115'99	14'94	2'37	1'19	0'47	7'83	142'79	35'25	91
31	132	...	...	2'40	17'97	3'89	5'09	0'90	9'29	39'54	52'49	92
101	600	...	0'12	37'43	9'24	3'96	9'00	0'12	12'12	71'99	27'38	93
48	210	...	0'21	8'80	15'03	2'15	8'59	...	10'30	45'08	44'70	94
44	177	...	0'68	...	19'00	1'81	8'37	0'23	9'95	40'03	38'63	95

DEATHS REGISTERED FROM DIFFERENT CAUSES IN THE

1	2	3	4	5	6	7	8	9	10				
No.	B.—Towns.	Population according to Census of 1901.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	INJURIES.				
									Suicide.		Wounding and accidents.	Snake-bite and killed by wild beasts.	Total.
1	2	3	4	5	6	7	8	9	Males.	Females.	12	13	14
GUJRANWALA DISTRICT.													
96	Gujránwála	28,356	...	29	362	449	33	147	...	...	10	1	11
97	Wazīrabad	18,069	8	9	166	374	51	90	...	...	8	2	10
98	Eminabad	6,494	...	3	1	130	1	26	...	...	4	...	4
99	Kila Didār Singh	2,705	...	18	1	65	4	8	...	...	...	...	...
100	Akālgarh	4,961	...	7	55	136	3	17	...	...	1	...	1
101	Rāmgarh	7,121	...	...	5	176	13	24	...	...	4	1	5
GUJRAT DISTRICT.													
102	Gujrāt	19,048	...	4	153	403	34	127	...	...	10	...	10
103	Jalālpur	10,640	...	9	...	150	18	65	...	...	6	...	6
104	Kunjah	6,431	...	34	2	89	14	42	...	...	...	...	...
105	Dinga	5,412	...	...	...	64	5	85	...	...	4	1	5
SHAHPUR DISTRICT.													
106	Shahpur	5,855	...	8	...	62	13	11	...	...	1	1	2
107	Sābiwāl	9,163	...	9	...	173	12	10	...	...	1	...	1
108	Bhera	18,680	...	49	2	271	37	56	...	...	7	1	8
109	Miāni	7,220	...	3	...	142	26	10	...	...	4	...	4
110	Khushāl	11,403	...	63	2	149	23	14	...	...	4	...	4
JHELM DISTRICT.													
111	Jhelum	11,703	...	3	...	183	19	4	...	...	...	1	1
112	Pind Dādan Khan	13,770	...	22	...	504	127	12	...	...	2	...	2
RAWALPINDI DISTRICT.													
113	Rāwalpindi	47,077	...	12	...	1,057	142	210	4	...	14	1	19
114	Murree	1,517	...	...	1	29	3	13	...	...	2	...	2
115	Pindigheb	8,452	...	100	...	148	6	9	...	...	2	1	3
116	Hasro	9,799	...	1	...	108	13	52	...	...	2	...	2
MIANWALI DISTRICT.													
117	Leiah	7,546	...	7	...	73	7	4	...	...	1	...	1
118	Karor	3,243	...	5	...	45	3	3	...	...	2	...	2
119	Bhakkar	5,312	...	3	...	127	7	5	...	...	1	...	1
120	Isa Khel	7,630	...	4	...	136	16	6	2	...	...	...	2
121	Kāfābāgh	5,824	...	...	...	151	58	4	...	...	2	...	2
JHANG DISTRICT.													
122	Jhang	8,783	...	4	1	134	26	3	...	...	3	...	3
123	Maghiāna	14,415	...	10	...	189	33	11	1	...	5	...	6
124	Chinfot	15,085	...	4	38	298	17	17	...	...	7	...	7
125	Lyallpur	9,171	...	3	44	229	28	10	...	...	5	...	5
MOOLTAN DISTRICT.													
126	Mooltan	74,627	...	83	1	1,176	193	202	...	...	24	1	25
127	Kahrar	5,552	...	16	...	124	2	...	...	...	2	...	2
128	Shujabad	5,880	...	6	...	75	23	5	...	...	3	...	3
129	Jalāpur	5,149	...	20	...	86	5	7	...	...	2	1	3
130	Talamba	2,526	...	...	...	35	4	2	...	...	1	...	1
131	Duniapur	2,150	...	11	...	40	1	...	...	...	1	...	1
MUZAFFARGARH DISTRICT.													
132	Muzaffargarh	3,737	...	5	...	68	8	18	...	...	1	1	2
133	Khangarh	3,621	...	5	...	97	5	11	...	...	1	...	1
134	Alipur	2,788	...	6	...	63	5	8	...	...	...	...	...
135	Khairpur	2,257	...	4	...	36	6	6	...	...	...	...	...
D. G. KHAN DISTRICT.													
136	Dera Ghāzi Khan	21,697	...	24	...	374	36	41	...	...	7	3	10
137	Jāmpur	5,928	...	4	...	102	14	21	...	...	...	1	1
138	Dājal	6,213	...	25	...	114	7	47	1	...	1	...	2
139	Rājanpur	3,917	...	1	...	68	5	5	...	...	...	...	...
140	Kot Mithan	3,487	...	...	...	48	5	1	...	...	...	...	...
Total		1,993,961	33	1,792	15,853	43,863	4,316	11,281	29	14	570	68	681
Total for the Province		2,0108,690	371	11,029	171,302	473,352	14,124	57,015	143	172	4,888	1,189	6,392

No. VI.—concluded.

TOWNS OF THE PUNJAB DURING THE YEAR 1902.

11	12	13										14
All other causes.	Total deaths from all causes.	RATIO OF DEATHS PER 1,000 OF POPULATION.										No.
		Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		
										For the year.	Mean of previous five years.	
15	16	17	18	19	20	21	22	23	24	25	26	27
372	1,403	...	1'02	12'77	15'83	1'16	5'18	0'39	13'12	49'48	26'35	96
236	144	0'44	0'50	9'19	20'70	2'82	4'98	0'55	13'06	52'24	38'31	97
63	228	...	0'46	0'15	20'02	0'15	4'00	0'62	9'70	35'11	33'94	98
33	129	...	0'65	0'37	24'03	1'48	2'96	...	12'20	47'69	28'91	99
67	286	...	1'41	11'09	27'41	0'60	3'43	0'20	13'49	57'65	31'04	100
114	387	...	...	0'70	24'72	1'83	3'37	0'70	16'01	47'32	38'37	101
273	1,004	...	0'21	8'03	21'16	1'78	6'67	0'52	14'33	52'71	35'63	102
189	437	...	0'85	...	14'10	1'69	6'11	0'56	17'76	41'07	36'15	103
48	229	...	5'29	0'31	13'84	2'18	6'13	...	7'46	35'61	27'90	104
56	215	...	...	...	11'83	0'92	15'71	0'92	10'35	39'73	29'75	105
33	129	...	1'37	...	10'59	2'22	1'88	0'34	5'64	22'03	29'31	106
128	333	...	0'98	...	18'88	1'31	1'09	0'11	13'97	36'34	34'62	107
165	588	...	2'62	0'11	14'51	1'98	3'00	0'43	8'83	31'48	30'96	108
85	270	...	0'42	...	19'67	3'60	1'38	0'55	11'77	37'40	35'51	109
80	332	...	5'52	0'18	13'07	2'02	1'23	0'35	7'02	29'38	22'92	110
103	312	...	0'26	...	15'64	1'62	0'34	0'09	8'80	26'75	22'13	111
151	818	...	1'60	...	36'60	9'22	0'87	0'15	10'97	59'40	41'00	112
509	1,949	...	0'25	...	22'45	3'02	4'46	0'40	10'81	41'40	32'26	113
20	68	...	...	0'66	19'12	1'98	8'57	1'32	13'18	44'83	31'64	114
68	334	...	11'83	...	17'51	0'71	1'06	0'35	8'05	39'52	28'47	115
91	267	...	0'10	...	11'02	1'38	5'31	0'20	9'29	27'25	29'55	116
46	152	...	0'93	...	9'67	0'93	0'53	0'13	5'30	17'49	21'91	117
2	80	...	1'54	...	13'88	0'93	0'92	0'62	6'78	24'67	40'15	118
11	154	...	0'56	...	23'91	1'32	0'94	0'19	2'07	28'99	40'36	119
42	206	...	0'52	...	17'82	2'10	0'79	0'26	5'50	27'00	25'35	120
40	253	...	...	...	25'93	9'96	0'69	0'34	6'87	43'78	42'75	121
172	343	...	0'46	0'11	15'26	2'96	0'34	0'34	19'58	39'05	34'43	122
215	464	...	0'69	...	13'11	2'29	0'76	0'42	14'92	32'19	36'16	123
255	636	...	0'26	2'42	19'00	1'08	1'68	0'45	16'26	40'55	34'71	124
71	390	...	0'33	4'80	24'97	3'05	1'09	0'55	7'74	42'53	Not available.	125
69	2,376	...	1'11	0'01	15'76	2'59	2'71	0'33	9'33	31'84	28'30	126
31	176	...	2'88	...	22'33	0'36	...	0'36	5'76	31'70	27'74	127
55	171	...	1'02	...	12'76	3'91	0'85	0'51	10'03	29'08	34'93	128
68	189	...	3'88	...	16'70	0'97	1'36	0'58	13'21	36'71	29'71	129
44	89	...	...	...	13'86	1'58	0'79	5'40	17'42	34'5	31'04	130
18	71	...	5'12	...	18'60	0'47	...	0'47	8'37	33'02	33'86	131
34	135	...	1'34	...	18'20	2'14	4'82	0'54	9'10	36'13	33'88	132
45	162	...	1'38	...	26'79	1'38	3'04	0'28	11'88	44'74	35'90	133
62	143	...	1'79	...	22'00	1'79	2'87	...	22'24	51'29	39'96	134
57	109	...	1'77	...	15'95	2'66	2'66	...	25'25	48'29	53'17	135
192	677	...	1'11	...	17'24	1'66	1'89	0'46	8'85	31'20	32'02	136
70	212	...	0'67	...	17'21	2'36	3'54	0'17	11'81	35'76	26'75	137
38	23	...	4'02	...	18'35	1'13	7'56	0'32	6'12	37'50	37'95	138
17	96	...	0'26	...	17'36	1'28	1'28	...	4'34	24'51	32'12	139
12	66	...	...	...	13'77	1'43	0'29	...	3'44	18'93	27'63	140
20,662	98,481	0'02	0'90	7'95	22'00	2'10	5'66	0'34	10'36	49'39	36'72	
152,788	886,973	0'02	0'58	8'52	23'54	0'70	2'84	0'32	7'60	44'11	33'71	

ANNUAL FORM No. VII.

DEATHS REGISTERED FROM CHOLERA IN THE DISTRICTS OF THE PUNJAB DURING EACH MONTH OF THE YEAR 1902.

1	2	3	4	5												6			7			8	9		
No.	DISTRICTS.	CIRCLES OF REGISTRATION.		TOWNS AND VILLAGES.		MONTHS.												TOTAL.			RATIO OF DEATHS PER 1,000 OF POPULATION.			Mean ratio per 1,000 for previous five years.	No.
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
DELHI DIVISION.																									
1	Hissar	27	...	972	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.85	1
2	Rohtak	15	...	502	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.67	2
3	Gurgaon	21	2	1,179	4	...	...	...	...	27	45	...	...	54	...	...	...	61	65	126	0.16	0.18	0.17	0.33	3
4	Delhi	15	3	718	3	...	...	...	...	...	...	...	...	3	1	...	...	3	1	4	0.01	0.003	0.01	0.12	4
5	Karnal	26	1	1,300	1	...	...	...	...	...	...	...	...	17	12	...	...	12	17	29	0.03	0.04	0.03	0.40	5
6	Umballa	19	14	1,725	20	...	3	...	...	1	4	24	57	71	2	...	...	88	74	162	0.21	0.22	0.21	0.08	6
7	Simla	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
JULLUNDUR DIVISION.																									
8	Kangra	18	1	718	2	...	...	...	...	...	...	...	...	...	...	...	38	25	13	38	0.06	0.04	0.05	...	8
9	Hoshiarpur	24	...	2,128	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.03	9
10	Jullundur	19	...	1,226	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.07	10
11	Ludhiana	15	...	809	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.14	11
12	Ferozepore	25	1	1,511	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	0.001	...	0.001	0.59	12
LAHORE DIVISION.																									
13	Montgomery	20	...	1,374	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.22	13
14	Lahore	20	1	1,540	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	0.001	0.001	0.54	14
15	Amritsar	16	...	1,047	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.11	15
16	Gurdaspur	25	...	2,355	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.08	16
17	Sialkot	21	...	2,355	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.11	17
18	Juianwala	18	1	1,339	1	...	...	...	...	...	...	...	...	...	7	1	...	6	2	8	0.01	0.004	0.01	0.13	18
RAWALPINDI DIVISION.																									
19	Gujrat	13	...	1,340	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.08	19
20	Shahpur	20	...	794	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.47	20
21	Jhelum	16	...	978	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.21	21
22	Rawalpindi	23	1	1,714	1	...	...	...	...	...	...	...	...	...	2	...	...	2	...	2	0.004	...	0.002	0.19	22
MOOLTAN DIVISION.																									
23	Mianwali	19	...	431	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.05	23
24	Jhang	27	...	1,800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.13	24
25	Moolhan	22	...	1,357	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.10	25
26	Muzaffargarh	18	...	704	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.01	26
27	Dera Ghazi Khan.	22	...	718	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.34	27
Total for the Province.		535	25	32,834	39	...	3	...	...	28	50	24	78	147	3	...	38	120	173	371	0.02	0.02	0.02	0.27	

ANNUAL FORM No. VIII.

**DEATHS REGISTERED FROM SMALL-POX IN THE DISTRICTS OF THE
PUNJAB DURING EACH MONTH OF THE YEAR 1902.**

ANNUAL FORM

DEATHS REGISTERED FROM SMALL-POX IN THE DISTRICTS

1	2	3		4		5						
No.	DISTRICTS,	CIRCLES OF REGISTRATION.		TOWNS AND VILLAGES,		MONTHS.						
		Number in each district.	Number from which deaths from small-pox were reported.	Number in each district.	Number from which deaths from small-pox were reported.	January.	February.	March.	April.	May.	June.	July.
1	2	3	4	5	6	7	8	9	10	11	12	13
DELHI DIVISION.												
1	Hissár	27	11	972	37	3	2	2	4	8	9	5
2	Rohtak	15	5	502	5	...	3	3	1	1	..	...
3	Gurgaon	21	16	1,179	19	5	10	11	13	17	32	16
4	Delhi	15	3	718	4	...	...	...	3	3	3	...
5	Karnál	26	11	1,390	20	...	1	3	16	23	15	10
6	Umballa	19	15	1,725	80	4	15	30	25	26	17	6
7	Simla	3	2	51	25	14	8	1	2	...	8	5
JULLUNDUR DIVISION.												
8	Kángra	18	10	718	16	1	4	4	5	6	6	2
9	Hoshiárpur	24	24	2,128	256	24	35	64	91	122	142	96
10	Jullundur	19	19	1,226	206	86	98	104	290	183	80	46
11	Ludhiána	15	12	869	45	2	3	6	4	13	11	4
12	Ferozepore	25	22	1,511	199	19	14	22	49	82	54	45
LAHORE DIVISION.												
13	Montgomery	20	20	1,374	119	49	61	80	67	69	68	59
14	Lahore	29	28	1,540	271	96	51	59	95	143	148	79
15	Amritsar	15	14	1,047	239	29	22	55	75	148	134	79
16	Gurdáspur	25	20	2,255	87	11	92	32	30	46	81	30
17	Siálkot	21	18	2,355	175	28	47	70	25	106	68	47
18	Gujránwála	18	17	1,339	66	12	20	15	28	55	37	21
RAWALPINDI DIVISION.												
19	Gujrát	13	12	1,340	181	26	32	47	81	92	63	39
20	Shahpur	20	20	794	262	117	166	204	159	184	97	46
21	Jhelum	16	16	978	44	51	71	60	55	74	75	72
22	Ráwalpindi	23	16	1,714	172	11	9	39	55	70	69	39
MOOLTAN DIVISION.												
23	Miánwáli	19	17	431	89	9	39	28	35	45	35	26
24	Jhang	27	17	1,899	175	47	35	85	44	83	108	87
25	Mooltan	22	20	1,357	110	59	43	78	77	106	93	48
26	Muzaffargarh	18	16	704	179	73	52	86	100	118	87	78
27	Dera Gházi Khan	22	21	718	127	20	39	47	55	79	53	25
Total for the Province ...		535	424	32,834	3,208	796	972	1,235	1,544	1,902	1,593	1,010

No. VIII.

OF THE PUNJAB DURING EACH MONTH OF THE YEAR 1902.

					6			7		8			9	10
					TOTAL.			NUMBER OF DEATHS AMONG CHILDREN.		RATIO OF DEATHS PER 1,000 OF POPULATION.			Mean ratio per 1,000 for previous five years.	No.
August.	September.	October.	November.	December.	Males.	Females.	Total.	Under one year.	Over one year and under ten years.	Males.	Females.	Total.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
5	2	3	3	1	30	17	47	11	26	0.07	0.05	0.06	0.57	1
...	...	...	...	1	5	4	9	3	4	0.02	0.01	0.01	0.12	2
12	8	1	2	3	67	63	130	39	78	0.17	0.18	0.17	0.75	3
...	2	2	...	...	5	8	13	6	5	0.01	0.03	0.02	0.18	4
2	2	4	3	1	42	38	80	10	62	0.09	0.09	0.09	0.26	5
9	8	7	10	15	82	90	172	39	76	0.20	0.26	0.23	0.41	6
...	1	1	...	...	22	18	40	3	6	0.06	1.43	1.12	0.28	7
1	1	...	...	...	23	7	30	2	1	0.06	0.02	0.04	0.01	8
47	15	14	20	46	376	340	716	202	265	0.72	0.73	0.72	0.23	9
26	11	8	8	19	490	469	959	227	425	1.00	1.13	1.06	0.26	10
4	4	7	2	5	32	33	65	11	28	0.09	0.11	0.10	0.22	11
35	18	26	14	23	267	204	471	103	212	0.41	0.48	0.44	0.47	12
40	24	17	16	19	302	267	569	158	320	1.12	1.17	1.14	1.08	13
39	21	14	66	104	479	436	915	173	577	0.76	0.84	0.80	0.52	14
42	26	10	7	23	373	277	650	130	429	0.67	0.60	0.64	0.38	15
14	7	12	31	38	191	233	424	167	195	0.38	0.54	0.45	0.18	16
21	12	7	11	15	270	247	517	120	339	0.48	0.49	0.48	0.56	17
10	5	2	1	5	106	105	211	60	126	0.22	0.26	0.24	0.11	18
22	8	5	20	48	256	227	483	168	240	0.66	0.63	0.64	0.17	19
35	11	19	18	71	624	503	1,127	297	607	2.28	2.00	2.15	0.31	20
31	13	13	36	56	339	268	607	273	234	1.14	0.91	1.03	0.30	21
17	11	8	40	221	306	283	589	176	325	0.66	0.67	0.66	0.41	22
12	8	7	19	34	149	148	297	78	142	0.67	0.74	0.70	0.71	23
46	20	13	24	46	322	316	638	214	282	0.58	0.71	0.64	0.45	24
35	36	22	28	27	357	305	662	148	267	0.94	0.96	0.95	0.27	25
57	28	15	27	41	402	366	762	140	304	1.83	1.94	1.88	0.47	26
47	33	25	35	48	242	264	506	89	248	0.95	1.23	1.08	0.28	27
609	335	272	441	920	6,099	5,530	11,629	3,045	5,823	0.56	0.59	0.58	0.36	

ANNUAL FORM

DEATHS REGISTERED FROM FEVERS IN THE DISTRICTS

1	2	3		4		5					
		CIRCLES OF REGISTRATION.		TOWNS AND VILLAGES.		MONTHS.					
		Number in each district.	Number from which deaths from fevers were reported.	Number in each district.	Number from which deaths from fevers were reported.	January.	February.	March.	April.	May.	June.
1	2	3	4	5	6	7	8	9	10	11	12
DELHI DIVISION.											
1	Hissár	27	27	972	972	2,935	2,328	2,701	2,572	2,015	1,449
2	Rohtak	15	15	502	490	1,831	1,730	1,503	1,479	1,895	1,121
3	Gurgaon	21	21	1,179	1,179	1,893	1,742	1,988	1,871	1,931	1,604
4	Delhi	15	15	718	696	1,831	1,647	1,855	1,930	2,102	1,509
5	Karnál	26	26	1,390	1,272	3,123	2,796	3,321	2,828	2,569	2,240
6	Umballa	19	19	1,725	1,677	1,886	1,510	1,525	1,101	1,159	983
7	Simla	3	3	51	51	20	18	22	23	31	33
JULLUNDUR DIVISION.											
8	Kángra	18	18	718	699	1,241	1,191	1,177	1,692	1,391	1,145
9	Hoshiárpur	24	24	2,128	1,555	1,309	1,044	1,193	1,231	1,205	1,037
10	Jullundur	19	19	1,226	1,151	2,092	1,729	1,984	1,613	1,610	1,058
11	Ludhiána	15	15	869	869	1,858	1,322	825	569	532	586
12	Ferozepore	25	25	1,511	1,223	2,994	2,230	2,414	1,879	1,558	1,159
LAHORE DIVISION.											
13	Montgomery	20	20	1,374	1,021	1,023	688	613	469	463	340
14	Lahore	29	29	1,540	1,476	2,904	2,350	2,606	2,217	2,193	1,683
15	Amritsar	15	15	1,047	1,007	2,788	2,195	2,285	2,460	2,983	2,253
16	Gurdáspur	25	25	2,255	2,169	1,580	1,385	1,686	1,191	1,410	1,241
17	Siálkot	21	21	2,355	2,269	3,490	3,153	3,095	2,537	2,654	1,583
18	Gujránwála	19	18	1,339	1,339	2,648	2,351	2,110	1,808	2,460	1,550
RAWALPINDI DIVISION.											
19	Gujrát	13	13	1,340	1,259	1,820	1,415	1,429	995	1,168	824
20	Shahpur	20	20	794	789	967	915	791	586	685	595
21	Jhelum	16	16	978	913	1,542	1,389	1,248	897	952	793
22	Ráwalpindi	23	23	1,714	1,714	2,032	2,164	1,901	1,520	1,359	1,231
MOOLTAN DIVISION.											
23	Miánwáli	19	19	431	396	953	856	964	791	879	690
24	Jhang	27	27	1,899	1,872	2,807	2,009	1,771	1,716	1,752	1,197
25	Mooltan	22	22	1,357	1,120	1,547	1,207	1,096	1,077	1,226	882
26	Muzaffargarh	18	18	704	564	1,089	797	801	744	744	604
27	Dera Gházi Khan	22	22	718	597	920	804	677	700	906	648
Total for the Province ...		535	535	32,834	30,279	51,124	42,960	43,581	38,496	39,832	30,036

No. IX.

OF THE PUNJAB DURING EACH MONTH OF THE YEAR 1902.

						6			7			8	9
						TOTAL.			RATIO OF DEATHS PER 1,000 OF POPULATION.			Mean ratio per 1,000 for previous five years.	No.
July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.		
13	14	15	16	17	18	19	20	21	22	23	24	25	26
1,222	1,357	1,323	1,928	2,200	1,954	12,800	11,214	24,014	30.61	30.55	30.72	26.04	1
821	1,366	1,308	2,520	2,222	1,868	10,518	9,141	19,659	31.57	30.73	31.17	29.27	2
1,165	1,509	1,910	2,540	2,174	1,849	11,557	10,619	22,176	29.60	29.85	29.72	24.09	3
1,071	1,385	1,414	2,318	2,362	2,236	11,202	10,458	21,660	30.27	29.00	31.53	22.79	4
1,411	1,763	1,851	2,280	2,632	2,707	15,536	14,015	29,551	32.44	34.67	33.46	32.37	5
718	991	1,666	1,661	1,362	1,259	8,043	7,728	15,771	19.18	22.50	20.66	28.96	6
41	27	35	24	18	27	172	142	314	7.47	11.30	8.83	9.15	7
1,142	1,582	2,057	2,206	1,260	1,299	8,545	8,788	17,333	21.55	23.88	22.67	21.76	8
988	1,173	1,517	1,941	1,614	1,508	7,514	8,196	15,710	14.29	17.07	15.87	18.70	9
1,032	1,225	1,319	1,780	1,744	1,559	8,744	10,002	18,746	17.91	24.04	20.73	17.22	10
647	758	909	1,322	1,481	1,092	5,837	6,064	11,901	15.81	19.95	17.68	26.09	11
1,043	1,158	1,386	2,592	3,691	3,847	12,944	12,457	25,401	25.62	29.32	27.25	31.12	12
294	326	314	354	488	644	3,157	2,854	6,011	11.75	12.46	12.08	15.11	13
1,388	1,332	1,325	1,811	2,280	2,521	12,538	12,077	24,615	19.91	23.37	21.47	22.59	14
1,846	1,734	1,659	2,913	3,301	3,082	15,043	14,456	29,499	26.92	31.19	28.85	20.99	15
1,159	1,358	1,523	2,083	1,842	1,899	8,850	9,452	18,302	17.44	22.02	19.54	20.31	16
1,379	1,597	1,522	1,950	1,956	2,041	12,540	14,417	26,957	22.19	28.48	25.16	22.00	17
1,534	1,435	1,210	2,087	2,170	2,161	12,154	11,370	23,524	25.05	26.05	26.41	20.92	18
794	1,021	1,080	1,494	1,541	1,895	7,247	7,729	14,976	18.61	21.40	19.95	18.62	19
562	609	533	793	1,052	1,343	4,657	4,774	9,431	17.05	19.01	17.99	15.77	20
810	898	940	1,627	1,924	1,600	7,483	7,137	14,620	25.12	24.37	24.75	21.06	21
1,144	1,362	1,497	2,096	2,297	2,336	10,673	10,316	20,989	23.02	24.42	23.69	20.30	22
516	586	514	656	966	929	4,804	4,496	9,300	21.45	22.41	21.90	25.79	23
1,129	1,486	1,155	1,543	2,052	2,744	11,332	9,979	21,311	20.26	22.51	21.25	13.80	24
800	749	771	1,039	1,309	1,357	6,791	6,269	13,060	17.88	19.71	18.71	17.82	25
541	601	590	816	1,059	938	4,837	4,485	9,322	21.97	24.18	22.98	24.74	26
526	689	650	781	865	1,038	4,931	4,273	9,204	19.40	19.92	19.59	19.87	27
25,673	30,002	31,928	45,105	47,987	46,728	240,414	235,908	476,322	22.27	25.02	23.54	22.57	

ANNUAL FORM

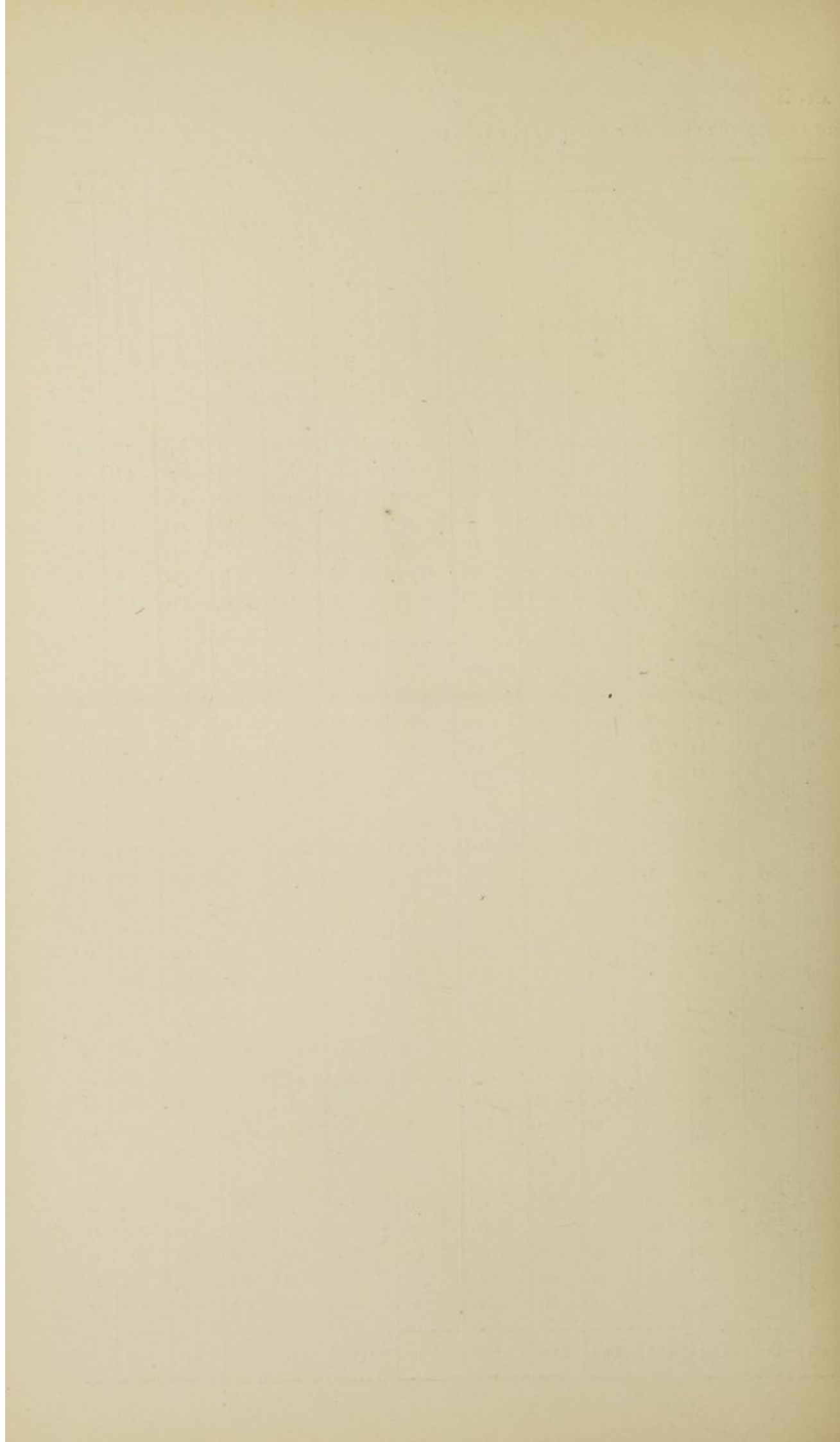
DEATHS REGISTERED FROM DYSENTERY AND DIARRHŒA IN THE DISTRICTS

1	2	3		4		5					
No.	DISTRICTS.	CIRCLES OF REGISTRATION.		TOWNS AND VILLAGES.		MONTHS.					
		Number in each district.	Number from which deaths from dysentery and diarrhœa were reported.	Number in each district.	Number from which deaths from dysentery and diarrhœa were reported.	January.	February.	March.	April.	May.	June.
1	2	3	4	5	6	7	8	9	10	11	12
DELHI DIVISION.											
1	Hissâr	27	24	972	122	22	15	31	39	19	32
2	Rohtak	15	15	502	219	13	12	5	18	17	13
3	Gurgaon	21	21	1,179	311	44	36	41	41	69	50
4	Delhi	15	15	718	429	80	49	60	62	71	51
5	Karnâl	26	26	1,390	130	64	24	42	36	42	48
6	Umballa	19	19	1,725	432	68	56	42	56	57	38
7	Simla	3	3	51	35	...	5	2	2	5	2
JULLUNDUR DIVISION.											
8	Kangra	18	18	718	575	39	34	40	63	56	78
9	Hoshiarpur	24	24	2,128	308	84	48	61	64	58	45
10	Jullundur	19	19	1,226	123	40	31	29	43	55	36
11	Ludhiána	15	15	869	102	57	24	23	25	27	38
12	Ferozepore	25	25	1,511	181	32	16	26	21	34	33
LAHORE DIVISION.											
13	Montgomery	20	20	1,374	79	17	7	10	6	7	13
14	Lahore	29	28	1,540	182	89	33	47	46	80	48
15	Amritsar	15	15	1,047	306	89	36	52	71	96	74
16	Gardâspur	25	25	2,255	627	76	36	63	100	141	98
17	Siâlkot	21	21	2,855	1,045	83	67	98	135	132	71
18	Gojranwâla	18	17	1,339	99	14	11	22	18	26	24
RAWALPINDI DIVISION.											
19	Gujrât	13	13	1,340	201	29	23	30	50	44	27
20	Shahpur	20	20	794	213	24	12	8	25	25	26
21	Jhelum	16	16	978	117	21	10	11	7	17	15
22	Râwalpindi	23	19	1,714	30	11	14	4	22	7	38
MOOLTAN DIVISION.											
23	Miânwâli	19	19	431	86	12	8	14	9	20	17
24	Jhang	27	20	1,899	193	29	19	15	22	40	23
25	Moo'tan	22	18	1,357	60	24	11	22	24	20	16
26	Mozaffargarh	18	18	704	70	9	3	3	7	9	12
27	Dera Ghâzi Khan	22	17	718	48	5	4	6	14	11	10
Total for the Province ...		535	510	32,834	6,323	1,075	644	807	1,028	1,185	976

No. X.

OF THE PUNJAB DURING EACH MONTH OF THE YEAR 1902.

						6			7			8	9
						TOTAL.			RATIO OF DEATHS PER 1,000 OF POPULATION.			Mean ratio per 1,000 for previous five years.	No.
July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.		
13	14	15	16	17	18	19	20	21	22	23	24	25	26
34	51	27	47	29	26	227	145	372	0.54	0.40	0.48	1.59	1
18	50	22	17	20	14	122	97	219	0.37	0.33	0.35	0.74	2
63	115	128	105	114	70	483	393	876	1.24	1.10	1.17	1.56	3
63	95	84	91	96	118	533	387	920	1.44	1.22	1.34	1.48	4
32	47	47	53	41	53	314	215	529	0.66	0.53	0.60	0.98	5
65	90	127	128	137	120	577	405	982	1.37	1.18	1.29	1.43	6
13	9	7	5	5	1	34	22	56	1.48	1.75	1.57	1.87	7
61	64	60	62	40	57	337	317	654	0.85	0.86	0.86	1.06	8
52	60	83	87	46	47	404	331	735	0.77	0.71	0.74	1.01	9
34	70	72	64	58	55	310	277	587	0.63	0.67	0.65	0.69	10
26	33	43	57	45	34	235	197	432	0.64	0.65	0.64	1.02	11
25	29	23	35	34	35	222	126	348	0.44	0.30	0.37	0.82	12
10	9	17	9	14	19	91	47	138	0.24	0.21	0.28	0.48	13
43	52	65	77	63	77	415	305	720	0.66	0.59	0.63	0.65	14
78	73	64	99	126	97	564	391	955	1.01	0.84	0.93	0.83	15
88	151	175	201	135	132	758	638	1,396	1.49	1.49	1.49	1.41	16
104	139	133	84	76	37	605	554	1,159	1.07	1.09	1.08	0.88	17
17	34	21	21	16	19	129	114	243	0.27	0.28	0.27	0.21	18
23	40	43	43	32	24	234	184	418	0.60	0.51	0.56	0.49	19
33	47	32	53	34	30	207	142	349	0.76	0.57	0.67	0.71	20
19	30	52	41	47	44	182	132	314	0.61	0.45	0.53	0.62	21
54	46	84	81	65	71	298	190	497	0.64	0.47	0.56	0.19	22
17	26	29	29	25	39	130	115	245	0.58	0.57	0.58	0.44	23
40	42	55	50	42	52	244	185	429	0.44	0.42	0.43	0.37	24
34	28	26	22	25	32	176	118	294	0.46	0.37	0.42	0.57	25
3	6	4	29	23	21	76	53	129	0.35	0.29	0.32	0.38	26
7	14	21	6	16	14	79	49	128	0.31	0.23	0.27	0.32	27
1,054	1,450	1,564	1,601	1,404	1,338	7,986	6,138	14,124	0.74	0.66	0.70	0.83	



Statement showing the death-rates from Cholera, Small-pox, Fevers and Dysentery and Diarrhœa for the five years preceding, and for the period since the introduction of Drainage or Water Supply, or both, in the undermentioned Towns.

TOWNS.	DATE OF COMPLETION OF WORKS OF		AVERAGE ANNUAL DEATH-RATE SINCE THE INTRODUCTION OF DRAINAGE OR WATER SUPPLY, OR BOTH.				AVERAGE ANNUAL DEATH-RATE FOR THE FIVE-YEAR PERIOD PRECEDING THE INTRODUCTION OF DRAINAGE OR WATER SUPPLY, OR BOTH.				REMARKS.
	Drainage.	Water supply.	Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	
Delhi	1893	0.04	0.9	24.0	1.8	0.4	0.6	26.7	1.9	The works were begun in 1876 and completed in 1893.
Umballa	1895	0.2	0.5	13.7	4.6	0.5	0.4	19.3	6.4	
Simla	1893	1893	...	0.5	14.9	0.8	...	1.1	17.1	1.4	
Lahore	1881	0.8	0.7	20.0	1.6	1.9	1.6	27.8	2.3	
Dalhousie	1894	..	0.1	11.5	2.3	...	...	9.6	2.4	
Gujránwála	1892	...	0.2	0.5	14.7	1.1	0.5	0.6	19.7	1.7
Ráwalpindi	1887	0.7	0.3	21.9	2.4	0.5	0.1	16.4	3.4	
Murree	1894	0.2	...	16.6	1.4	0.7	0.4	14.8	0.9	
Kálka	1890	0.3	0.01	16.5	2.5	1.7	0.2	15.2	3.9	

